

JEROME CARDAN.

THE LIFE

OF

GIROLAMO CARDANO, OF MILAN,
PHYSICIAN.

BY HENRY MORLEY.



IN TWO VOLUMES.

VOL. I.

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P R E F A C E.

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JEROME CARDAN, confident of being remembered by posterity, desired that he should be fully known, and left scattered about his writings much material for the biographer. The material so liberally furnished has not yet been used. Encyclopædists have for generations told the student that the life of this philosopher was one of the most curious on record, full of extremes and contradictions, the most wonderful sense and the wildest nonsense. They have adopted the near-sighted views of Gabriel Naudé, have accepted sometimes gross errors of fact from the Scaligers, and, when they have gone to Cardan himself for information, have rarely carried their research farther than the perusal of a work or two. Commonly they have been content with a reading of his book on his

own Life, which is no autobiography, but rather a garrulous disquisition upon himself, written by an old man when his mind was affected by much recent sorrow.

In that work Cardan reckoned that he had published one hundred and thirty-one books, and that he was leaving behind him in manuscript one hundred and eleven. It is only by a steady search among his extant works, and by collecting into a body statements and personal allusions which occur in some of them, assigning to each its due place, and, as far as judgment can be exercised, its due importance, that a complete narrative can be obtained, or a right estimate formed of his Life and Character. Of such collation this work] is the result; and, although it is inevitable that there should be errors and omissions in it, since the ground is new, the labour on it has been great, and I am but a feeble workman,—yet, forasmuch as the book is an honest one, in which nothing vital has been held back or wrongly told, except through ignorance, and no pains have been grudged to make the drawback, on account of ignorance, as small as possible, I am not afraid to put my trust in the good-nature of the reader who shall detect some of its omissions and shortcomings.

The following sentences, from the notice of Cardan in Tiraboschi's History of Italian Literature, fairly represent

the common feeling with regard to him:—"Brücker regrets with reason that nobody has written his life with exactitude. . . . The wide scope of my own argument does not permit me to make any minute researches; I can only say what will be enough to give some notion of this most rare man. In the account that he gives of his own character, he attributes to himself inclinations that it would seem impossible to have co-existing in a single character, and at the same time he speaks so much evil of himself, that by this only one may see how strange a man he was. . . . Whoever would suppose that a man foolishly lost behind judicial astrology . . . a man more credulous over dreams than any silly girl, observing them scrupulously in himself and others—a man who believed that he had the friendship of a Demon, who by marvellous signs warned him of perils—a man who himself saw and heard things never heard or seen by any other man—a man, in short, of whom, if we read only certain of his works, we may say that he was the greatest fool who ever lived—who would suppose, I say, that such a man was at the same time one of the profoundest and most fertile geniuses that Italy has produced, and that he made rare and precious discoveries in mathematics and in medicine? Nevertheless, such was Cardan by the con-

fession even of those who speak of him with most contempt."

Of that candour of self-revelation to which allusion is made in the preceding extract, Jerome himself writes: "What if I confess my vices; why marvel; am I not a man? And how much more human is it to acknowledge than dissemble? What we cloak, we protect; what we acknowledge, we confess and avoid. Let, therefore, the most sweet love of truth and the most happy consciousness thereof conquer all dread of infamy, all suspicion of calumny¹." Elsewhere he says on the same subject—and we must remember that he did not live in cleanly times—"What if any one were to address the kings of the earth, and say to them, 'There is not one of you who does not eat vermin and other worse filth of your servants?' In what spirit would the speech be taken, though most true? What is this but an ignoring of our condition, a determination not to know what we do know, to put a thing out of our sight by force? So it is with our sins, and all else that is filthy, vain, confused, and uncertain in us. Rotten apples fall from the best tree. I tell nothing new; I do but tell the naked truth²." Evident enough it is that

¹ *Geniturarum Exemplar* (ed. 1555), p. 523.

² *De Vitâ Propriâ*, cap. xiii.

Cardan is determined to hide nothing, and it is not less evident that he has been ill-rewarded for his frankness. Over and over again all self-accusations have been accepted and driven home against him, all self-praise has been called vanity, and statements of his that appeared to be too marvellous have been pronounced untrue.

But the man of profound genius sometimes wrote, we are told, as if he were a fool. His folly may instruct us. It belonged—bating some eccentricities—not to himself alone. His age claimed part in it, and bought his books. He was the most successful scientific author of his time; the books of his that were most frequently reprinted being precisely those in which the folly most abounded. He was not only the popular philosopher, but also the fashionable physician of the sixteenth century. Pope and emperor sought him; kings, princes, cardinals, archbishops were among his patients. There were other physicians in those days wise enough to be less credulous on many points, but greater wisdom did not win for them an equal fame. Cardan obtained a splendid reputation wholly by his own exertions, not only because he was a man of power and genius, but because he spent much of his energy upon ideas that, foolish as they now seem, were conceived in the true spirit of his age. He belonged

completely to his time. Hence it is that, as a philosopher, he almost perished with it ; and for the last hundred years his reputation has existed only as a legend.

I was first attracted to the study of Cardan, from which this work has arisen, by the individuality with which his writings are all marked, and the strange story of his life reflected in them. The book is twice as large as it was meant to be, and still there was matter that might have occupied another volume; for as I worked on, I found that out of the neglected writings of this old physician it was possible to re-construct the history of his career, with much minuteness in the kind of detail that would make it not only pleasant reading, but also, if rightly done, of some use to the student of the sixteenth century.

Pains have been taken to confine the narrative within the strictest bounds. There is not in it an incident, however trivial, which has been created or transformed by the imagination of the writer. I have kept rigidly to truth, and, as was necessary from the nature of the work, have, in treating the main subject, referred in notes to the authority for every statement. If here and there a little fact should happen not to be so authenticated, I beg to assure the reader that it was not set down lightly. I have even preserved to a very great extent in my own

writing Cardan's forms of speech. In support of those parts of the book which discuss accessory matters, I have thought it enough to indicate in the notes generally from what sources information has been got, and, in particular cases, to give the exact authority when for any reason it has seemed desirable to do so. Citations from the works of Cardan have been made, as far as possible, from editions published in his lifetime. Of each work, the edition used is stated when it is first named; and the paging quoted afterwards always belongs to the same issue, if no other is mentioned. Where no early copy was to be had, reference has been made to the collected works issued in 1663 at Paris, by Charles Spon, in ten volumes folio.

London, March, 1854.

When the first sheets of this work were printed, I had not seen Cardan's third horoscope of himself in the "*Geniturarum Exemplar*." I therefore was obliged to conjecture his mother's age, and the paternity of three children, whose deaths are recorded in vol. i. p. 7. It was, at the same time said in a note, that my opinion was insufficiently supported, and that it might be wrong. From the horoscope just mentioned, it appears that Cardan's mother was not quite so young as I had inferred, though there was still great dis-

parity between her age and that of Fazio. If her age at Jerome's birth was, as he says, thirty-seven, the disparity was of nineteen years. He adds, however, that she died on the 26th of July, 1537, at the age of seventy; and if the age so given be accurate, she must have been thirty-four years old when he was born, and twenty-two years younger than Fazio. She was the widow of Antonio Alberio; and of her three children that died of plague soon after Jerome's birth, Alberio was the father. They all died within forty days; two of them, within a week after their mother dreamt that they had gone to heaven. On the same authority, it may be added that Fazio and Clara had another child, a son, which died at birth.

A remark upon a trivial point is suggested by the word Clara that has just been used. There are few people mentioned in this narrative whose names would not admit of being written in more ways than one. I have had to make my choice in nomenclature among Latin forms, Latin Italianised, old or impure Italian, modern Italian, and Italian Englished. In speaking of men not Italians there was often a like difficulty. Very much wishing to avoid pedantry, and putting that wish foremost, I have endeavoured to use in each case a form that would suit the temper of the book without vexing the reader.

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JEROME CARDAN.

CHAPTER I.

BORN TO SORROW.

IN the year 1501¹, a woman, flying from the plague, passed under the gate of Milan which leads out upon the road to Pavia². She was a young widow³, the daughter of a studious man, Giacomo Micheria⁴, and she turned her back not only on the plague, but also on a grave

¹ De Consolatione, Lib. iii. (ed. Ven. 1542) p. 74. In the De Propriâ Vitâ Liber (ed. ex Bibl. Gab. Naudæi, Paris. 1643), cap. ii. p. 7, he writes the date 1500 by misprint. The misprint has been sometimes followed, though facts stated in the same book (as is shown by Bayle, who had read no other) correct it, and in every other place in his works Cardan writes 1501. See especially the date and hour of his birth given by him in his horoscope (Libelli V. De Supplemento Almanach. &c. ed. Norimberg. 1547, p. 121), where they are stated to be the 24th Sept. 1501, at forty minutes past six in the afternoon. Except the misprint, this coincides with his other statements on the subject. See also De Utilitate ex Adversis Capiendâ (ed. Basil. 1561), Lib. iii. p. 427.

² De Libris Propriis eorumque Usu. Liber ultimus. Opera curâ Spon. Vol. i. p. 96.

³ Compare notes 1, p. 2, and 1, p. 6.

⁴ De Prop. Vit. Lib. (ed. cit.) cap. i. p. 6.

jurisconsult and mathematician, who was, at that time, probably as much an object of aversion to her as the plague itself—his name was Fazio Cardan¹.

Fazio Cardan was a man of note among the learned in his neighbourhood, and was then fifty-six years of age². At the age of fifty-six he had already become toothless, although strong of limb and ruddy of complexion. He had good eyes; not in the sense of being beautiful, for they were white, but in the sense of being useful; for it was said that he could see with them in the night time. To his last days—to the age of eighty—Fazio Cardan continued to see objects clearly with the aid of less light than his neighbours needed, and required no spectacles. As a doctor, both in law and medicine, and member of the venerable college of men skilled in law, the white-eyed, toothless, stuttering, and round-shouldered mathematician clothed his healthy body in a purple robe. He wore a black skull-cap, which he dared only remove for a few minutes at a time, because his skull had suffered

¹ “. . . natus essem Papiæ, grassante in urbe nostrâ peste, tum etiam quòd mater partum ipsum occultari volebat, nec illius affines resciscerent. Pater enim meus, ut Senex ac Jurisconsultus, viduæ Matris meæ pauperis *publicas* nuptias aversabatur: ipsa vero turpe ducebat, quòd *diceretur* non ex conjuge peperisse.” De Libris Propriis. Liber ultimus. Opera curâ Spon. Vol. i. p. 96. Cardan never defames his mother.

² He was born at twenty minutes to nine in the morning of the 16th of July, 1445. See the date in his horoscope, Libelli V. De Suppl. Almanach. &c. (ed. cit.) p. 106.

damage in his youth, and it had been found necessary to remove some pieces of it. The skull may have been broken in a fray, for Fazio Cardan was always hot of temper¹. There was also a quick spirit of humour in him, but it was not genial; he was careless of money, and a ready lender, but he made few friends². He dwelt with Euclid in a world of angles and right-angles, and he himself was angular; nevertheless, his heart had rounded itself to the love of one man, very different in taste, Galeazzo Rosso³. As a student, also, he delighted in the ingenuity of Gianangelo Salvatico³, his pupil and house-companion. Rosso, who was a smith, equalled the juriconsult in a decided taste for mathematics, and delighted him by the ingenuity with which he turned his knowledge to good practical account.

The knowledge of Fazio, at the same time, had not remained idle. In the prime of life he had been deliberately drawn into print by the booksellers of Milan, who desired to publish something profitable to the learned, and applied to Fazio Cardan as a man likely to produce for them

¹ De Propriâ Vitâ (ed. cit.), cap. iii. p. 10, for the preceding details.

² De Utilitate ex Adv. Capiend. (ed. Basil. 1561) Lib. iii. pp. 428—430.

³ De Propr. Vit. cap. iii. p. 11. Galeazzo was by trade a smith. Op. cit. cap. xv. p. 71. Salvatico a senator. The smith was an ingenious man, who discovered for himself the screw of Archimedes before the works of that philosopher had been put into print. He made also remarkably well-tempered swords and shot-proof breastplates. De Prop. Vit. p. 11.

judicious matter¹. He resolved then to edit a work, at that time, I think, known only in manuscript, treating of rays of light, and of the eye, of reflection, and of allied topics, in the form of propositions proved by the aid of geometrical diagrams, of which the original author was John Peckham, Archbishop of Canterbury. This book, which really deserved promulgation—Peckham's *Perspectiva Communis*²—Fazio took upon himself, as he tells us in the dedication to his own edition, the great labour of correcting, a work heavy enough for a learned man, most heavy therefore for him. It was an arduous undertaking, he said, calling for great knowledge of mathematics pre-

¹ "Prospectiva Communis d. Johannes Archiepiscopi Cantuariensis ad unguem castigata per Facium Cardanum." Milan, 1480; p. 1 in the dedication. It begins thus: "In tantâ laborum cujuscunque generis copiâ, divino quodam imprimendi artificio comparata, appetentes hujus urbis impressores novi quidquam in medium afferre quod esset studiosis non mediocriter profuturum: persuasique mea opera id effici posse : me illud efflagitantes convenerunt."

² John Peckham, Archbishop of Canterbury, born 1240, became a minorite friar, and rose through sundry grades of Church preferment to his crowning dignity. He bought it of the Pope for 4000 marks, which afterwards he risked excommunication by not paying, or by paying slowly. He was a man of taste, luxurious, accomplished in the learning of the age, and liberal to all but Jews. The Jews he persecuted. He died in 1292, and was buried in Canterbury Cathedral. He left many works which still exist in MS. Only two have profited by the discovery of printing, namely, his *Collectanea Bibliorum*, and his *Perspectiva Communis*. The last is interesting as the first systematic work of the kind, and I find no trace of its having passed out of MS. into print before it was published, with additions and corrections, by Fazio Cardan. After that date it was re-issued frequently by other editors—at Leipsic in 1504, at Venice in 1505, and afterwards at Nuremberg, and Paris, and Cologne.

paratory to the correction of the original figures and the amendment of the text. He knew, however, that a work so difficult would at no time be undertaken; not for want of men learned enough—Heaven forbid that he should be so arrogant as to suppose it!—but for the trouble's sake, the work, though useful, would remain undone. Therefore he, Fazio Cardan, had done it. On the threshold of his task, however, since he had great need of a patron's countenance, he committed his book to one who was as grave as Camillus, as dexterous as Scipio, and so on¹. That was the book, and that was the manner of dedication to the book published by “the excellent doctor in the arts as well of medicine as law, and most experienced mathematician, Fazio Cardano, of Milan, residing in the venerable college of the Milanese jurisconsults.” This offspring of the mind of Fazio was about twenty years old² when Chiara Micheria, flying for refuge from the plague to Pavia³, took with her offspring of another kind, to which he also was the father, a child yet unborn.

Whatever pains Fazio had taken to protect his literary bantling against any risk of dropping dead into the world, the care that preceded the birth of his true child was

¹ Op. cit. In dedication.

² Its date of 1480 is assigned on the authority of Burnet. The copy in the British Museum has no title-page.

³ De Libr. Propr. Ed. ultima. Opera curâ Spon. Vol. i. p. 96.

bestowed in a precisely opposite direction. Chiara (Clara) Micheria was still very young¹, passionate of temper², and had quitted Milan in the worst of humours. Medicine refused, however, at her bidding—or rather at the bidding of her bad advisers³—to fulfil an evil purpose; and at Pavia, on the 24th of September⁴, in the year 1501, the living child of Fazio Cardan was brought, after a three days' labour⁵, through much trouble⁶, silently to light. Considering that it was very nearly dead, the nurse promptly immersed the infant in a little bath of wine⁵. It had already a growth of long dark hair upon its head⁵, and it very soon gave evidence of life and strength. That it would not die very soon there was great reason, the mother knew, to hope or fear, since it is certain that longevity becomes often inherited, and she herself—a short, fat, healthy woman, of a lively wit²—as well as the geometrician, came of long-lived ancestors⁷.

Let me dwell for a few minutes on this question of the

¹ "Matrem meam Claram Micheriam juvenem vidi, cum admodum puer essem." *De Consolatione* (ed. Ven. 1542), Lib. ii. p. 41.

² *De Propr. Vit.* Lib. p. 11.

³ "Medicamentum abortivum Alieno mandato bibit." *De Ut. ex Adv. Cap.* (ed. 1561) Lib. iii. p. 427.

⁴ See Note 1 on page 1.

⁵ *De Ut. ex Adv. Cap.* p. 427.

⁶ "Per vim extractus ut meo supplicio matrem liberarem a morte." *De Ut. ex Adv. Cap.* p. 427.

⁷ "Longævi autem fuere majores nostri." *De Propr. Vit. cap. iv.* pp. 5, 6, for the succeeding details.

infant's probable longevity. The father of Clara lived seventy-five years, and his brother, Angiolo, lived eighty-five. In the Cardans, the habitual tenacity of life was most remarkable. The grandfather of Fazio, the mathematician, was another Fazio; he had three sons: Giovanni, who lived to the age of ninety-four; Aldo, who lived eighty-eight years; and Antonio, the father of the second Fazio, who lived to the age of eighty-six. Giovanni, the first of these, uncle to Fazio the scholar, had two sons, Antonio and Angiolo, of which the former lived to the age of eighty-eight, and the latter very nearly reached a hundred. This Angiolo became known to the young son of Fazio as a decrepid old man, who, at the age of eighty, claimed paternity of two decrepid-looking children, and regained his sight. Even of these children one lived seventy years. To this enumeration must be added Gothardo, a brother to the second Fazio Cardan, and uncle of the child, who died eventually at the age of eighty-four. Since several of these men were living in the year 1501, Clara Micheria could take into her calculation a part only of these facts; there was enough, however, in her knowledge to remind her that the unwelcome son came of a long-lived stock, and that if he was to be accounted a discredit, he would probably discredit her for many years to come.

During the first month of the boy's life his nurse was

seized by the plague, and died under its touch in a few hours¹. The infant did not pass unscathed, for there appeared at the same time five carbuncles on its face; one on the nose, the other four arranged around it in the pattern of a cross. Although healing in a short time, it was observed that three years afterwards these carbuncles appeared again in the same places². Deprived of his nurse, and little aided by his mother, the son of Fazio Cardan was received into the house of Isidoro dei Resti³, a noble gentleman, his father's friend. At that time the geometer was burying in Milan all his other children dead of plague. They were two boys and a girl, half-brothers and half-sister to Clara's child⁴. In the house of Isidoro, the survivor says, speaking of the past out of his after-life, and tincturing his words with the bitterness of many griefs, "After a few days I fell sick of a dropsy and flux of the liver, yet nevertheless was pre-

¹ De Propr. Vit. cap. iv. p. 12.

² The page last cited and De Ut. ex Adv. Cap. p. 427.

³ De Propr. Vit. p. 13. De Ut. ex Adv. Cap. p. 427.

⁴ De Consolatione (ed. Ven. 1542), p. 74. Their names were Thomas, Ambrose, and Catilina. De Ut. ex Adv. Cap. p. 427. The passage in the De Consolatione, "jam trimestris duos fratres et unam sororem perdidit: crassante in civitate nostra pestilentia . . . tunc audaci et pio facto Is. Restæ nobilis viri et amici paterni, manibus ejus inter funera exceptus . . ." is my only textual authority for attributing these children to Fazio. It is indecisive, and I may be wrong. They may have been children left as consolations to the widow. If so, Clara must have married very early. Had they belonged equally to Fazio and Clara, one does not see why in the case of Jerome his mother

served, whether through the wrath or mercy of God I know not¹."

Thus environed by the plague-spots, physical and moral, which belong to an unwholesome period of human history, began the life of which we are about to trace the current. Out of the peace of our own homes let us look back with pity on the child whose birth made no man happy, and whose first gaze into the world was darkened by a mother's frown.

should have endeavoured to keep a knowledge of his birth from her relations, or why she should, in expectation of a fourth child, desire abortion, and resent the fact that Fazio was not known to the public as her husband. (See note 1, p. 2.) Besides, if her relations with Fazio were thus of some years' standing, how old was her widowhood? and could she still be "juvenis" when Jerome was a boy old enough to be told of her unhappiness, and of her wish (*De Consolatione*, p. 41) that she had died when he was born?

¹ *De Consolatione* (ed. Ven. 1542), Lib. iii. p. 74.

CHAPTER II.

IN WHAT WAY THE CHILD EARNED A MOST HOLY AND MOST HAPPY GOD-FATHER.

AFTER the death of its first nurse by plague, Clara Micheria had returned for a short time to her infant¹, but a new mother having been hired for it, she again obtained exemption from her burden. The nurse, who in the second month of the child's life became the third to whom it clung as to a mother, did not accept her charge without due knowledge of the fact that it had been kissed by the very plague itself, and bore the marks upon its countenance. To the new nurse, therefore, the baby was delivered by Isidoro dei Resti, naked and wet, out of a warm bath of vinegar. With clothes, infection might have gone into the poor woman's family—so men, at any rate, believed—the clothes, therefore, were burnt; vinegar, it was hoped, would disinfect the child.

By this nurse the child was taken to Moirago, a place distant about seven miles from Milan, on the road from Pavia to Binasco. The infant did not thrive under her

¹ De Propr. Vit. Lib. (ed. Naudæi), pp. 12, 13, for the facts stated in this and the succeeding page.

care. It may have carried with it some seeds of disease; it most probably found little that was wholesome in the squalid hut to which it was removed; perhaps, as they who paid for the child said, the woman herself was not competent to play the part of mother in a wholesome way¹. Certainly, the little body wasted, and acquired the hard and swollen belly, which at that time in Italy, as it is now in England, was too well known to the sight and touch of men, who in vain sought to supply with drugs the want of healthy homes among the poor. Though the child was not loved, there existed in the mind of nobody a criminal desire that it should die; and since, therefore, it wasted at the breast of its third mother, a fourth was hired, under whose care its health improved. With this nurse the boy remained—still at Moirago—and by her he was weaned in the third year of his life. In the next year, Clara Micheria claimed him at last, and took the son, who had learned to prattle at the knees of strangers, home to her own sad lodging in Milan. The doubtful character of Fazio's relation to her—she a girlish widow, he a toothless old geometer, aged sixty—filled her life with shame and sorrow, and a frequent theme of her discourse to the child was a desire that she had died when he was born².

¹ "Quòd nutrix utero gereret." De Propr. Vit. p. 13.

² De Consolatione, p. 41.

Clara Micheria was not at that time resident under the roof of Fazio Cardan¹. The laudatory verses sung in honour of the literary offspring of the grave jurisconsult, had ended with a distich in his praise, of which the literal translation is, that "in this man the house of Cardan rejoices. One man has acquired a knowledge of everything. Our age has not his equal²." Probably this man, who had learned everything, was not, in the year 1505, acquainted with the voice of his own child, that had been four years in the world and never sat upon his knee. The rejoicing of the house of Cardan was not great in the person of the little fellow who, after his removal to Milan, was perpetually beaten by his mother and her sister, Margherita, who dwelt with her: "A woman," he says afterwards, "who I believe must have been herself without a skin," so little was her mercy for the skin of Clara's child³.

The hands of three persons at Milan were against the child, for Fazio Cardan, though not residing in one house with Clara, now came into habitual communication with

¹ De Propr. Vit. p. 13. Statements in this and the next page to which no note is attached are dependent on the same authority.

² "Magna ratis magno curanda est remige. Deerat
Navita. Nunc Facius talia damna levat.
Hoc Cardana viro gaudet Domus. Omnia novit.
Unus. Habent nullum secula nostra parem."

Prospectiva Comm. d. Joh. Archiep. Cant. per
Fac. Cardan. Milan. 1480. Last page.

³ "Mulier cui fel defuisse existimo." De Propr. Vit. p. 13.

him, and administered a due share of the prickliest paternal discipline. The ill-treatment of the neglected boy was not, however, constant—though the hands of his father and mother were against him, their hearts were with him—he was, on the whole, treated less unkindly than before. His parents had ill-regulated tempers, and the child became the victim of the passions out of which he was unluckily begotten¹. Flagellation from his father and his mother, and his pitiless aunt, Margherita, impressed upon his memory three miserable years after his first arrival at Milan. At the end of those years, when his age was seven, and he had often been brought even to the point of death by the results of too incessant punishment, a respite followed. Father, mother, and Aunt Margaret perceived that the weak child, who had up to this time been suffering from a long series of bodily distempers, could be knocked about no longer without certain danger to his life; and so it happened, as the boy himself expressed it afterwards, that when he became old enough to do things by which he could fairly merit blows, it was found requisite to leave off beating him.

In that after-life, to which allusion has been made just now, I ought to say at once, that the son is never to be

¹ “Ambobus parentibus commune fuit iracundus esse, parum constanter etiam in amore filii.” De Propr. Vit. p. 11.

² “Tum primum cum meritò possem verberibus dignus haberi, a verberibus abstinendum decreverunt.” De Propr. Vit. p. 13.

found referring with unfilial bitterness to either of his parents. He always avoids making any express statement that would reflect positive dishonour on his mother¹; and both of her and of his father he speaks often with a reverent affection². He speaks more frequently, however, of his father, whom he certainly preferred, although he does not venture much beyond the remark made in an irresolute way on one occasion, that "my father appeared to me (if such a thing may be said) better and more loving than my mother³."

There was a rest then from blows for the sick child when he had attained his seventh year, but sorrow only laid aside one shape to reappear and vex him in another⁴. When the boy had first been brought to Milan, he had lodged with his aunt and mother in the Via dell' Arena⁵, by the Pavian gate, and they had afterwards removed

¹ See a curious example in page 2, note 1. He evades there and everywhere the direct statement that his mother was married, but in that passage leads up to the inference that she had been married privately. In the same spirit he says, when he relates his exclusion from the College of Physicians on the ground of illegitimacy, that he was rejected "*suspicionem obortâ quod (tam male a patre tractatus) spurius essem.*" *De Consolatione*, Lib. iii. p. 75. That his tenderness was not towards himself is shown by the whole tenor of his life. He would, for himself, rather have taken a perverse pleasure in the proclamation of a fact that rubbed respectability against the grain.

² See especially *De Util. ex Adv. Cap.* Lib. iii. p. 430.

³ *De Propr. Vit.* p. 12.

⁴ "*Mala sors minime me deseruit, infortunium commutavit non sustulit.*" *De Propr. Vit.* p. 13.

⁵ *De Propr. Vit. cap.* xxiv. p. 92.

into a street called Del Maino, opposite the citadel, where they were in the house of Lazzaro Soncino¹, a physician. A physician was a very fitting landlord for the boy, at any rate; and it may possibly have been to the representations of Lazzaro Soncino that the child was indebted for the resolve taken by his friends that he was to be flogged no longer. Very soon after this resolve was taken, a great change took place in the arrangements that existed among the high powers that presided over the boy's worldly destiny. Clara Micheria, with Margaret, her sister, removed to a lodging in the Via dei Rovelli, which they shared with Fazio Cardan². Some semblance of a home, as childhood is accustomed to interpret home, was now, for the first time, placed within the knowledge of the young pupil of sorrow. Father and mother dwelt under one roof with him; the home meant little more. It was no place of laughter, or caresses, or of childish sport. Fazio needed an attendant who should walk about with him while he was engaged upon his daily business, carrying his books and papers, or whatever else the learned lawyer needed to take with him when he went abroad. To this work—the work of a servant—Clara's child was put without delay³. Margaret and Clara being

¹ De Propr. Vit. cap. xxiv. p. 92.

² De Propr. Vit. p. 13, comp. with p. 92.

³ "Inde" (ab octavo) "*loco servi patrem ad decimum nonum annum perpetuo comitabar.*" De Consolatione (ed. Ven. 1542), Lib. iii. p. 74.

settled, to their satisfaction doubtless, in the lodging of the great mathematician and jurisconsult, the fragile boy of seven years old was ordered daily to attend upon his father when he went abroad; so young and weak of body, taken from a life of close confinement to be put to work that involved severe and constant bodily exertion¹. With weary limbs and throbbing head, the little fellow daily toiled after his father, revolving in his mind such thoughts as suffering and sickness teach to children who have been trained in no school but theirs.

The boy—I am compelled to speak of him as boy, or child, or little fellow, because, though he had now lived in the world for seven years, it does not appear that he had yet been christened—the boy was contemplative². Minds that are born rich, that possess a soil originally fertile, gain very often by the griefs of a tormented childhood; these increase for after-seasons the producing power—they are as the torments of the plough. It is not so with the barren-minded who are born to sorrow and neglect; what little growth there is in them the plough uproots, and there is only a dry life year by year until the end. The Yet how delicately he seeks often to veil the recollection of his father's harshness! As, for example, when he refers to it thus: "*Ex hoc in paternam, ut tunc rebar, servitutem duram transii.*" De Ut. ex Adv. Capiend. Lib. iii. p. 428.

¹ De Propr. Vitâ Liber, p. 13.

² "Cæpi quam primum cogitare an via esset aliqua ut immortales evaderemus." De Libris Propriis. Liber ultimus. Opera curâ Spon. Vol. i. p. 96.

child of Fazio Cardan inherited much innate power: from his father, aptitude for exact learning; from his mother, much vivacity of wit. During these years of early hardship, though he sickened and suffered, he was forced into communion with his own mind by the want of sympathy abroad, and a development was taking place that was not indeed healthy, but that had such charms in it as might have been attractive even to the intellect of Fazio, if the mathematician could have known how to work out the problem that was offered to him in the spirit of his child. He did not work it out; and so, during the summer days, under a southern sky, the boy struggled unnoticed behind his father through the hot streets of Milan.

Intellect at seven years old rarely suggests to any child that fruit should not be eaten until it is ripe; and when the child has a disordered stomach it will fasten upon green things with the relish of a caterpillar. In the midst of his fatigue and sickness, when his body was quite ready for another outbreak of disease, the son, or foot-page, of the learned Fazio Cardan, then commencing his eighth year, at a time when an epidemic, if not pestilence, was raging in the town, ate secretly a great feast of sour grapes¹. They supplied the one thing that was needed to produce an outbreak of the fever that had long been waiting for some slight exciting cause. Dysentery and

¹ De Propr. Vitâ, p. 14.*

fever seized the child, and between them they were killing it¹. The old geometer—he was then sixty-four years old—had learned to feel that there was something to be valued in his boy, therefore both physic and divinity were summoned to his aid. Two physicians, Barnabo della Croce and Angelo Gira¹, and one saint, St. Jerome, were called into request. The old man was accustomed to assert that he enjoyed a favour which had been conferred on Socrates and others in being benefited by the society and advice of a familiar demon². He did not apply, however, to the demon for a prescription in his son's case, but more piously devoted him to the most holy and most happy St. Jerome, whom he elected to be his godfather and his tutelary saint, upon condition that St. Jerome, by his intercession, would procure the boy's return to health¹. Why Fazio chose Jerome for his saint it is not possible to tell; but it happened that he was lodging in the house of one Ermenulfo³, who had Girolamo for his own baptismal name, and I am inclined to think that Ermenulfo—as men in our day recommend to one another their own tea-dealers or tailors—recommended to the lodgers his own patron saint. The boy recovered, and the father,

¹ De Propr. Vitâ, p. 14.

² He said it had attended him for thirty-eight years. De Ut. ex Adv. Cap. p. 428. De Propr. Vit. p. 14.

³ De Propr. Vit. cap. xxiv. p. 92. There may be something to the purpose in the fact, that there was a large religious house dedicated to St. Jerome situated between the Pavian and Vercelline gates.

faithful to his promise, caused him to receive the name of Girolamo, or Jerome¹. This took place in the eighth year of the boy's life. Up to my eighth year, says Cardan, I had often beaten at the gates of death, but those within refused to open to me². He was newly risen from his bed in May of the year 1509. In the same year, on the 14th of the same month, the French gained a victory over the Venetians near the Adda. Jerome Cardan remembered afterwards that he was recovering from that most serious attack when the French celebrated their triumph at Milan for the battle of the Adda, and that he was then permitted to go to the window and look out upon the spectacle.

Thin, pale, and very thoughtful, little Jerome leaned against the open window, and from the gloom of his own chamber looked down on the helmets, swords, and banners of the military pageant, glittering along the street under the light of the May sun. While the noise of military music and the tramping of the horses shook the whole house in which they lived, how little did it come into the thoughts of Fazio Cardan, Aunt Margaret, or Clara, that the glitter and the bustle of the triumph out of

¹ De Propr. Vit. p. 14.

² De Util. ex Adversis Capiend. pp. 427, 428. The summary there given is touching: "*Inde lac prægnantis hausi, per varios nutrices lactatus ac jactatus, hydrope, febribus, aliisque morbis conflictatus sum, donec sub fine octavi anni ex dysenteria ac febre usque ad mortis limina perveni; pulsavi ostium, sed non aperuere qui intro erant.*"

doors were but a parade of folly; that the recovery of health by their weak boy would interest posterity much more than anything that had been done or would be done by the strong army out of doors. For war, that can be noble, was in those days altogether witless, and the pen-work even of the worst dunce among philosophers could scarcely fail to display more sense than the sword-work of the cleverest among the captains.

CHAPTER III.

CHILDHOOD AND YOUTH ARE VANITY.

MARGARET of Austria: daughter of Maximilian; sister of the Archduke Philip; aunt of Charles, then Duke of Luxembourg, afterwards Emperor Charles V; governor, for her nephew, of the Netherlands; widow of Jean of Castille the son of Ferdinand; widow also of Philibert of Savoy: acting on behalf of Maximilian and Ferdinand, had at Cambray concluded a league with the Cardinal d'Amboise, who acted on behalf of the Pope and of the King of France. By this league it was agreed to enlarge the borders of the French king's Milanese territory, by cutting off and appropriating the borders of the territory of the too prosperous Venetian republic. In the year 1509 the head of the Church began the enterprise by issuing monitions which bestowed the coveted lands on the first neighbour who seized them. Louis XII, King of France, entered Italy with thirty thousand men, and was allowed to cross the river Adda by which his Milanese duchy was parted from Venetian ground. On the other

side a battle was soon fought near a village called Agnadol, the Venetians were routed, and without more contest driven into Venice. The campaign, therefore, was soon ended. This was the victory of the Adda celebrated by a triumphal entry into Milan in the eighth year of Jerome Cardan's life.

Louis XII, predecessor of King Francis I. of France, was a monarch of whom it is just to speak respectfully. He sought the welfare of his people. When, on the occasion of this brief Venetian campaign, he found his warfare so soon ended that he should not need the special taxes he had levied, he remitted them, and left the money in the pockets of his subjects. He detested all the arts which darkened counsel by a multitude of words, and expressed frequently so great an aversion to the sight of a lawyer's bag¹, that had the little Jerome, when he saw the king pass by under his window, known of the existence of that strong point in his character, he would have spent some part of his recovered health in lusty cheering. Who had so full a right as little Jerome to cheer kings who hated lawyers' bags?

The great delicacy of health which followed the child's illness procured for him exemption from the task of carry-

¹ "Rien n'offense plus ma vue que la rencontre d'un procureur charge de ses sacs." Words of Louis XII, quoted by Anquetil from Claude Seyssel, Bishop of Marseilles, a subject who was much in the king's company.

ing the bag of Fazio, and from all serious labour for a time¹. During this period of convalescence, when he was living in the street Dei Maini, the weak boy fell from a ladder with a hammer in his hand, and was taken up with a serious wound, in which the bone was injured at the upper part of his forehead, on the left side². The scar left by the wound remained visible throughout the whole of his after-life³. He had recovered from this blow, when one day, as he was sitting on the threshold of his father's door, a tile fell from the roof of a high adjoining house, and wounded him on the top of his head, again on the left side³. When Jerome was in tolerable health, his father fagged him; when sickness gave him liberty to idle, these accidents disturbed his rest. He had no breast at home that he could lay his head upon in perfect peace; he saw passions at work about him, or felt them at work upon him from the first, chafing his fresh heart, and checking the free outward current of his thoughts. His wit was of the quickest, and his nature sensitive; he felt every slight, and soon began to brood over the wrongs he suffered, to preserve in stillness his own thoughts of impatience at injustice, and acquired that unwholesome self-consciousness that is too often forced into the minds of clever children, not only by too much praise, but also by unjust neglect.

¹ De Propr. Vit. p. 14.

² De Util. ex Adv. Capiend. p. 428. De Propr. Vit. pp. 14, 15.

³ De Propr. Vitâ Liber, p. 15.

He who was mocked so often, he would beat through the bands they tied about his heart, he would do some great thing that should command the homage due to his nature, not the less because he was a child. At the beginning of Jerome's tenth year¹, his father moved to another house in the same street, which he occupied for three years, and during those three years Jerome again carried the lawyer's bag, Fazio insisting upon the use of the child's service with great pertinacity, the mother and the aunt consenting¹.

The position of young Jerome was, however, about this time improved; his father had certainly grown kinder¹, warmed very probably towards him by the signs of intellect that he exhibited, and by the readiness with which he picked up information, even about the geometrician's darling studies². There came also two nephews of Fazio, one after the other, who shared Jerome's labour, either serving in his place, or lightening his work, so that sometimes he was not called upon to go abroad at all, or, if he went, he would not have so much to do¹. Then there were other changes of abode¹; first to the Via dei Cusani, and afterwards, until the completion of his sixteenth year, Jerome lived with his father in the house of a relation, Alessandro Cardan.

¹ De Propr. Vitâ Liber, p. 15.

² De Ut. ex Adv. Capiend. Lib. iii. p. 429.

It was at the time when, as Jerome tells us, the first down was coming on his chin¹, that the premature death of a young relative, Nicolo Cardan, gave a fixed object to the tumult of his thoughts. Nicolo died at the age of thirty², and his place knew him no more. The young philosopher began, therefore, to reflect upon the shortness of life, and to inquire by what means he might be able to provide something worthy to be remembered by posterity; it pained him to think that, after a life spent without pleasure in the flesh, he should go down into the grave and be forgotten². When he had recovered from the terror into which he had been thrown by witnessing the young man's death, he occupied himself in the writing of a treatise *On the Earning of Immortality*².

The sense of power, without which no genius can bear fruit, was rooted firmly in Cardan. The slights and sorrows that had made the outer world in childhood and in youth seem vanity, had driven him to contemplation of that inner world from which there was no pleasant voice to call his thoughts. Self-contemplation, constantly provoked and never checked, acquired a feverish intensity. After the death of his friend Nicolo, when Jerome, with warm passions, found himself at home but half a son, and

¹ "Cum adhuc ephebus essem." *De Sapientia Libri V. &c. &c.* (ed. Norimb. 1543) p. 420.

² *De Libris Propriis* (ed. Lugd. 1557), p. 10.

out of doors regarded as a questionable comrade¹, a young man with no lawful parents and no prospects, hearing his mother reproached coarsely for his birth², holding the position of a servant, with no visible means of escape from it, we feel that there is something touching in the pride of loneliness on which his heart depended for its solace: "As much as it was permitted me," he tells us afterwards, "I lived to myself; and, in some hope of future things, despised the present³."

Jerome had been instructed by his father⁴ in reading, writing, and arithmetic, in geometry, in some astrology, and had learnt also in the same company to chatter Latin; but he was nineteen years old⁵ before Fazio consented to his earnest wish that he might study thoroughly that language—then the only tongue used by the learned—and endeavour to make use of his abilities. The taste for mathematics communicated to him by his father, Cardan always retained. When in his fresh youth he became eager to obtain a name that should not die, and must

¹ But, he says: "*Ubi adeptus literas Latinas, statim etiam in urbe nostrâ cognitus fui.*" *De Vitâ Propriâ*, cap. xxxii. p. 138.

² "*Apud patrem longam servitutem sustinui, et pro spurio ab illo jactatus, etiam indecora matri simul audiebam.*" *Dial. de Morte. Opera*, Tom. i. p. 676.

³ "*Itaque quam licuit vixi mihi; et in aliquâ spe futurorum præsentia sprevi.*" *De Propr. Vit.* cap. ix. p. 42.

⁴ *De Util. ex Adv. Capiend.* p. 428. *De Propr. Vit.* cap. xxxiv. p. 155.

⁵ *De Libris Propriis* (ed. Lugd. 1557), p. 9.

needs sit down at once to write a treatise, and so make the best beginning that he could of the career to which his aspirations tended, there was no subject that lay nearer to his mind than the geometry he gathered from his father's teachings and his father's books. The boy, therefore, worked diligently at a little book in his own language, since he could write no Latin, wherein he taught how and why, the latitude and longitude of two places or stars being known, their true distance from each other may be calculated¹. This little treatise was divided into chapters, and was chiefly founded on a book of Geber's¹. Having achieved this his first work, Jerome was rather proud to lend it to a friend, Agostino Lavizario, of Como. To the disappointment of posterity, and the chagrin of the author, Lavizario died of plague, and Jerome's manuscript could never be recovered².

But the zeal of the young aspirant for immortal honours had not been content with labour on a single work³; another book had been commenced about the same time, more original in its design, and more ambitious, more peculiarly characteristic. As Cardan grew, his restlessness increased. He felt aggrieved when, at the age of eighteen, full of strong powers and strong passions, he still found himself compelled into a half-menial position,

¹ De Libris Propriis (ed. Lugd. 1557), p. 9.

² De Libris Propriis (ed. 1557), pp. 9, 10. De L. P. Liber ult. Opera, vol. i. p. 96.

³ De Sapientiâ Libri V. &c. &c. (ed. Norimb. 1543) p. 431.

and denied the education for which he was thirsting. His want of proper standing had become more obvious, and the reason of it, with a galling frequency, was on the lips of his companions. His health was bad, his home was uncongenial, out of doors he was in a wrong position. He had become proud, and so sensitive, that his spirit suffered pain from any but the gentlest touch. Worldly advancement seemed impossible, restlessness became recklessness, and the neglected youth turned all the energy that was not spent in nursing his ambition upon games of chance. He brought his acquired taste for mathematics to the gaming-table, and calculated nicely probabilities in cards and dice¹. When, afterwards, a sure object in life presented itself, quitting the company of gamblers, he pursued it steadily; but in the hopeless, miserable years of energy that saw no outlet, and of reckless discontent, there was no game played in his day with dice at which Jerome Cardan did not become proficient. Meanwhile, the philosophic bias was not weaker than the passions of those miserable years. The young gambler's experiences were all treasured for a philosophic use, while scientific calculations were submitted to the test of practice; for this other work, begun in early youth, and finished at the age of twenty-three, was nothing less than an original and elaborate treatise on the science that belongs to

¹ De Propriâ Vitâ, p. 16. The authority remains the same for all succeeding facts, until its change is indicated by another reference.

games of chance. The idea was a shrewd one, and the execution of it curiously brought into play all the characteristic features of its author's life. It displayed much of the knowledge he had acquired from the old geometrician Fazio, the philosophic powers that had grown and strengthened in the midst of all misfortune and neglect, and the love of dice that represented the impatient and ill-regulated spirit that so much want of sympathy had by this time begotten.

We who have seen the growth of this one child from the knees of its hired mothers, and the hand of its hard Aunt Margaret, up to a youth of galling servitude, refuse to be harsh judges now. If we could trace back the stories of the men who sin against us or before us in the world, perhaps we should refuse to be harsh judges ever. There is no truth in scorn, and there is no sadder aspect in the life of Jerome Cardan than the feeling which impelled him to say, "I have lived to myself, and in some hope of future things I have despised the present."

A rare example of the contempt of things present was offered during Jerome's youth by Fazio, his father. Fazio, who was, it should be remembered, seventy-four years old when his son's age was eighteen, had two nephews, sister's sons, little younger than himself; and of these, one was a Franciscan friar, and the other a tax-gatherer; one a Pharisee, the other a publican. The friar, seventy years

old, was named Evangelista; the other nephew, Ottone Cantone, the tax-gatherer, was very rich, and when on his death-bed offered to bequeath his wealth to the young Jerome. It was the one worldly gift that fortune offered to him in his early life, a bequest by which he would have been enabled to obtain for himself education, and to carry out his most ambitious schemes of study. Fazio, however, acting on his son's behalf, refused the legacy, declaring that the money was ill-gotten. The despised publican died, therefore, intestate, and his property passed into the hands of his surviving brother, the friar, who, being forbidden to acquire wealth for himself, of course devoted it to pious uses.

The geometer's contempt of wealth did not include a contempt of the homage he might earn to himself from younger relations, as a man who would leave one day a will behind him¹. Jerome's health being delicate, it pleased his father to excite the reverence of other young men in the family, by telling them that in the event of his son's death this or that one of them would be his heir. It was a weak way of boasting, and hazardous withal; for in those days, although it was not much more likely than it is now that young men would allow generous blood to take a jaundice from exposure to such influencing, yet there were thousands of calculating fathers

¹ De Util. ex Adv. Capiend. p. 429.

not indisposed to carve out a fortune for themselves or for their children with the knife of the assassin, or to find quiet means of hastening the decease of any sickly youth by whom their way was cumbered. This manner of talking, therefore, on the part of the old man, not only vexed Jerome, but also seriously alarmed his mother, and was the occasion of much violent altercation between Fazio and Clara. They even agreed to separate. In one of these quarrels the passionate woman fell down in a fit, striking her head violently against a paving-stone, and lay for three hours insensible, and foaming at the mouth¹. The son diverted the attention of his parents from the dispute, of which he was the centre, by simulating a religious zeal, betaking himself to the Franciscans², and making suddenly a bold push to secure for himself proper instruction. His mother, however, would not suffer that he should hide himself from her under the monk's cowl³.

Having denied to him that easy opportunity of getting forward in the world which the legacy of Ottone Cantone would have afforded, it would have been cruel indeed had Fazio continued to withhold from his son those elements of education that were necessary to his labour for his own subsistence. Jerome had learnt no trade or profession,

¹ De Util. ex Adv. Capiend. p. 429.

² Ibid. De Consolatione, p. 74.

³ "Metuentis matris orbitatem precibus exoratus pater," De Consolatione, p. 74.

and both from his nature, and from the imperfect training he had hitherto received, it was evident that he could earn his living only as a scholar. The old man also had not failed to recognise the good abilities his boy possessed, while it was certain that his quick wit could be turned to no account, that he might as well not think at all among philosophers, while he was unable to write his thoughts in Latin. At length, therefore, when he was nineteen¹ years old, he was, for the first time, released from bondage in his father's house, and sent to study at a university.

¹ De Consol. p. 74. De Propr. Vit. p. 16.

CHAPTER IV.

ILLS OF THE FLESH—THE STIPEND OF THE HUNDRED SCUDI.

THE spirit of the young Cardan, housed within its temple of the flesh, suffered, in contact with the world about it, such discouragements. The story of his outer life up to his nineteenth year is told in the preceding chapters. We must now put a finger on his pulse. The day may come when somebody shall teach us how to estimate the sum of human kindness that proceeds from good digestion and a pure state of the blood—the disputes and jealousies that owe their rise entirely to the livers of a number of the disputants—or how much fretfulness, how many outbursts of impatience, how much quick restlessness of action, is produced by the condition of the nervous matter. Such calculations, though we cannot make them in the gross, we make, or ought to make, instinctively when we become intimate with individuals. The physical life of a man cannot be dissociated fairly from his intellectual and moral life, when we attempt to judge him by the story of his actions. In the

case of Jerome Cardan, it is more than commonly essential that we know a little of the body that he carried to his work, for its unsoundness influenced his conduct and caused many a wise man to shrug his shoulders, both among contemporaries and long afterwards, and even to this day, over the question, "Had he not madness in his composition¹?"

As there are few, even of the rosiest among us, who have bodies absolutely free from all trace of disease or malformation, perfect health of body being a most rare condition, so it is with perfect health of mind. Every excess of one class of ideas over the just proportion involves loss of balance. Before reasoning can master the

¹ "Verum *extremæ amentia fuit, imo impiæ audaciæ,*" reported Thuanus, in the History of his own time, Lib. lxii. Tom. iii. p. 462, ed. Lond. 1733. Gabriel Naudé, a famous bookworm, wrote an elaborate but shallow criticism on Cardan, which he prefixed to the book *de Vitâ Propriâ*, first edited by him in 1642. As an analyst of character Naudæus does not shine; but this criticism, based on a minute knowledge of his whole works, being bound up with the only one of Cardan's books usually read, has been taken for just by, I think, every succeeding writer. He says, speaking of . . . "*gravissimorum virorum judicia, qui Cardanum miras de seipso fabulas concitasse, et insanienti proximum vixisse. Et hercle non video quid aliud existimari possit de homine qui*" . . . *qui . . . qui . . . &c.* The quotation down to "*qui denique*" would be a page too long. Bayle, gathering his information about Cardan from other writers, and without having read more than a single book, which forms about a hundredth part of Cardan's works, delivers judgment thus: "We must not say of him that his great Wit had a mixture of Madness, but, on the contrary, that his Madness had a mixture of great Wit. His Wit was only an appendix, an accessory to his Madness." For my own part, I decline to affirm of any man that he is mad or not mad. Strange things are said and done all over the world daily.

unknown, or wit can dazzle us—before there can exist a Howard or a Milton—a mind must have swerved out of that horizontal line on which all faculties stand written at an equal altitude. That Cardan's mind was not well balanced we have already seen while noting its relations in the days of youth with the surrounding world. Much of the eccentricity displayed in it was caused, undoubtedly, by the condition of the frame in which it had been set. That part of our history—his physical life—up to the year in which he joined a university, we therefore proceed now to consider.

In infancy, Cardan was fat and red; in boyhood, lean, with a long, white face, and reddish hair. He grew fast, so that he had attained at the age of sixteen his full stature. Of the plague that caressed him at the breast of his first nurse mention has been already made. His health was at all times infirm. He was born with a slight enterocoele, inherited from Fazio, his father. Throughout life he was vexed by the occasional outbreak of cutaneous eruptions and by nervous itchings¹. Between his fourth and his seventh year² the excitement of his nervous system caused a condition perhaps not altogether rare in children; phantoms haunted him. On account of his

¹ De Vitâ Propr. cap. vi. and li. for the preceding details.

² De Vitâ Propr. cap. xxxvii. p. 160. Sprengel attributes to his early illnesses the vividness of imagination by which Cardan was always characterised.

weak health, and specially in consideration of the fact that during those years, and for some time afterwards, his legs from the knees downwards never became warm in bed until the morning¹, he was not required to rise; indeed, he was required not to rise until the end of the second hour after sunrise². Fazio himself, it should be observed, was not himself then out of bed³. During the last hour or two of morning rest, lying awake, the boy commonly saw figures, that were colourless, and seemed to be built up of rings of mail, rising out of the right corner of the bed⁴. The figures, following each other in a long procession, were of many kinds—houses, castles, animals, knights on horseback, plants, trees, musical instruments, trumpeters in the attitude of blowing, groves, woods, flowers, and wild shapes that represented nothing he had ever seen before—these figures rising out of the right-hand corner, and describing an arch, descended into the left-hand corner, and were lost. Jerome had pleasure in this spectacle, and made a secret of it. On one occasion, when his eyes were fixed intently upon the procession, his Aunt Margaret asked whether he saw anything; but he believed, he tells us, that if he revealed the mys-

¹ De Vitâ Propr. cap. xxxvii. p. 29 and pp. 161, 162.

² Ibid. p. 11 and p. 160.

³ "Somno matutino indulgere permisit, nam et ipse ad tertiam diei horam decumbebat." De Ut. ex Adv. Cap. p. 428.

⁴ De Vitâ Propr. p. 160.

tery, whatever caused the spectacle would be offended, and that he should see the show no more¹. Therefore he did not answer her. Between his seventh and twelfth year² the child, who slept between his mother and Aunt Margaret, disturbed them almost nightly with his crying, caused by severe palpitation of the heart, which ceased when he advanced in years². The coldness of his extremities sometimes gave place to a profuse sweat. The nervous irritation endured by the delicate boy, who was rudely exposed all day long to the harsh exactions and unruly tempers of his old father, the lawyer, and the women who had charge of him, marred his unwholesome sleep with vivid dreams². As often as a hundred times there came before him in his dreaming, night after night, at intervals, a cock with red wings, at whose appearance

¹ "Quamvis adeo puer, mecum cogitabam, si fatebor indignabitur quicquid causam præbet hujus pompæ, subtrahetque hoc festum." De Vitâ Propriâ, cap. xxxvii. p. 161. This account fits accurately to my own experience. During the same period of childhood I rarely fell asleep till I had received the visit of a crowd of visionary shapes that were not by any means agreeable. I had also, during that period, holiday phantoms, in the beauty and the mystery of which I took delight, and concerning which I had in the strongest degree the same childish belief that is mentioned in the text, that "si fatebor indignabitur quicquid causam præbet hujus pompæ, subtrahetque hoc festum." I add this note because there are some autobiographical statements in the writings of Cardan—touching upon what used to be considered supernatural matters—that are liable to question by the sceptical, or misinterpretation by the credulous. It would be unjust not to employ the best means that I have of proving in this place the good faith of Cardan's statements.

² De Vitâ Propr. p. 29.

the child trembled with the fear that it would speak, until it did speak, in a human voice, threatening words that took no hold upon his memory¹.

There were none by to understand the beatings of the young heart and the ponderings of the excited mind. Sometimes the child was labouring in the diseased heroic vein; at seven years old aweary of the world and cogitating suicide. Cardan, when he confesses this in after-life, adds a suspicion that the same has occurred to other men, although they do not like to tell it in their books². There were none by to understand the vague emotions that were, even in youth, to grow into the form of hunger for undying fame; the busy brain, that was perpetually cogitating many and large things, revolving also things that were impossible³.

The aspirations of the fevered mind were mingled

¹ De Vitâ Prop. p. 162.

² "Laboravi interdum amore Heroico, ut me ipsum trucidare cogitarem; verum talia etiam aliis accidere suspicor; licet hi in libros non referant." De Vitâ Propriâ, p. 31. The preceding sentences make it probable that Cardan applies this statement to his whole life; the sentence before which it is placed favours, however, the belief that he is referring to his childhood only. I adopt the latter view, because I know that in the early years of childhood this feeling is connected closely with the physical condition already described. There is nothing in it but a wild love for the mystery of death. I can call to mind no instance of suicide committed by a child.

³ "Cerebri calidi, addictus cogitationi perpetuo: multa ac maxima, et etiam quæ esse non possunt revolvens." De Vitâ Propriâ, cap. xiii. p. 58.

always with some fear of early death. His mother never thought he would live long¹. In youth, to all the other ailments Jerome suffered, there was added a dull, red swelling on the left breast, which occasioned for some time a dread of cancer². In the year before his departure for the university, when he was eighteen years old, he suffered also a dangerous attack of illness. He had been rambling through an August day among the suburbs and gardens of Milan, and when he came home falsely accounted for his absence by saying that he had dined with a friend of his father's, Agostino Lanizario. It is the same Lanizario who played the part of friendly critic upon Jerome's early writings. After this walk the youth was seized with a violent attack of illness³. For three days he was in a fever, having only water for his food, and medicine compounded by his father, who was not only lawyer but physician also, which medicine he was to take four times a day. An anthrax formed and broke over the first false rib on the left side⁴. He thought in his delirium that he was on the bed of Asclepiades, rising and falling constantly between the floor and ceiling. He became possessed of the belief that he should die. His malady was closed by a violent sweat that resulted in the youth's recovery, but his health, as I before said, re-

¹ De Vitâ Propr. p. 29.

² Ibid. p. 31.

³ Ibid. p. 28.

⁴ De Util. ex Adversis Cap. p. 431.

mained always infirm; it was best when he was troubled with a cough¹.

Jerome Cardan, whose stature was completed at the age of sixteen, was, at the age of nineteen, when he went to Pavia, of the middle height and somewhat narrow-chested. He had a fair complexion, with a slight tinge of red on his white, small and oblong face, yellow hair, with a strong growth of it in beard under the chin, small, intent eyes, a projecting under lip, large upper front teeth, and a harsh voice, which, although loud, was not distinct at any distance. The hind part of his head was narrow². Cardan tells us that when he became famous, and painters came from a distance to take his picture, his features proved to be so commonplace, that it was impossible to express them in a way that would enable any one to know him by his portrait. That is a very modest method of putting the incompetence of artists who omit the animating spirit when they paint the form, but Jerome was only too completely free from any pride either in his own form or in its coverings. In his mind he had pride, which he took no trouble to conceal. His character was fixed in a contempt of money, a disregard not only of surrounding trifles, but even of the more important furnishings of

¹ "Tum maxime sanum me existimem, cum tussi raucedineque laboro." De Vit. Propr. p. 26.

² Ibid. pp. 24, 25, for this and the next fact.

life, and his whole energy was bent upon the working out for himself with his mind of glory after death¹. Boy as he was, he was at work upon his treatise on the Earning of Immortality; upon his treatise on the True Distances of Objects, based upon an old volume of Geber's, upon Triangles, that he had found among his father's books; upon his treatise on Games of Skill and Chance; and upon other youthful undertakings². From the first he was unable to confine his mind to labour on a single topic. He did not sit down to work out his immortality of fame by writing a great book; he began at once with three or four books. He was never throughout life checked in the commencement of a new literary labour, by the reflection that he might have four or five unfinished works already in hand³. Book-writing was pleasure, and he could not easily deny himself any addition to a pleasure that he loved.

Though miserably trained into impatience, there was a strain of youthful joyousness in Cardan's mind when he arrived at manhood. The most prevailing of his sensual pleasures was a love of music⁴. He was not

¹ "Contemptor pecuniæ, gloriæ post obitum cultor, mediocria etiam nedum parva omnia spernere solitus."

² *De Libris Propriis* (ed. 1557), p. 10.

³ "Multa et varia scripsi, neque enim mens tandiu intenta uni negotio esse potest." *De Libris Propriis* (ed. 1557), p. 12.

⁴ "Lætus, voluptatibus deditus, Musicæ præcipue." *De Vitâ Propr.* cap. li.

physically bold, but he had from the beginning practised himself in sword exercise, then an art necessary to all men who desired long life, and he had exercised his body well in running and leaping. He could not ride decently, nor swim, and was afraid of fire-arms. Absolutely a coward he was not, for in his restlessness it was one of his favourite amusements to face at night the dangers of the street, wandering about, contrary to law, armed, having his face concealed by a black woollen veil¹.

Firm in the midst of all his restlessness, determined resolutely to mount upwards, not in worldly circumstance but in the ranks through which only intellect can rise, his spirit ever burning with an inextinguishable desire for an immortal name², Jerome Cardan left Milan to commence his university career. Agostino Lanizario had faith in the young author, and besought his aged father to consult the future prospects of the youth. Clara Micheria added her prayers to the same effect, stimulated by her son's declared intention, for the love of study, to become a monk if he might become a student in no

¹ De Vitâ Propr. cap. vii. p. 32, for the preceding details.

² "Hoc unum sat scio, ab ineunte ætate me inextinguibili nominis immortalis cupiditate flagrasse." De Libris Propriis.

"Cupiditas mea gloriæ, inter tot et adversa et impedimenta, stolidi non tantum stulta. Non tamen unquam concupivi gloriam aut honores, imo sprevi : cuperem notum esse quod sim, non opto ut sciatur, qualis sim." De Vitâ Propriâ, cap. ix. p. 42.

other way¹. Jerome, ill-trained as he had been, with all his oddities and faults, was a good son. The life of Fazio was now declining; Clara was much younger than the old geometrician, and must turn naturally after the old man's death to her son Jerome for protection. Let him, therefore, before it was too late, be enabled to earn bread. Fazio, though he had acquired some property, was far from being rich. He had lent money too carelessly, and been but too indifferent a steward of his own resources. The main prop of his income as a juriconsult was a stipend of a hundred scudi, from a lectureship in Milan, which could one day be obtained also by Jerome, if he were qualified to take his father's place². Clara had, therefore, good reason for backing with her prayers Jerome's demand for education. Jerome declared obstinately that if he were not sent to Pavia for instruction, he would run away from any situation into which he might be put; and thus the old man was at length entreated and compelled to yield³.

¹ "Dii boni! florem hunc universum ætatis, et sine voluptate, et sine studiis transegi. Cum vero neque patrem cogere possem, nec fraudare honestum ducerem, nec præcibus impetrare valerem: religioni tandem, amore studiorum, tradere me volui. Inde metuentis matris orbitatem præcibus exoratus pater, in Gymnasium dimisit." De Consolatione, Lib. iii. p. 75.

² De Vitâ Propr. cap. x. p. 48.

³ "Atque ita precibus matris et amici prædicti, minisque meis, ut qui omnino abire quoquo destinaveram, discessum in Academiam sequenti anno impetravi." De Libris Propriis.

Jerome Cardan, therefore, being as well or as ill-fitted for the career he sought as may be supposed of a youth minded as he was, and troubled as he was with fleshly ailments, set out at the age of nineteen for Pavia, provided in an ungrudging way by his father with respectable resources¹. So far as studies were concerned, the exact curriculum of his preparatory education may be briefly told. In addition to reading and writing, Fazio had taught him rudiments of arithmetic when he was a little boy, and had instructed him, when he was nine years old, in some of the world's mysteries, magical lore very probably, whence obtained Jerome never discovered. Soon afterwards the geometrician taught his son some principles of Arabian astrology, a kind of study that must have done much to confirm the little fellow's dreaminess of nature, and then finding that his recollection of dry facts was bad, endeavoured to instil into him a system of artificial memory, in which endeavours he did not succeed². After Jerome's twelfth year, he had been taught to say by heart the first six books of Euclid, not to understand them, and he had been aided carelessly with a few books and scanty verbal information and advice in the study of geometry and dialectics³. At the cost of his mother, who had a

¹ "Honesto cum viatico." De Ut. ex Adv. Cap. p. 429.

² De Vitâ Propr. cap. xxxiv. p. 155. De Ut. ex Adv. Cap. p. 428.

³ "Pater jam ante concesserat ut Geometriæ et Dialecticæ opera darem, in quo quanquam præter paucas admonitiones, librosque, ac licentiam, nullum alium auxilium præbuerit." De Consol. p. 75.

woman's appreciation of such matters, Jerome had also received instruction in music, which, as a social amusement, consisted in those days chiefly of part singing and choruses. This Clara had furnished to her son without his father's knowledge¹. Fazio himself, who had no lack of power for facetious conversation, and was great among his friends as a teller of anecdotes, fables, and marvels of all kinds, being particularly full of stories about demons², and claiming an especial demon of his own, aided the constant growth of superstitious feeling in the apt mind of his pupil. Other things Jerome had learnt for his own pleasure. With his father's help he had become so well versed in dialectics, that before he went to Pavia he earned some pocket-money for himself by giving private lessons in that study³. Of Latin he knew no more than he had acquired in conversation with his father ; but to write Latin, as I have said before, was the great object of his young desire.

At Pavia, Cardan was placed under the care of Giovanni Ambrosio Targio, in whose house he resided without any companion. At the close of the academic year he returned to Milan. He had made good use of time, for in the succeeding year after his return to Pavia, where he

¹ De Ut. ex Adv. Cap. p. 429.

² "Conversatio sua haud aspernanda, facetus, jucundus, miraculorum et fabularum recitator, multa de dæmonibus recitabat, quæ quam vera essent nescio, certe ea historia et admirabilis et pulchre conficta, mirum in modum me oblectabat." De Ut. ex Adv. Cap. p. 429.

³ Ibid.

again lodged with Targio, he disputed publicly with very great success, and was a teacher in the Gymnasium of the first books of Euclid. He even undertook for a few days to discourse upon dialectics in the place of the appointed teacher, Brother Romolo Serveta; and afterwards he took for a short time a class of elementary philosophy on behalf of a physician named Pandolfo¹. He was evidently working hard, learning to read and write Latin, not by the ordinary way of grammar rules, but by practice and by native tact, with books and dictionaries².

The years of study now commenced were years of happiness to the young student. He worked hard, partly to make up for lost time, partly in fear that he might be recalled by his father if ill-tidings of him were sent home³. At Pavia he was master of himself, and between the sessions, when he went home to Milan, he assumed the right of managing his own affairs. His mode of studying was suited to his tastes, though perhaps not exactly orthodox. The common course of a day's study was as follows⁴:—After a morning's work he walked in the shade outside the town-walls; then he dined; then he gave up his time to music. The young philosopher then took his fishing lines and went a-fishing under shelter of the groves and woods not far beyond

¹ De Vitâ Propr. p. 16, for the preceding details.

² Ibid. cap. xxxiv.

³ De Consol. p. 75.

⁴ De Vit. Propr. cap. xl.

the gates of Pavia. A philosopher who means to be immortal must needs think as well as read and write. Cardan could either think or read while he was fishing. He took out with him also into the woods writing materials, and so studied and worked under the thick green leaves, among the wild flowers, throughout the summer afternoon, dreaming ambitious dreams, and fairly striving to fulfil his best desires. At sunset he returned into the town, where his behaviour was not always orderly. Dice and the draught-board had their charms for him; a restless night spent wandering about the streets after a day of music was, in his view, a simple kind of relaxation. In this way Cardan worked hard, and made rapid progress. Having embraced medicine as his profession, he had begun a treatise on the Differings of Doctors¹. In the year following his second academical course, remaining at home in Milan because the presence of war caused the schools of Pavia to be closed², he wrote fifty sheets of mathematical Commentaries. These sheets, I may here add, he lent to Ottaviano Scoto: Ottaviano lost them.

Jerome Cardan had embraced medicine as his profession. What was to become, then, of the stipend of the hundred scudi? He had thrown it aside as dust in the balance of his thoughts. The choice of a profession was not

¹ De Sapientiâ, &c. &c. p. 420.

² "Tertio anno Mediol: mansi bello impeditus, quo ne Academia frequentaretur prohibitum est." De Sapientiâ, &c. p. 421.

to him a money question. Regarding it, however, even in that light, when his father and Clara pleaded to him the importance of this lectureship, and the honours and emoluments that were to be attained by all good jurisconsults, the youth felt that his father's standing in the world was but a bad endorsement of their plea. Jurisprudence, he remarked, had done but little for his father Fazio¹, though he had been lauded as the knower of all things in that book of his on Peckham's *Perspectiva*. To that book, and the laudation in it, Jerome refers, noting how very false the praise was, since his father's knowledge was confined to few ideas, and none of those his own. Law studies had contracted his mind—not enlarged it. Eager, therefore, for the best kind of mental cultivation as the basis of his future immortality, the young philosopher, after he went to Pavia, was not long in determining that he would never follow in his father's steps.

Medicine had recommended itself to Cardan as the pursuit most likely to beget a philosophic mind. As a physician, he could not only keep over his own feeble health a reasonable guardianship—and he desired long life—but he should also be more fairly on the path to an immortal fame. The studies that belong to medicine, he reasoned², stand upon surer ground than studies that

¹ "Parum illum etiam absque impedimento profecisse viderem." De Vit. Propr. cap. x. p. 49.

² Nothing could be saner than this reasoning:—"In eo instituto a primâ ætate mansi, ut vitæ consulerem: studia autem medicinæ magis

belong to law. Law treats of local custom, medicine of truths common to the whole world, and to all ages. Medicine is the nobler as well as the safer ground, he said, on which to build a lasting fame, since its inquiries are concerned only with pure reason, with the eternal law of nature, not with the opinions of men. Swayed by such arguments the bold student determined to give up every design of following upon his father's track, and abandoned expectation of his stipend of a hundred scudi.

Fazio, failing now in health, withdrew his opposition, and Jerome, having missed one academic course while the armies concerned in the quarrel between Charles V. and Francis I. were creating more than common tumult in the country, went in the next year, he being twenty-three years old, not again to Pavia, but to Padua.

Absence had softened the feelings of old Fazio towards his son¹. Very soon after his first departure, reconciliation had been effected between Fazio and Clara; and although the old man, during the four last years of his life, maintained a morose countenance², his last days proved

huic proposito conducebant quam legum: et ut propiora fini, et ut orbi communia toti, et omnibus sæculis: tamen ut candidiora, ac quæ rationi (æternæ naturæ legi) non hominum opinionibus inniterentur: ideo hæc ipsa amplexatus sum, non jurisprudentia." De Vit. Propr. p. 47.

¹ "Desiderium augente absentia mortuus est pater." De Consolatione, p. 75.

² "Supervixit quatuor ferme annis, mæstus semper vixit ut declaraverit quantum me amaret." De Ut. ex Adv. Cap. p. 430.

that he regarded his boy with a real affection. It was in the beginning of the year 1524 that Jerome first went to the University of Padua, and early in August of the same year he returned with a fellow-townsmen, Gianangelo Corio, to Milan¹, where the old jurisconsult was languishing in mortal illness. Jerome, since he had become a Latin scholar, had acquired social respect among his fellow-townsmen², and his father was then so much interested in the progress of his studies that he would not suffer him to wait upon the sick bed. Plague was in the town, and the youth's life was precious³. Jerome, he said, was on the point of taking the degree of bachelor in arts⁴, and Fazio, though near death, commanded him to go back; declaring, indeed, that he should feel the happier if he did not detain him from his studies⁵. The youth, therefore, went back to Padua. He must have gone back to vacation work, for he had remained a month at Padua after the close of the academic session on the 30th of June, and the long vacation did not end until All Saints'-

¹ De Vit. Propr. p. 16.

² Ibid. p. 138.

³ De Consol. p. 75.

⁴ De Vit. Propr. p. 17. Such a degree was not much favoured in Italy. It was sought in Cardan's time chiefly by those who could not afford much expense or trouble, and in the next century was rarely sought at all in Padua, after the establishment of "the Venetian College," by which the doctorate was made readily accessible to all poor scholars. *Gymnasium Patavinum* J. P. Tomasini, p. 200 and p. 194.

⁵ De Vit. Propr. p. 17.

day, the 1st of November¹, when the learned Paduans opened the academic year with great solemnity and pomp.

Soon after his return, Jerome received news of his father's death. Fazio died of old age, after eight days of abstinence from food, upon a Sabbath-day, the 28th of August². His son, who was warm-hearted, had loved him; but there is more of literary vanity than filial love in the epitaph, of course a Latin one, with which he marked his grave. Thus the sense of the inscription ran:

TO FAZIO CARDAN,

JURISCONSULT.

DEATH IT WAS THAT I LIVED, LIFE IT WAS DEATH THAT GAVE,

THERE REMAINS THE MIND ETERNAL, CERTAIN GLORY, REST³.

He died in the year 1524, Oct. 28, in the eightieth year of his age.

JEROME CARDAN, PHYSICIAN, TO HIS PARENT
AND POSTERITY.

¹ See J. P. Tomasini *Commentar. de Gymn. Patavin. Lib. i. pp. 150—4*, for the complete University Calendar, formerly regulating work-days and holidays at Padua.

² De Vit. Propr. p. 17. *Dialogus Tetim. Opera, Tom. i. p. 672.*
“*Tetim. At Pater, quomodo obiit? Ram. Honeste, et ex senio.*”

³ These two motto lines are in the original a bad hexameter and a pentameter; the whole inscription being:

“Facio Cardano,

I. C.

Mors fuit id, quod vixi, vitam mors dedit ipsa,

Mens æterna manet, gloria tuta, quies.

Obiit anno M.D.XXIV. IV. Kal. Sept. Anno Ætatis lxxx.

Hyeronymus Cardanus, Medicus, Parenti

Posterisque.”

The inscription is given by Tomasini (*Elog. part i. Patav. 1630*) from the church of St. Mark, in Milan. Jerome himself was eventually buried under it beside his father, as is testified by Tomasini and Thuanus.

Until there shall be one trumpet sounded over all the graves, we shall most likely continue to blow trumpets of our own in this way. A clever man must be more pious than clever who omits the temptation, when he has the power, to display his cleverness upon a tomb. By Cardan, who was more clever than pious, no such omission would be made. How should his piety prevail? The holiness of home, all sacredness of motive and true worthiness of action, had been unknown to the little Jerome when he was a child. He had grown up contemned and neglected, seeing much of evil passion, trained as a child in astrology, and strengthened in every tendency to superstition. The religion of his time was ceremonial and full of superstitious practices. Jerome was superstitious. He was careful to perform religious rites; he prayed to God and to the Virgin Mary, but more particularly to St. Martin, whom he was taught by a dream to regard as a protector under whom he would enjoy a somewhat quieter and longer life¹ than he could have obtained under any other saint. There can be no doubt that this was a direct slight offered to St. Jerome. Cardan was not behind his age, but he was not before it, when, as he tells us, he was accustomed from childhood to look up to heaven with this prayer: "Lord God, of Thine infinite goodness, give me long life and wisdom, and health both of mind and body²."

¹ De Vitâ Propr. cap. xxii. p. 87.

² Ibid. p. 86.

His body was ailing, his mind wanted health; he feared lest, by a premature close to his life, he might be prevented from leaving to posterity such proofs of wisdom as might win for him undying praise. He sought praise as the end of his existence, and exercise of intellect as the most worthy means to such an end. Ambition to produce the utmost good, to develop every talent and apply it carefully to that work in which it would do all that it could be made to do in aid of the real progress of humanity, glorified the life of the obscure French potter, Bernard Palissy¹, really the best of Cardan's philosophical contemporaries. Cardan, who won to himself in his own lifetime world-wide fame, was conscious of no higher motive to exertion than anxiety to be remembered as a great philosopher. But that was no mean care.

Because the superstition of Cardan did not at all times take an orthodox complexion, he has been ranked on more than one occasion among atheists. Thus, for example, he was set down by Theophilus Raynaud, in his treatise on good and bad books², as the first atheist of the

¹ "Je n'ai trouvé rien meilleur que de suivre le conseil de Dieu . . . Il a commandé à ses héritiers qu'ils eussent à manger le pain au labeur de leur corps et qu'ils eussent à multiplier les talens qu'il leur avoit laissez par son Testament. Quoi considéré je n'ay voulu cacher en terre les talens qu'il luy a pleu me distribuer," &c. Palissy to the Marshal Montmorenci.

² "Homo nullius religionis ac fidei, et inter clancularios atheos secundi ordinis ævo suo facile princeps." Father Reynaud *De bonis ac malis Libris*, quoted by Bayle in his Dictionary.

second order. He records, however, emphatically among the experiences of his life the acquisition, even through trouble, of a firm trust in the wisdom of the divine disposition of events. He had observed, he says, the efficacy of prayer, and recognised the importance of invoking aid from God out of the Scriptures, and of seeking, he adds—I quote his exact words—“that He would teach me to do His will, because He is my God¹.” As a religious sentiment, at least, this thought lay at the bottom even of those blind superstitions or clear-sighted comments which the orthodox disdained and set aside as pagan.

¹ De Vit. Propr. cap. xxiii. p. 90.

CHAPTER V.

JEROME CARDAN, GRADUATE IN MEDICINE—HIS LIFE AT SACCO, AND
THE STRANGE ADVENTURE OF HIS MARRIAGE.

FAZIO CARDAN left a house and some provision for his son, although it seems to have been very small, and liable to much dispute¹. He had been too ready to allow to other men the use of his possessions. Part of his little store, placed in the hands of insolvent people, had been lost; part, supplied to princes and great men, was to be re-demanded only at great risk, and hardly to be recovered after endless labour. When recovered, it was always repaid without interest². Litigation, however, was then common; and we are carried back fairly into the spirit of the time when we read that after his father's death Jerome had first a lawsuit with Alessandro Castillione for some woods, afterwards with members of his father's family, and then with the Counts Barbiani. Jerome eventually gained his point against Castillione, who had one of his

¹ "Patrimonium quod minimum erat." De Consol. p. 75. De Vitâ Propr. cap. xxviii.

² De Ut. ex Adv. Cap. p. 428.

own relations for a judge, and compelled him, after a long struggle, to pay all the money about which a question had arisen. The dispute with the Barbiani was continued over many years¹.

To Clara Micheria there remained also, after the death of Fazio, so much provision for her maintenance as would enable her to buy a house². She could also in some way earn money, for it was by her industry and solicitude—incredible solicitude her son entitles it—that Jerome, when left by the death of his father poor and helpless, was maintained at the university³. It does not appear that Jerome and his mother were at all times happy in each other, but that Clara, notwithstanding all her sins of temper or of principle, had a woman's power of self-sacrifice, and a mother's strength of love for Jerome, is what I think does appear, not indistinctly. Towards his father, Jerome's heart yearned many years after the old man had passed away, when the son could look back into his youth, forgetting for a time its deprivations, remembering only the gentle words and deeds of the geometrician, who had, he thought, been kinder to him than his mother. Of him he could then write, when the feeling rose naturally in his heart, words of emotion full of a love and gentleness, with

¹ Dial. de Morte. Opera, Tom. i. p. 676.

² De Vit. Propr. p. 92.

³ "Ipse inops, ac auxilio omni destitutus, diligentia et solitudine matris incredibili sustentabar." Dial. de Morte. Opera, Tom. i. p. 676.

which he seems to have been able to regard his father only. "My tears arise," he says, "when my mind ponders upon his good-will towards me. But, father, I will give what satisfaction I am able to your merits and your piety. And while these leaves are read, your name and virtue shall be honoured. For he was incorruptible and truly holy¹." At other times, in softened mood, we find him speaking of his old relation to his father during childhood, as "what I at that time thought to be hard servitude." At other times he writes the simple truth, but not resentfully.

Matthew Curtius, a physician of some note in his day, was professor of the theory of medicine in Padua, between the years 1524 and 1530². He encouraged Cardan greatly with his kindness, even condescending to hold public disputation with him. A compliment dear to the

¹ De Ut. ex Adv. Cap. pp. 349, 350.

² Riccoboni de Gymnas. Patavin. Lib. i. p. 21. Cardan de Vit. Propr. cap. xxxiv. p. 155. Curtius of Pavia taught also at Florence, Bologna, and Pisa. He wrote on Venesection in Pleurisy, on the quality of water, and also, among other things, edited Mundinus, the peg-book upon which anatomists had hung comments for years, until Vesalius achieved a revolution in their science. Curtius was fifty years old, and in the height of his reputation, when Cardan studied under him. His salary at Padua had been twice raised. He died in 1544, aged seventy. Brief details are given concerning him by Tomasini and Papadopoli in their records of the University of Padua, and more by Ghilini, whom I know only as cited in a work invaluable for the information it gives about forgotten men who were in any degree famous in the sixteenth century, "Zedler's Universal Lexicon aller Wissenschaften und Künste."

young man at the outset of his medical career, was the exclamation of the president before whom he argued some forgotten thesis against a forgotten doctor. The president, struck by Cardan's acuteness, asked who the youth was, and being told, exclaimed, "Study, O youth,—you will excel Curtius¹."

At the close of the year made memorable by his father's death, Jerome Cardan obtained from his university the honour of being appointed Rector of the Gymnasium². He very truly says, that the seeking of that office by him was a most desperately foolish deed³. The office was, in fact, the lordship of the university, a post so costly to the holder, that in those days of wars and taxes, and of social disorganisation in North Italy, nobody could be found willing to hold it. It was in abeyance at the time when Jerome Cardan, a clever, penniless, disreputable young scholar of twenty-four, maddened by difficulties, and by a belief that he was impotent for life (his sorest care), plunged desperately into its responsibilities, willing to drown one care in another.

The University of Padua, founded in the thirteenth

¹ De Libris Propriis: — "Stude, o juvenis, Curtium superabis." Stupebant omnes, adds Cardan.

² De Libr. Propr. (ed. 1547) p. 11. Lib. Ult. Op. Tom. i. p. 97.

³ "*Stulte vero id egi, quod Rector Gymnasii Patavini effectus sum, tum cum inops essem, et in patriâ bella maxima vigerent et tributa intollerabilia. . . . Deus! quid te ad hoc compulit? Ira certe et insania. . .*" De Ut. ex Adv. Cap. p. 430.

century, had been supported by the Princes of Carrara till their power rotted. Then the Gymnasium was placed, together with the town, in 1405, under the shield of Venice, the town keys and seal being presented in that year to Michael Steno. The liberality of the Venetians caused the university to prosper greatly, and it owed much in the first years of its dependence upon Venice to the liberality of rectors¹. Until the year 1550, there were two rectors yearly appointed, who held divided rule, the university itself being divided between artists (followers of theology, philosophy, and physic) and jurisconsults. As the affairs of the two classes were separate, each had its rector. Jerome, we have seen, joined the artists, not the jurisconsults, who had then for their own use a distinct

¹ The best accounts of the University of Padua in its good old times are, I believe, the six books of Commentaries on the Paduan Gymnasium, by Antonio Riccobone (Patavii, 1598), the Paduan Gymnasium, in five books, by the Bishop J. P. Tomasini (Utini, 1654), and the History of the Paduan Gymnasium, by Nic. Comn. Papadopoli (Venet. 1726). I have used these as my authorities. Riccobone lived partly in Cardan's time, but Tomasini's work is more serviceable, inasmuch as it is full of those minute details which give life to our knowledge of the past. It is quite the best work of the three. The two volumes of Papadopoli, Abbot of St. Zenobius, and Professor at Padua of Canon Law, are of great service as an elaborate appendix to the others. He made it his business not only to compile afresh (drily enough), but to supply from the university records the omissions that occurred in the lists of rectors, professors, &c., published by the two first-named writers. He gives also a brief account of every Paduan who had been famous, including, of course, Cardan. Cardan's name, however, as of one who had held office in the university, does not occur in any of the lists given by these chroniclers.

university building. After the year 1550 an union was effected, and the university was governed by one rector, chosen alternately, if possible, from among the artists and the lawyers¹. It was not possible always to maintain a strict rotation; it was even sometimes necessary to look abroad for a man "illustrious, provident, eloquent, and rich," by whose munificence the university could profit. The rector was, indeed, the chief magistrate of the university, who decided judicially disputes among the students and professors on fixed court days, who overlooked the working of the entire system, and saw that the teachers did their duty properly; but his administrative labours were lightened by the aid of a pro-rector, who did the real work, while of the rector himself no more was required than to be munificent. Scholars who would be dukes hereafter were the men thought most proper for the office. So indeed they were, for often rich men, daunted by the heavy demand made by it upon their purses, used the right of refusal granted to them. In the next century the rectorate was shunned so universally, that the office ceased almost wholly, the chief dignitary being the pro-rector, of whom work was required rather than money.

For seven years before the year 1515, wars in the district had caused the closing of the University of Padua.

¹ Papadopoli Hist. Gymn. Pat. Lib. i. cap. v. p. 7, for preceding details. Tomasini, Lib. i. ch. xix. to xxii. for those next following.

After it was re-opened, the prevalent confusion and distress made it impossible to find men who would add to all their other worldly loss the burden of the rector's office. For about ten years after that date, therefore, says a chronicler of the university¹, there were no rectors. In 1526 there is set down the name of one, and there was one in each of the two succeeding years. In 1529 there was again a rector for the jurisconsults, and another for the artists. The year, therefore, of Cardan's rectorate, 1525, is considered blank, and although Jerome, after two ballots, by a majority of one², obtained leave to assume the responsibilities which every wise man declined, he took none of the honours of the office. It entitled him at once³ to the degree of doctor without trouble or expense, but the degree was shortly afterwards refused to him. I do not think that he was enrolled as a citizen of Padua, and I am sure that he was not admitted at Venice into the equestrian order. He seems, in fact, to have received none of the rector's privileges, and he was accounted nobody by the university, his year of office being called

¹ Papadopoli, vol. i. pp. 95, 96. The list of rectors is there interrupted thus at the year 1508. "*Re Gymnasticâ intermissâ ob Cameracense bellum, mox restituta anno MDXV, à restitutione per annos circiter decem Rectoribus caruit Gymnasium.*" The list is then resumed at the year 1526.

² Cardan de Vit. Propr. p. 17.

³ The succeeding particulars concerning the office of Rector of the Gymnasium at Padua in the sixteenth century, are from Tomasini's first book, ch. xix. to xxii.

the last of the ten years in which there was no rector.

We may feel assured, also, that the bishop and the local magistrates, and his brother the town rector, did not come in state to visit the new dignitary, and that he did not go with due solemnity—as a true rector ought to go after his election—to the cathedral, escorted by two hundred spearmen, accompanied by the officials of the university on horseback, and by fife-players, and whatever else is noble. I even doubt whether they clothed him as a rector should be clothed—in summer robes of scarlet silk, and winter robes of purple silk—and hung the badge over his back, covered with gold and precious stones. If all these forms were properly gone through by the learned Paduans in honour of the young adventurer who undertook to preside over them, that journey of the desperate young Jerome, clothed in purple and gold, and surrounded by spearmen, to the solemn hearing of high mass, would form as odd a picture of times out of joint as any man could easily imagine.

That the professors and dignitaries of the university came solemnly to dinner at Cardan's expense I can believe. That the students flocked together to the great inaugural entertainment he was bound to give them, and to any of his other little official dinners, I am sure. Wild dinners they must have been, for Jerome looked back upon the

year when he was rector as a year of "Sardanapalan life," a blot upon his past for which he had to make atonement¹. And who found the money to support him in his false position—who paid for the mock-majesty of Rector Sardanapalus? The widow at Milan. His mother—we do not know how—worked for him, and by her self-denial and solicitude he was enabled² to sustain the charges that he had so foolishly and recklessly incurred. Perhaps she was proud of his distinction, unsubstantial as it was, but proud or not, she was his mother. Except his mother's help, he had no means of income but the gaming-table³.

Cardan had not at the university a large circle of friends. Except when he sought wild pleasure in a game of chance, or men with whom to sing, he was, in his studies and his recreations, almost a recluse; he thought that few who might be his companions were virtuous, none truly learned, and with a false cynicism he regarded social intercourse as waste of time. Yet he had formed in his youth a friendship, based upon community of tastes

¹ In chapter xiii. p. 59 of the *De Vitâ Propr. Liber*, he speaks of penance due—"ut vitæ Sardanapaleæ quam anno quo præfui Gymnasio Patavino egi, flagitia purgaverim."

² "Matris tamen sollicitudine effectum est, ut pondus impensarum, quamvis ægre, sustinuerim." *De Ut. ex Adv. Cap.* p. 430.

³ "Studentium Rector creatus, nihil prius cum haberem, totum tamen illud nihil consumpsi. Nec ullum mihi erat reliquum auxilium, nisi latrunculorum ludus." *De Consol.* p. 75.

for dice and music, with one Ambrose Varadeus; afterwards he had found a friend at Pavia in Prosper Marion. A pallid youth, Ottaviano Scoto, of Venice, who lost fifty sheets of Cardan's early efforts as an author, was a friend with whom the young student was upon familiar terms of lend and borrow as to books and money¹. This was his closest intimacy; out of it sprang one of the leading events in his after-life. Another of his close friends was Gaspardo Gallearato. Love of pleasure counteracted, in a great degree, Jerome's desire to play the misanthrope. In society he had also the satisfaction of rasping any tender point in a discussion. As much through love of argument as malice he perversely advocated the opinions that were most distasteful to his company², and loved a single combat of the tongue, in which it appears that he never failed to silence his opponent, for he could bring into play not only a quick wit and a rare amount of ready knowledge, but he could assume also a tone so rude and overbearing that few who had contested with him once would court a second battle.

Though the natural gifts and acquirements of Cardan were disfigured by harsh feeling towards others and an obtrusive consciousness of self, it is curious to observe how

¹ De Vit. Propr. cap. xv. p. 68.

² "Illud inter vitia mea singulare et magnum agnosco, et sequor, ut libentius nil dicam quam quod audientibus displiceat, atque in hoc, sciens ac volens, persevero." De Vit. Prop. cap. xiii. p. 60.

in his mind the vanity of the scholar was combined with, and perhaps, indeed, formed but a part of, a most rare candour in self-confession. Desiring and expecting an immortal fame, Jerome was thoroughly determined to enable all posterity to know what manner of man he was. Revelations of himself are to be found scattered throughout the huge mass of his writings: those revelations are collected here into a narrative, and we have had reason already, as we shall have more reason hereafter, to wonder at the unflinching way in which the Milanese philosopher must have performed self-dissection, when he laid bare so much that was corrupt in his own nature to the public gaze. To nobody was he so merciless as to himself; he scorned the men who, being dark within, study to show a brilliant outside to the world, and going over, as he always did, into a state of bold antagonism, he hung out every one of his misdeeds, and all that he found rotten in himself, for popular inspection.

Readily confessing cowardice, Cardan tells of a storm on the Lago di Guarda, in which he was nearly drowned. It was in the year in which he was rector, at a time when he was forced by want of funds to make an expedition homeward¹. He had pushed off into the lake, unwillingly enough, with a few companions, and they had on board

¹ "Pecuniarum exigendarum causâ." De Ut. ex Adv. Cap. p. 430.
To make work for his mother.

the boat some horses. Their sail was torn, they had their mast broken, lost also their rudder and one of their two oars, when night came on. At last they came ashore at Sirmione, when they were all despairing of a rescue, Cardan most of all. They came ashore in good time, for very few minutes afterwards, when they were housed safely in their inn, a fierce burst of the storm arose, which their disabled boat could by no chance have weathered. The iron hinges of the windows in the inn were bent by it. Jerome, who had been out of doors a confessed coward, tells philosophically how all his valour came to him when a fine pike was brought to table, and he supped joyously, though his companions could not eat. The only youth, except Cardan, who had an appetite, was he whose rashness led the party into danger, and whose courage found a safe way out of it¹.

But the scholar who was bold over his supper, and cared little for the howling of the wind outside, may have lost something of his boldness when the lights were out and the loud wind at night hindered him from sleeping. His philosophy had comprehended studies that gave strength to superstition. Astrologers had predicted from his horoscope that he would not live to be older than forty or forty-five; and he, believing them, took no pains in the management of his inheritance to reserve any

¹ De Vit. Propr. cap. xxx. p. 111.

provision for old age. Illusions of the senses, to which he was subject, strengthened his belief in supernatural appearances, and his own nervous, dreamy nature caused him to convert at times the memory of common events into some hazy impression of the wonderful. I have not thought it worth while to collect together all the stories of this kind related by Cardan ; but two may serve here as examples. At Pavia, one morning while in bed, and again while dressing, Jerome heard a distinct rap as of a hammer on a wall of his room, by which he knew that he was parted from a chamber in an empty house. At that time died his and his father's friend, Galeazzo Rosso¹. The disciples of certain impostors who in our own day have revived a belief in spirit-knockings in New York, may be referred to the works of Cardan for a few enunciations of distinct faith in such manifestations. A more curious example will occur hereafter. In the present instance, Cardan, who is never destitute of philosophic candour, owns that he was unable to prove any strict correspondence of time between the death of Rosso and the knockings in his room. It is enough for us

¹ De Vit. Propr. cap. xliii. p. 222. I quote the passage for the benefit of Rappists: "Quod mihi accidit dum studerem Papiæ, ut mane quodam, antequam expergiscerer ictum in muro senserim; vacuum erat habitaculum quod loco illi erat contiguum: et dum expergiscerer, et postea alium, quasi mallei, et quod eâdem horâ vesperi intellexerim obiisse Galeazium de Rubeis amicum singularem, et de quo tam multa, non id referam in miracula,"

simply to note how frequently the ear as well as the eye is deluded, when the nervous system is in a condition that appears to have been constant with Cardan. The sounds heard by him at Pavia portended no more than is meant by the flashes of light which sometimes dart before our wearied eyes.

We do not find greater difficulty in perceiving with how much ease Jerome may in lapse of time have fallen into the belief that a supernatural event marked his first experience in Latin. "Who was the man," he says, "who sold me a Latin Apuleius when I was, I think, about twenty years old, and instantly departed? I bought it without judgment, for its gilded binding; but the next morning found that I could read it. Almost at the same time I acquired the power of understanding Greek, Latin, French, and Spanish, that is to say, so that I could understand books in those languages, though unable to speak them and ignorant of their grammar¹." There is nothing in this superstitious suggestion inconsistent with the record left by Cardan of the time spent by him in acquiring languages and studying their grammar. In his early college days he bought a Latin Apuleius. He had been superficially practised in Latin by conversation with his father, and the language differs not so greatly from Italian as to make it wonderful that

¹ De Vit. Propr. p. 225.

any youth of quick and ready wit should find that he could make out at once the general sense of a Latin story. Any shrewd man acquainted with Italian can scramble at first sight through the meaning of a Spanish book, and of French, another allied tongue, young Jerome must have picked up a great number of hints from the French armies that overran his native district.

After the purchase of his Apuleius, the student may have prided himself much on the discovery of the great deal that he could extract from books in these languages, before they had become, or when they had not long become, matters of systematic study. The seller of the Apuleius could be looked back to at last from a distance of time as though he had been one of the legendary beings who come into the market-places to sell magic books, and then are seen no more. The impression would accord well with his superstitious fancy; he himself would very soon believe it, and could easily let Greek slip insensibly into the list of tongues miraculously placed within his power. It is no proof of deliberate untruth that Cardan has put down among the mysteries of life this vague impression in one place, but does not the less candidly relate elsewhere the pains with which he toiled along the usual paths of study.

Those paths led him, at the beginning of the year 1526, to the attainment of one object of ambition. He was in

that year laureated Doctor of Medicine. His admission to the dignity was not, however, easily accorded. Having been presented by his teachers, and proved himself before the bishop orthodox and loyal, it was the duty of Cardan, as of any other candidate, to defend publicly four theses, two of them selected by himself. His opponents in discussion were, as usual, the junior doctors; afterwards he himself, with those by whom he was presented, having withdrawn, his admission or exclusion was determined by a ballot¹. Jerome had been at first rejected, in spite of his rectorship—perhaps even because of it—by a compact body of forty-seven dissentients. On account of his birth, disgrace attached to his name; his love of dice, and various irregularities, must certainly have brought him into much disfavour, while his obstinate and disputatious method of asserting his opinions, and his contempt of custom, must have scandalised many of the magnates of the university. He was rejected twice; but when he made his third effort, the adverse voices were reduced to nine², and he was admitted Doctor of Medicine, and received with due solemnity the open and shut book, the barette, the ring, and the kiss. The open book signified things known to him that he was authorised to teach; the closed book signified the knowledge that it yet remained

¹ The details concerning the installation of a doctor here given are from Tomasini, Lib. i. cap. xlvii. pp. 159, 160.

² De Vit. Propr. p. 17.

for him, and was his business, to acquire. The baretti was of an ecclesiastical form, and signified that he was consecrated as a priest to science, and by its name (bi-rect), twice right, some thought it also signified that teachers ought to be correct in practice as in theory. By the ring he was espoused to his profession. The kiss was the symbol of the brotherhood to which he was admitted, and the peace and harmony that should prevail among all fellow-labourers in art or science. Then in the cathedral he was ushered by the bedel formally from a seat by his presenters to a seat by the prior, further symbolising that, as a man of learning, he was qualified to sit among the princes of the earth. So Jerome was made a doctor in the famous University of Padua. He was then twenty-five years old.

Having obtained this qualification, Cardan, without loss of time, proceeded to establish himself in practice. An opening was found for him at Sacco, to which place he went, by the advice and with the help of a zealous friend, a physician of Padua, Francisco Buonafede¹. Buonafede had been a warm promoter in the university of Cardan's claim to a degree. He himself held rank at Padua between the years 1524 and 1526 as the first of the two extraordinary professors of the Theory of Medicine, his

¹ De Ut. ex Adv. Cap. Lib. iii. p. 431. De Libris Propr. (1557) p. 12.

colleague being Peter Maynard, of Verona. Buonafede next became the second extraordinary professor of Practical Medicine, in which department he became senior professor in 1539¹. He was a man of great worth, who felt towards the young student disinterested friendship, for Cardan had not attended any of his lectures². Sacco is a small town, about ten miles from Padua and twenty-five from Venice.

Battle and murder, plague, pestilence, and famine, deterred Cardan from residence at Milan. During the six or seven years spent by him at Sacco, his own district was devastated by a succession of those evils that characterised in most parts of Europe the low social condition of the age. While Jerome pursued his studies at the university, the slaughter committed by the plague in his own district had been merciless. In 1522 fifty thousand of the Milanese died of the plague in four months. In 1524 there had been fierce plague, and by the fortune of war Milan had twice bowed to a new master. In 1526 and 1527, while Cardan dwelt at Sacco, Milan suffered under scarcity, that was made more distressing by the added burden of intolerable taxes. In 1528 disease and pestilence again broke out, and were less fearful in their ravages only because they had already swept off a large

¹ Gymn. Pat. Riccoboni, p. 23. Tomasini, p. 314.

² De Vit. Propr. p. 18. The same authority covers the facts stated in the succeeding paragraph.

part of the population of the district. In 1529 the miserable wars abated, and Cardan made an attempt to fix himself in Milan, for he regarded that town as his proper home. The attempt failed, as will presently be shown, and the adventurer having returned to Sacco, continued to live there during three or four more years.

At Sacco, in which town he began to reside—by way of omen perhaps—on his birthday¹, that is to say, on the 24th of September (1526), Cardan established himself in a house of his own, practised his profession, gambled, spent his money, and had no lack of holiday friends. The belief, founded on his horoscope, that he would die in middle age, and a desponding sense of inability to marry, caused the young physician to care little for the morrow. The consciousness of impotence had weighed upon him for about four years when he went to Sacco, and continued unabated until he was more than thirty years of age². It was the greatest trouble of his life during those years which formed, in other respects, the happiest part of his existence. To feel, or to confess, that he was absolutely happy was not in the nature of Cardan. The conditions necessary to true happiness were absent from his mind. To the child whose character is forming the accidents of

¹ De Libris Propr. (ed. 1557) p. 13. A work entitled "Epidemia" begins thus:—"Anno MDXXVI. die xxiv. Septembris quæ mihi natalis fuit, contuli me in Saccense oppidum."

² De Ut. ex Adv. Capiend. Lib. ii. cap. 9.

outer life are events of real importance, happy or unhappy in themselves, but in the man whose character is formed the outer life is subject to the inner. I have taken pains, as I thought just, to call attention to those incidents of Cardan's youth which had a baneful influence upon his character. The child Jerome it was right to handle tenderly, but now that he has grown up, and has come out into the world to take his part in it as independent worker, he must run alone, for he is too old to be nursed by a biographer.

In his own morbid way Cardan tells us that as there are short giants and tall pigmies, so when he says that he spent at Sacco happy days, we must understand them to have been happily wretched¹. He enjoyed games of chance, indulged his love of music, rambled through a beautiful country, dined and studied indolently. Nobody molested him, he spent his money and he had his friends, he was respected, visited by gay Venetian nobles. The magnates of the town associated with him, he kept open house, and men gathered about him, prompt enough to own that Jerome Cardan was a great philosopher. This cheerful bit of Cardan's life extended over five years and a half, commencing in September, 1526, and ending in the month of February, 1532, not very

¹ De Vitâ Propr. cap. xxxi. p. 129. The authority remains the same until there occurs a fresh citation.

many weeks after his marriage. He had enjoyed fairly his student life, but to the years spent at Sacco he looked back often afterwards. They contracted in his memory into a single happy thought, a thought to which, at night, his pleasant dreams frequently led him.

He studied while at Sacco indolently, or at any rate his study produced small immediate results. During the six years spent there his mind was at work, but that was a period rather of growth than produce. Cardan himself says, discontentedly, "During all the six years that I practised my art in that town, with great labour I produced but little profit to myself, much less to others." (Yet he was by no means wholly without practice¹.) "I was impeded by crude thoughts and restless studies, my wit not working smoothly or to good effect²." His written work during that period, except an essay upon Cheiromancy, an art in which Cardan had more faith than a modern gipsy, was entirely medical. It consisted of three hundred sheets, upon the Method of Healing; a treatise to the extent of thirty-six sheets, on the epidemic that prevailed in his neighbourhood during the whole time of his residence at Sacco; a treatise on the Plague. The treatise on the Plague was lost, and there were two other treatises destroyed also by the misdeed of a cat,

¹ De Consolatione, p. 75.

² De Libris Propriis. Liber ultimus. Opera, Tom. i. p. 97.

one *De Re Venereâ*, the other upon Spittle¹. The three hundred sheets upon the Method of Healing, Cardan proposed to arrange in four books, putting into the fourth the remedies for the compound diseases. Of the early works of Cardan, and of the teachings found in them, it will be my duty to speak more at large in the succeeding chapter.

Two persons Jerome names especially as having been his friends while he lived at Sacco. One of these, Paolo Illirico, was a druggist, with whom he came very naturally into contact. His other friend was Gian Maria Mauroceno, a Venetian noble². This may or may not be the same senator who was concerned in the disreputable quarrel next to be related, but the hero of it was more probably a nobleman named Thomas Lezun, who is elsewhere mentioned³. I shall best illustrate the bold way in which the philosopher speaks evil of himself, by putting down the worst part of this tale in his own words. They, however, who are familiar with the personal records that have been left to us by men of the world who lived and acted in the spirit of the sixteenth century, will know that the rude passion of Cardan was very little out of harmony with the coarse temper of the times⁴.

¹ *De Sapientiâ*, &c. p. 422. *De Libris Propriis* (ed. 1557), p. 13, where he says of the two spoilt treatises, "*ambo hi libri corrupti sunt urinâ felis.*" The same fact he records again elsewhere.

² *De Propr. Vitâ Liber*, cap. xv.

³ *Liber de Ludo Aleæ*.

⁴ I may suggest a recollection of the *Memoirs of Cellini*.

“When I was at Venice,” Jerome tells us¹, “at the festival of the birth of the Virgin, I lost my money at cards, and on the next day what remained; but I was in the house of the man with whom I played. When, therefore, I noticed that he used foul play, I wounded him in the face with a poniard, but slightly. There were present two youths of his household, and two spears were hanging from the rafters, and the house-door was fastened with a key. But when I had taken from him all his money, both his own and mine, having won back early that morning, and sent home by my boy the clothes and rings that I had lost to him on the preceding day, I flung back to him, of my own accord, some of the money, because I saw that he was wounded.” Having achieved so much, Cardan pointed his sword at the two servants, and threatened death to them if they did not unlock the door and let him out. Their master, balancing the cost in his own mind, and finding, says Jerome, that what he had now lost was not more than he had previously taken, bade that his assailant should be suffered to go unmolested. The fierce passions awakened in the gambler made such scenes no doubt sufficiently familiar, and the Venetian either was conscious that he had provoked an attack, by being guilty of the charge upon which it was founded, or he was a hospitable, kindly man. He took

¹ De Vitâ Propriâ, cap. xxx.

the dagger-thrust in friendly part and bore no malice, for there is a sequel to the story.

On the same day, while Cardan was wandering about, with arms under his clothes, endeavouring to avoid the wrath of the chief magistrate for his assault upon a senator, after dark his feet slipped and he fell into one of the canals. By clinging, in his struggle, to the oars of a passing boat, he obtained rescue at the hands of the rowers, and was dragged on board. He found on board his adversary, with a fillet round his face, who covered him not with reproaches, but with a dry suit of his own clothes.

After he had dwelt two years in Sacco, Cardan, never strong in health, was attacked by tertian fever, ending, however, on the seventh day. A year afterwards, in 1529, there being a slight remission of the plague and tumult in Milan, Jerome, summoned by letters from his mother¹, returned to his own town, and there endeavoured to obtain his enrolment among the members of the College of Physicians. But the old stain of illegitimacy clung still to him in the company of those men who had known him as a boy. The respectable body of the physicians of Milan would admit no bastard into their society, and they rejected him, upon a suspicion of illegitimacy based, as its victim tells us, upon the ill-treatment he had expe-

¹ De Consol. p. 75.

rienced from his father¹. When Cardan is relating facts, the neglect of his son by the geometrician cannot be kept out of sight; when he expresses feelings, however, a sentiment of filial affection, and a tender recollection of the old man's latest sympathies, prompt nothing but panegyric of the dead.

His rejection by the physicians of his own town for the reason assigned, inflicted a fresh hurt upon the sickly spirit of the young philosopher. He entreated also, while in Milan, for some satisfactory adjustment of his claims against the powerful Barbiani family²; but from the Barbiani he obtained no settlement. He found his mother also sullen; and having experienced in Milan insult and disappointment, with much bodily and mental toil, he went back to Sacco in a hectic state, half convalescent from a desperate complaint. He had been oppressed at Milan with worldly cares, the sense of which was rapidly supplanted by the expectation of death³. Cough, ulcers, and foetid expectorations, caused all who were about him

¹ De Consol. p. 75.

² De Vitâ Propr. p. 18.

³ De Propr. Vit. p. 19. De Consol. p. 76, where he writes—"Interim vero cogita quæ curæ quæ tristitiæ animum meum vexare debuissent. Hinc paupertas maxima, illinc mater flens orbitatem et suam miseram senectutem, tum memoria contumaciæ affinium, injuriæ ut rebar medicorum, minæ potentis" (*i. e.* of Count Barbiani, who no doubt had borrowed money of Fazio) "desperatio salutis, nullus amicus. Quiescens indigebam necessariis, laborare non poteram: mendicare turpissimum erat." On the same pages will be found authority for the succeeding facts.



for a long time to consider that the life of Cardan was already near its close. He was thus seriously ill for seven months, wanting necessities. Nevertheless, by the intercession, he tells us, of the Blessed Virgin—perhaps through abstinence from medicine, for he took none; perhaps, he hints, because he was reserved for better things—Jerome recovered. There were many years to come through which a busy philosophic mind had work to do in the unwholesome chamber of his body. The spirit would have been more healthy had it dwelt in wholesome flesh. In more than one place we are told by Cardan that his mind suffered at times pain so intense that he was glad to relieve it by applying counter-irritation to his body. He would beat his thighs with a switch, bite his left arm, pinch tender bits of skin, would fast, and endeavour by such means to produce a flow of tears, for he was relieved greatly by weeping, but was frequently unable to obtain for himself that method of relief¹.

The appearance of Cardan in his manhood well accorded with the temper of his mind². He had thin arms and unequal hands, the left hand being elegantly formed with shapely nails, the right hand clumsy and ill-shapen. His forehead was broad, and there was little hair upon the temples; in later and graver years he wore a skull-cap on

¹ De Vitâ Propr. cap. vi. p. 30; cap. xiv. pp. 65, 66.

² Ibid. cap. v. p. 24; cap. xxi. pp. 84, 85, for the next statements.

a shaven head. His beard was yellow and forked. His gait was clumsy, for he paid little or no heed in walking to the way that lay before him, and his pace and bearing varied with his thoughts. It was now fast, now slow, now upright, now with bowed head, as variable as the gestures of a child. In his speech he was too copious and too deficient in amenity¹. He was very fond of fishing². He had a taste for cats and dogs and little birds, so that he even names them with history, music, and other things that adorn this transitory scene, placing them in his list between liberty and temperance on the one side, and on the other side the consolation of death, and the equal ebb of time over the happy and the wretched³. Among his follies he numbers an inability to part with living things that have been established once under his roof. "I retain," he says, "domestics that are not only useless to me, but that I am told also are a scandal to my house; I keep even animals which I have once accepted, goats, lambs, hares, rabbits, storks, so that they pollute me the whole house⁴."

A more natural taste in a philosopher, an extravagant

¹ De Vitâ Propr. p. 59.

² Ibid. p. 80.

³ He speaks of quicquam boni quo adornes hanc scenam, and gives for example "musicæ auditus, oculorum lustratio, sermones, fabulæ, historiæ, libertas, continentia, aviculæ, catuli, feles, consolatio mortis, communis temporis transitus miseris æqualis ac beatis, casuum et fortunæ." De Propriâ Vitâ Lib. cap. xxx.

⁴ De Propriâ Vitâ Lib. cap. xiii. pp. 60, 61.

taste for the purchase of books, can scarcely be named as a peculiarity¹. More characteristic, in the same way, of the philosopher whose ruling passion was an eagerness for everlasting fame, was a delight in expensive writing materials, a desire to lavish money on the instruments by use of which his name was to be made immortal². A personal peculiarity which lasted for about two years while he was at Sacco, Jerome regarded as a portent. His skin exhaled a strong odour of sulphur³. As a practitioner of medicine, Cardan, very wisely indeed, considering the science of the time, trusted more to experiment and observation than to his own wisdom or the knowledge of his art. As a philosopher, apart from dice and cards, he professed and felt tender regard for time, the economy of which he recommended by some such proverb as that many mouthfuls make a bellyful⁴. Not only when professedly at work, but also when riding, walking, eating, or awake in bed, there were analyses and distillations going on within the laboratory of his brain. He considered it a good and wise thing to court the acquaintance of old men, and to seek knowledge in their society. He also, in a spirit of the truest philosophy, considered it

¹ "Profusus in emendis libris." De Vit. Propr. cap. xxv. p. 94.

² De Vit. Propr. cap. xviii. p. 80.

³ De Rerum Varietate (ed. Basil. 1557), Lib. viii. cap. 43, p. 316.

⁴ "Multa modica faciunt unum satis." De Vit. Propr. cap. xxiii. p. 90. All that is stated in this paragraph depends for authority on the same chapter in the Liber de Vitâ Propriâ.

his duty to observe everything, and suppose nothing to have been fortuitously made by nature—"by which means," he hints, and we can readily believe, "I have become richer in knowledge than in money."

Recovered from his wasting illness, writing, trifling, and enjoying again his position in the little town of Sacco, when he had completed his thirtieth year, towards the end of the year 1531¹, the young physician married. Before the event, he tells us², looking back to it from a later date, and colouring his narrative with superstition, before the event a quiet dog howled with unusual pertinacity; ravens sat upon the house-top and croaked more than they were wont; bundles of sticks broken by a boy emitted sparks of fire.

At that time Cardan, newly and suddenly³ relieved from the sense of incompetence to marry by which he had for ten years considered himself doomed to remain single, dreamed of a lovely maiden dressed in white. His

¹ De Vit. Propr. p. 19.

² De Vit. Propr. cap. xli. pp. 209, 210:—"Cum anno MDXXXI. canis modesta ulularet præter consuetudinem assiduè: corvi insiderent domus vertici crocitantæ præter solitum, puer cum fasciculos lignorum frangeret, erumpebant ignis scintillæ, duxi uxorem inexpectato."

³ "Mirum dictu," he says (de Lib. Prop. Lib. ult.) "ut flatim è galli naceo factus sim gallus, et ex *θλασίᾳ κήλων*." All this part of Cardan's experience is the theme of a distinct chapter of the second book De Ut. ex Adv. Cap. beginning at p. 280 of the edition before cited. In it he relates with surprising candour various facts belonging to his student life, especially to the year of his rectorship.

sick mind coloured the memory of his dream in later and more miserable years ; the shadow of his future life is therefore thrown over the telling of it. Jerome Cardan dreamed¹ that he was walking in a lovely paradise, fanned by a soft breeze, through scenes such as not Pulci himself could represent by words. It seemed to him, that as he came by the garden porch, he noticed that the gate had been left open. Then looking through the open gateway he saw standing beyond the porch a damsel dressed in white, and he went out to her and put his arms about her neck and kissed her. But after his first kiss there came the gardener, who shut the gate, and would for no persuasion open it again. Then Jerome hung upon the damsel's neck, outside the locked door of his paradise.

Now it happened that not long after this dream a fire took place in the house of an inhabitant of Sacco, Aldobello Bandarini², captain of the Venetian levies in the district of Padua. Cardan, who scarcely knew this man by sight, felt somewhat annoyed when, after he had been burnt out of his own home, he established himself next door to the philosopher, and vexed him with the constant passing to and fro of a rough set of visitors. Aldobello was a man who had created friends and fortune for himself in a shrewd, genial way. Jerome was learning to en-

¹ De Vitâ Prop. cap. xxvi. pp. 96, 97. De Libr. Propr. Liber ultim. Opera, Tom. i. p. 97.

² De Vit. Prop. p. 97.

dure his neighbourhood, when after a very few days he saw from the road a girl standing at the captain's window dressed in white—a girl perfectly resembling her of whom he recently had dreamed¹. What was the girl to him? he reasoned. How can I marry a girl who is poor, when I myself am poor? How can I bear to be crushed under the weight of her brothers, sisters, and relations, when I barely know how to support my own existence? Abduction or seduction are not to be thought of (they were unhappily thoughts only too ready to arise in men who admired women three centuries ago), because her father is a captain who would bear no wrong, and lives next door to me, handy for vengeance. O miserable man, what can I do?

It is most probable that Cardan did connect Lucia Bandarini, the damsel whom he first saw dressed in white, with some dream of a white-robed girl that he regarded as an omen, for he was deeply imbued with all the superstitions that had credit in his age. The dream and the desire for marriage were both most likely begotten of his newly-acquired sense of power. He became eager to

¹ De Vit. Prop. p. 97. "Verum dicebam, quid mihi cum hac puellâ? Si uxorem ducere voluero pauper nihil habentem et fratrum ac sororum multitudine oppressam, perii, cum vix vel sic sumptum sustinere queam; si tentem abducere, aut occultè eam opprimere, cum ipse sit oppidanus, non deerunt exploratores, Tribunus Militum non injuriam patietur, et in utroque casu quid mihi agendum erit? O miser . . ."

marry Lucia, and by his eagerness greatly surprised the captain, who at first believed his offer to be made in jest, knowing what chances of marriage he had up to that time steadily refused¹. The offer was, however, no jest, and the willing maiden was led to the altar by a willing man², who afterwards, during the short time that he remained in Sacco, received all the aid and kindness that her parents could bestow upon him. The dog had howled, the dream had warned, but Jerome Cardan took a wife home notwithstanding.

¹ De Lib. Prop. Lib. ult. Opera, Tom. i. p. 97.

² "Duco volentem volens." Ibid. p. 98.

CHAPTER VI.

WORK OF THE BRAIN.

MEDICINE, during the last hundred years, has been developing with energy among the sciences, and marking, by an ample ring of newly-acquired knowledge, each year's growth. The study of it may be compared now to a tree planted on congenial soil, for its roots are imbedded in a fair amount of ascertained truth concerning the principles upon which nature acts. When there was no true natural philosophy, there could be no true science of medicine. Medicine was then an art, in which there was awakened no inherent power of development. Diseases are so various in kind, and those of the same kind so various in aspect, that the best empiric, with no thread of principle to follow, is a man lost in a labyrinth. Before anything like a correct knowledge of the ways of nature had supplied the clue, it was in the choice of the physician either to treat his patients in accordance with some theory deduced from the false data furnished by an unsubstantial philosophy, or to argue wholly, as well as he could, from

experience. In the time of Cardan it showed sound discretion in the doctor when he could say as Cardan said, "I have been more aided by experience than by my own wisdom, or by faith in the power of my art¹." At that time the empiric really was the best physician, and a quack doctor, who would use his eyes with conscientious shrewdness, dealt less death—not to say more health—about him, than the graduate who put trust in scholastic theories.

It was just in those days that the sap began to rise in the philosophy which had put forth leaves once only, and but for that single brief show of vitality had remained, to all appearance, without any change where it was first established by Hippocrates. The science of medicine, for the reason before stated, makes more progress in one month of the present year than it was able to make among all the generations that succeeded each other in the world between the time of the birth of Hippocrates and the publication of the writings of Cardan. During that great interval of twenty centuries there was born only one man, Galen, who did much to advance medical knowledge; and so little had otherwise been gained by the accumulation of experience, that when Cardan began to write, Hippocrates and Galen were the undisputed teachers of all that was held to be sound practice in

¹ De Vitâ Prop. cap. xxv.

medicine and surgery. Nothing was at the fingers' ends of doctors that was not found in the tomes of those two ancient worthies, if we except the dust and cobwebs of scholastic theories that had collected on their surface in the lapse of time. There were indeed other writers whom physicians studied, Oribasius, Aëtius, Paulus Ægineta; among the Arabs, Avicenna, and Averroes, Rhases, and others. But these, so far as they were trustworthy, were little more than cups filled from the pure spring of Hippocrates, or the broad pool of Galen. As for the Romans, they had no physicians of their own worth following. Celsus was only useful—and in that sense very useful—to physicians of Europe in the sixteenth century, as a repertory of medical Latin, which enabled them to write their treatises correctly, and apply to diseases and remedies of which they read in Greek, the proper Latin names in their own volumes.

It was in the lifetime of Cardan that the sap began to find its way into the barren stems of many sciences. The spirit of inquiry that begot the reformation was apparent also in the fields and woods, and by the sick beds of the people. Out of the midst of the inert mass of philosophers that formed the Catholic majority in science, there came not a small number of independent men who boldly scrutinised the wisdom of the past, and diligently sought new indications for the future. Cardan was one

of these; perhaps the cleverest, but not the best of them. Though he worked for the future, he was not before his time. It was said after his death, probably with truth, that no other man of his day could have left behind him works showing an intimate acquaintance with so many subjects¹. He was one of the few men who can be at once versatile and profound. He sounded new depths in a great many sciences, brought wit into the service of the dullest themes, dashed wonderful episodes into abstruse treatises upon arithmetic, and left behind him in his writings proofs of a wider knowledge and a more brilliant genius than usually went in those days to the making of a scholar's reputation. Jerome, however, had not a whole mind, and the sick part of him mingled its promptings with the sound in all his writings. To any one now reading through the great pile of his works, the intellect of the uneasy philosopher might readily suggest the image of a magnificent moth half-released from the state

¹ A Milanese physician, writing of the Milanese College—the same that had once persecuted Cardan—not very long after Cardan's death, scarcely exaggerated the opinion then held in speaking of him: "*Tanquam ad omne scientiarum genus natus, inter omnes sui et antiqui temporis profitentes medicos eminentissimus, verum Medicinæ lumen.*" Joan. Bapt. Silvatico, *Liber de Coll. Mediol. Med.* (1607) cap. xx. Naudæus is still more emphatic, and considers Cardan to have excelled Aristotle in variety and depth of knowledge. Cardan himself (living before Dr. Johnson's time) was not ashamed to boast that he had written more than he had read, and that he had taught more than he had learnt.

of chrysalis, its head and feet and front wings working out towards free space and upper air, but all the rest bound by some morbid adhesion to its dusky shell.

The publications issued by a scholar form, of course, so many chapters in his life, but anything like a full discussion of the writings of Cardan, which, in the collected edition, fill ten densely printed folios with matter that is almost everywhere curious and interesting, would occupy more space than could be allowed to it in this biography. I shall condense, therefore, into the present chapter what I wish to say about his early works, including everything written previous to his marriage. Up to that time nothing had been printed. In speaking of these, and afterwards in speaking of maturer, better works, I shall endeavour to dwell only upon those points which elucidate his character, or stand out as facts that belong fairly to the story of his life. Since the great triumphs of Jerome's genius were not achieved in boyhood or in youth, it is not necessary to say very much about those first fruits of his intellect to which this chapter is devoted.

They have been named already. The treatises, written almost in boyhood, on the Earning of Immortality, and upon the True Distances of Objects, do not remain to us. Cardan himself tells us "they were juvenile attempts, and rather signs of disposition than the fruits

of knowledge or of study¹." The early treatise upon gambling, written in Italian, is represented by a Latin disquisition, published at a later date, on dice and cards². This is recast from the early work, and has few traces of maturity about it. It contains much curious minute information about the games played in those days, and the tricks of gamblers, good to be consulted by all writers on the history of such amusements. The book is, at the same time, very characteristic of the writer's temper. Gambler himself, and writing in that avowed character a treatise on his favourite amusement, Jerome takes no pains to defend his reputation, or to justify a love of dice. He lays it down coolly and philosophically, as one of his first axioms, that dice and cards ought to be played for money, since if there be no stake to win there is nothing to mitigate the fact that time is to be lost³. To play at dice and cards for amusement purely, he says, when there are books, music, conversation, and so many wiser and better ways of passing time agreeably, is the part only

¹ *De Libris Propriis*. Liber ultimus. Opera, Tom. i. p. 97. "Fuerant enim conatus juveniles: et indolis potius indicia, quam fructus scientiæ aut studiorum."

² *De Libris Propriis* (1557), p. 11.

³ "Impositus est tamen modus, circa pecuniæ quantitatem, aliàs certè nunquam ludere licet: quod quam sumunt excusationem de leniendo tædio temporis, utilius id fiat lectionibus lepidis, aut narrationibus fabularum vel historiarum, vel artificiis quibusdam pulchris nec laboriosis; inter quæ etiam lyra, vel cheli pulsare, aut canere, carminaque componere, utilius fuerit. . . . Lib. de Ludo Aleæ, cap. ii.

of an empty man. Dice and card-playing in a house set a bad example to children and servants; and people who are very respectable, says Jerome, ought not to be seen at the gambling-table. To take part in games of chance sullies also especially the dignity of a physician¹.

There is more than ordinary candour in this way of opening the subject, and in the recommendation that decent people should gamble in private, and then only with their equals in position and in wealth¹. There is a chapter occupied in the setting forth, as upon a balance-sheet, of the good and bad sides of the dice-player's experience². In his favour, it is said:—At the gaming-table he forgets his cares, and can return from it with a prompt spirit to the work over which his mind may happen to have flagged. There, also, his friends open their souls to him unwittingly, their passions and propensities break out over the changes of the game, and he can see them and discriminate between them as they are. The gaming-table also is, for the time, as true a leveller as death; over it men have hailed princes as companions, acquired their favour, and obtained promotion in the state. Cardan himself did in this way become acquainted with a prince³. Then, however, turning to the dark side of the picture, the philosopher dilates upon the great preponderance of

¹ Liber de Ludo Aleæ, cap. iii.

² Ibid. cap. iv.

³ "Quo etiam Francisco Sfortiæ Mediolani principi innotui et nobilium amicitiam multorum mihi comparavi." De Vit. Propr. cap. xiii. p. 62.

evil that he finds, and sums up by saying that he writes a treatise upon gambling, though it is a bad thing, because it had become (as, indeed, in those days it almost had become upon all ground much afflicted by the tread of armies) universal and, as it were, natural to man. He writes of it, therefore, as a physician writes of an incurable disease, not praising it, but showing how to make the best of the affliction¹.

Then arises a discussion of the furniture of dice-playing—namely, the tables, and the bone marked upon four sides, or the cube marked upon six. Then follows a chapter upon the casting with one, two, and three dice, pointing out probabilities. The rest of the treatise includes a consideration of the morals of dice and the rules of honour among gamblers, as, says Cardan, there are laws also among thieves². It contains also an account of all games played with French, Spanish, German, and Italian cards, including a description of the cards then commonly in use. Cheating appears to have been more common, as it was more easy, with cards than with dice. Among the tricks that are exposed is one that consisted

¹ "Etsi tota Alea mala esset cum tamen ob ludentium multitudinem quasi naturalis sit; ob id etiam velut de insanabilibus morbis a Medico tractandum fuit; namque in omne malo est minimum malum, in omni dedeco minimum dedecus, in omni flagitio minimum flagitium." Lib. de Ludo Aleæ, cap. v.

² "Sunt enim in malis rebus suæ leges; velut et latronum et piratarum." Ibid. cap. xxix.

in soaping the back of some important card, so that the others should slip from it when it was thrown down among them. Thomas Lezun, a Venetian patrician, used to cheat Cardan with soaped cards. We may suppose that when a trick of that kind could be practised the cards used were not particularly clean. Nor should we connect with them any associations drawn from the modern whist-table: in most games played in the time of Cardan, cards were used only as paper-dice. This treatise closes with a little chapter upon the use of dice among the ancients.

Of the works already named as having been written by Jerome during the six or seven years of his life in Sacco, there remain two, both of which underwent at a later period of their author's life a great deal of revision. One of them is the little treatise upon Cheiromancy, which afterwards was published as a chapter in a philosophic work of great extent, the labour of maturer years. In his maturest years, however, Cardan never escaped from the hold of superstition. Stars and dreams were always portents to him, and he never ceased to believe that there was a portentous science to be studied on the palm of a man's hand. The hand, he said, is the instrument of the body, as the tongue is of the mind¹. He therefore studied

¹ De Rerum Varietate Libri xvii. (Basil. 1557) Lib. xv. cap. lxxix. p. 557.

all that he found written upon Cheiromancy, and his treatise on the subject is no more than a dull abstract of his studies. He gives, for example, a woodcut-picture of an outspread hand, with the name of each part inscribed on it, according to the Cheiromantic nomenclature. Above the joint of the hand at the wrist there is the *carpus*¹. The side of the hand against which the thumb rests is the *thenar*. The other side, between the little finger and the wrist, is called the *hypothenar*. The ball of the thumb is entitled *stethos*. The joints of each finger from the hand upwards are called *procondyle*, *condyle*, and *metacondyle*. Then there is assigned to each finger a planet, Cheiromancy being, in fact, a sister science with Astrology. The thumb and *stethos* belong to Mars: on them we read of violence or strength, of fire or hostile accidents in life; there also we read of rough attachments, similar to that which inclined Mars to Venus. It is a curious fact to note how intimately a belief in the old heathen mythology was blended with those pseudo-sciences, astrology and cheiromancy, and in that form could be fostered even by grave Christians and dignitaries of the Church of Rome. The index finger belongs to Jove: upon it we read of priesthood, honours, magistracy. Middle fingers are all subject to Saturn: Saturn writes on them dark hints of prisons, fevers, poisons, fear,

¹ De Rer. Variet. pp. 558—564.

grief, profound meditation, occult studies, toil without reward. The ring finger is the Sun's: on it we read of high honour, power, and the favour of kings. Venus holds man by the little finger: upon it she writes of wives and sons and other pleasant things that suit her humour. The Moon rules over the hypothenar: upon that she tells of shipwrecks, suffocations, and submersions. In the next place, concerning lines, the line within the hand, bounding the ball of the thumb, is the line of life, of the heart, and of the sun. The line across the middle of the hand is the line of the brain and of the moon. There is a line running sometimes from the carpus to the middle finger, called the sister to the line of life, and they who have it lead lives full of labour and pain. It would be weary work to multiply the details of so dull a science. Very few more words upon it will suffice.

They who are to die early have the lines upon their hands indistinct and intersected in a great many places. They will be happiest whose lines are deep, and coloured, and straight in their course, or running into such regular forms as stars, crosses, squares, or parallels. New lines found tending to the right mean new successes, those that incline to the left forebode reverses. Fine lines like hairs denote bad luck. This science also takes great notice of the nails, drawing conclusions from the number

and the colour of the spots upon them. All these things, throughout his life, Cardan, a great philosopher, religiously believed¹.

He was not daunted by this problem: In children on account of the softness of the skin, and in old age on account of its dryness, lines are most abundant. How then can lines denote the course of life when they abound most in the people who do nothing? To this objection Jerome was content to give the answer properly appointed to be given by the teachers of the Cheiromantic creed². In children the lines signify the future, in old men they signify the past; in each they tell of a whole life. In the mature hand, also, it is convenient to know that there are

¹ After speaking of some of the doctrines of Bodinus, who was born thirty years later than Cardan, Dugald Stewart says: "Notwithstanding these wise and enlightened maxims, it must be owned, on the other hand, that Bodin has indulged himself in various speculations, which would expose a writer of the present times to the imputation of insanity. . . . In contemplating the characters of the eminent persons who appeared about this era, nothing is more interesting and instructive than to remark the astonishing combination in the same minds of the highest intellectual endowments with the most deplorable aberrations of the understanding; and even, in numberless instances, with the most childish superstitions of the multitude." *Encyclopædia Britannica*. Eighth edition. Vol. i. pp. 28, 29. The life and writings of Cardan are an emphatic illustration of this fact. Speaking very roughly, we may even say that where Cardan was thought mad by his neighbours, we should think him wise; and where his neighbours thought him wise, we think him mad.

² *De Rer. Variet.* p. 561.

many lines, commonly ill-defined—as if vanishing—that tell of past events.

The work next to be mentioned shows the intellect of the superstitious philosopher from a better point of view. It is the treatise on the Differing of Doctors.

Many things in the writings of Cardan make it evident that he had studied Galen to good purpose, and it is not unlikely that it pleased him secretly to feel that he himself resembled Galen in a good many particulars. Hippocrates stood on his own pedestal, and was a great man by himself. The old father of Medicine, contemporary with the wisest men of Greece—younger than Socrates, but at the same time an older man than Plato—merited his crown of gold from the Athenians and his dinner in the Prytaneium, for he was morally and intellectually great. He wrote simply, tersely, royally as a king issuing wealth from his own mint, not as a rich man pouring out his hoard of coins, with all manner of kings' heads and dates upon them. He was a fearless old fellow who would not move one step for the enemies of Greece. He was a true-hearted physician, who gathered men about him in a grand spirit of kindliness. He visited the poor without reward, loved knowledge for its own sake, bound his disciples by a vow to mutual courtesy, to a religious keeping of all secrets trusted by sick people to their

charge, and enforced with all his might a code of practice that became a noble calling. To the end of the world, physicians will appreciate their fine-hearted old father, and be proud to think themselves the children of Hippocrates. But Galen was a man of smaller stature, living at a time when it was not so easy to be noble. He was physician to five Roman emperors, and one of them was Commodus. He commented upon Hippocrates, and wrote much ; not in the clear, royal style, but with diffuseness. Like Cardan, Galen had a passionate mother ; like Cardan, he was persecuted, for he could with difficulty keep his ground in Rome against the sects in medicine whose theories he laboured to demolish ; and the parallel holds good, though Galen became great in his day, and was sought by kings. Like Cardan, again, Galen was deficient in personal courage, and superstitious, having much belief in dreams and omens. Galen and Cardan were both boasters, and both men who really rose above the level of the intellect around them. Galen fought against the mere scholastic sects into which the doctors had degenerated and divided, the dogmatics, the empirics, the methodics, the episynthetics, the pneumatics, the eclectics, and especially attacked them in a lost book, of which the title is preserved, *De Empiricorum Contradictis*, the Differings of the Empirics. Cardan found the physicians in his day straying

away from the truth, and losing the best sense of the teaching of Hippocrates, as Galen had restored and amplified it. The first attempt, therefore, of Cardan, as a medical author, made in direct imitation of Galen, was a work entitled *Contradicentia Medicorum*, on that wide subject the Differings of Doctors. The titles of some other of Cardan's works are borrowed from the example of Galen. The list of resemblances is scarcely made complete, when I add that the style of Galen, brilliant, pompous, and diffuse, would not pair badly with the style of Cardan, though Cardan, equally diffuse, wrote with less rhetoric and more true genius. Galen was also a prominent example of prolific authorship, Cardan himself being no mean proficient in the art of bookmaking. In that respect, however, he was utterly eclipsed by the sage of Pergamus, since it is said of Galen that he wrote seven hundred and fifty books; five hundred on medicine, and the rest on geometry, philosophy, logic, and grammar. Galen wrote two treatises especially upon the books that he had written, and the order in which they were to be taken. Those treatises he called "*De Libris Propriis*." Cardan wrote three works of precisely the same kind, and gave them the same title.

While noting facts like these, it is to be remembered that the imitation of old forms was, in Jerome's time, the highest object of a great deal of the scholarship of Europe, and that Cardan shared many points of the preceding

parallel with a large body of the teachers in his day. He differed from the herd of doctors, however, very greatly, inasmuch as he poured into the old jars not dregs collected from all quarters, but fresh oil of his own pressing. His first work, the *Contradicentia Medicorum*, was very much expanded afterwards, and published as a massive treatise, of which it will be requisite to speak in a succeeding chapter. It will be quite sufficient, therefore, now to state the plan of it, since that was conceived even in its author's days of pupilage. Hippocrates, said Cardan¹, had become obscure through lapse of time and the conciseness of his style. Galen—"of whom there remains less than we could wish, but more than we could well believe it possible for one man to have written"—Galen, in works written at different periods, contradicted himself much and often. By the Arabians all his errors had been copied. Aëtius was inconsistent, following at once both Galen and the men whom Galen combated, and never giving reasons for his dicta. Oribasius was useless. In fact, there was only Galen, with his errors and his obsolete passages, upon whom a hope of useful information could be built. His design, therefore, was to travel steadily through the medical doctrines of Hippocrates and Galen, to note all contradictions of themselves or of each other, and to consult with the same view the works of all the

¹ *Contradic. Medicorum*. In preface.

leading medical authorities. Then he proposed to present to the medical world of his own day, in a series of paragraphs, all the chief points on which conflicting sentiments had been expressed; to cite in each instance the differing opinions, in order that a judgment might more easily be formed as to the balance of authority. He himself always undertook to hazard a decision, testing the judgment not only of the Prince of Physicians, but of others; in every case following, as his guide, Reason rather than Authority. He would confirm or dispute past opinions, and not shrink from the addition to them, now and then, of views more properly his own. The reader was thus also to be left fully provided with the materials required for independent judgment. The value of a work of this kind, really well done, would of course be great, and many sheets had been written in prosecution of the plan when Jerome took a wife at Sacco.

CHAPTER VII.

THE STORY OF ALDOBELLO BANDARINI—ILLS OF FORTUNE—OF THE
PORTENT THAT AFFLICTED CARDAN AT THE BAPTISM OF HIS ELDEST
SON—HUNGER IN GALLARATE—POVERTY IN MILAN.

JEROME CARDAN duly reflected before marriage upon the dead weight of his wife's relations, that might, perhaps, form not one of the lightest burdens of the married state. Lucia was the eldest of four sisters, and she had three brothers, all sons and daughters of Aldobello Bandarini and his wife Thaddæa¹. At the time of the marriage, however, it was much more likely that Jerome would depend now and then for help upon the Bandarini family, than that the Bandarini should need—or, if needing, ever be able to get—help from him. Aldobello, the father-in-law, was a man in the prime of life, genial and shrewd, a man who knew not only how to win to himself friends, but also how to use them profitably. A full sketch of his career is left to us by Cardan, who, speaking

¹ The succeeding sketch of the career of Aldobello follows the very full narrative given by Cardan in *De Ut. ex Adv. Cap. Lib. iii.* pp. 457—466.

rather as a philosopher than as a son-in-law, begins his story very much in the manner of a physician of the present day who has a case to state, and defines his subject as—“Aldobello dei Bandarini, of the town of Sacco, aged about thirty-five, hairy over his whole body, short, round limbed, and of a dusky colour,” &c. This man began life as a soldier, and made a little money in the wars—that is to say, being of an acquisitive disposition, he had laid by three or four hundred crowns of gold. Retiring then from military life, he built an inn at Sacco, and dwelt in it with his wife Thaddæa and his seven children. Mine host soon made himself known in Sacco as a sociable, friendly fellow. In his domestic management he was a strict economist: nothing was in his eyes too small to be saved. He bought in times of cheapness stores that he laid by to sell in times of dearth; he paid cash for his purchases when he could obtain any advantage by so doing, and wherever it was gain to him to run a bill up and allow it to remain unpaid for a time, so he did. He not only received guests as an innkeeper, but also provided dinners and suppers for private parties in the town; at such entertainments, whatever was to be consumed he sold; whatever was to be looked at only, he let out on hire; what he himself did not possess, if it was required he would contrive to borrow and sub-lend. To the great men of the town he was indispensable: whether they

feasted or gambled, there was the friendly, jovial Bandarini ready to supply their wants; and so much did he ingratiate himself among them, that even clothes and worthier gifts were often pressed upon him by his noble friends. Still more complete, however, was the hold which the bland soldier-host maintained upon the goodwill of the gentle sex. He often busied himself in defending the causes of accused people before the magistrates, in obtaining by his influence exemption from some public burden for one friend or another, and for such services the gratitude of the women streamed upon him in a shower of substantial gifts, which he accepted without difficulty. Kind messages were constantly accompanying to his door consignments of wine, meal, geese, chickens, pigeons, barley, pigs, or cheese, so that he could almost have kept his family upon the goodwill-offerings supplied by his fair neighbours.

At one time, in the hope of making profit from it, Aldobello had, among other things, stored up a considerable heap of flax. To this heap, Mark, his eldest boy, by accident set fire; the inn was burnt, and with it all the wealth of its bland master. Bandarini, without showing any anger, bit his nail; he did not so much as utter a curse, but thanked God that his children were all safe. After the fire was out, he searched for any little things that might possibly be snatched out of the wreck; friends

also flocked to him with presents in their hands, and hospitable homes provided bed and board for all his children. There was no capital wherewith to build another inn, but there was worldly wit in ample store, and Aldobello set to work at once over the rebuilding of his fortunes.

The Duke of Ferrara was then contemplating the occupation of a part of the territory of Padua called the Polesino de Rovigo. To the senators of the Republic of Venice an offer was made by a good citizen, who undertook to aid in the protection of the commonwealth by training gratuitously two hundred men belonging to the town and neighbourhood of Sacco in the art of war. The citizen asked only that the senate would, if it accepted his proposal, grant two hundred arquebuses to the two hundred volunteers. The rumour of war was loud, the enemy was near at hand, and there were no fortresses to check his progress if he made hostile advance. The offer was opportune; the proposer of it, a certain Aldobello Bandarini, had seen service as a soldier, and he had many friends of mark who offered to be surety for his loyalty, lauded his character, and urged his suit. He did not ask pay for his services in drilling the recruits; the cost of arquebuses would be inconsiderable. The burnt-out innkeeper therefore obtained the authority of the senate to levy in his own neighbourhood two hundred recruits.

It was easy to find that number of rustics, or even of friends in better circumstances, glad to go out to drill with Aldobello, and to earn the legal right of carrying about the harquebuses sent from Venice. Aldobello set to work upon his little army. Bearing some ridicule at first, by diligent devotion of spare hours and holidays to the forming of lines, squares, and wedges, he had in a month or two made very obvious progress towards the formation of a troop reasonably disciplined. The volunteers of Sacco bought for themselves drums, and furthermore set up a flag. Doubtless they would also have done deeds of daring in the presence of the enemy, but most unluckily for them the murmurs of approaching war subsided.

If there was no money to be made out of the Venetian republic as captain of a band in actual camp service, the prudent Aldobello saw that he was altogether in a false position; he must make a further move towards the restoration of his fortunes. He therefore went to Venice, and having demonstrated the usefulness of the labour in which he had been engaged, petitioned that the senate would permit him to go out with his two hundred men as mercenaries, hiring their services to foreign princes, but always bound and ready at a call to return and do whatever duty was required for the Venetians. To make this request, he said, he was compelled by poverty, not urged

by avarice. Then there arose again the cloud of friends who trumpeted his value; and the senate being led justly to believe that the petitioner was a servant whose departure would inflict a loss upon the state, Bandarini was requested to remain in Sacco, and to receive payment for his labours with a monthly stipend. Immunities were also granted to his soldiers, and the world of the shrewd soldier-host began to brighten.

But at that stage of his progress enmities arose against him. Some jealous men detested the activity with which he pushed his fortunes; many were annoyed at him for taking labourers from steady tillage of the soil, marching them about to sound of drum in squares and wedges, and infecting them with military airs. Again, there was the sister of an important personage in Sacco deeply enamoured of the gallant captain, and she, by her misplaced tenderness, brought down upon his head the wrath of her relations. A tide of accusations suddenly set in towards Venice. The accusers, evidently knowing his weak point, complained to the senate that Aldobello Bandarini had employed the vantage-ground of his position for the extortion of substantial gifts and money from the people; that he was designing also to sell the harquebuses entrusted to him for the use of his troop, and to decamp with the money so obtained. Complaints of this kind were urged so strenuously, that they led to the

arrest of Aldobello, who was carried off one day in chains.

Again he was enveloped in the cloud of friends, and his exculpation was by them and by himself made so complete, that he came back to his own neighbourhood taller than ever. He was supplied with three hundred more harquebuses, and authorised to raise three hundred more recruits from volunteers in and about Sacco. He thus became a captain of five hundred; and so well did he perform his work with these, so earnestly did he enforce the extended adoption of his plan in other districts, that in no very long time Aldobello Bandarini was able to boast that he had been the founder of a complete militia system spread over the whole territory of Venice, and adopted from the Venetian pattern in adjacent and even in some distant states. He himself enjoyed the post of Tribune of the Militia, and a threefold increase of his monthly pay.

Having attained this point in his career, he was again burnt out of his abode, by the fire to which reference has been made in a preceding chapter. The business of the tribunate required a large house, and one night a boy asleep in a weaver's shop belonging to the premises upset a pan of burning charcoal with his foot. A conflagration was the consequence, destroying the whole house, and for a long time threatening to devour also the houses

in the neighbourhood. At this fire Cardan was present; out of it the members of the tribune's family were rescued with much difficulty, not indeed without some shock to the modesty of the youngest daughter. Lucia was the eldest of the daughters, and may then, perhaps, have been first seen by her future husband. An impression, otherwise fleeting, then made upon Jerome, may have been revived subsequently in his vision of the white-robed maiden who invited him to pass beyond the gates of paradise. Dream-figures are, however, unsubstantial, and resemblances between them and the daylight aspects of real flesh and blood are matters rather for the fancy than the judgment to lay stress upon.

By the second fire, the tribune of course was not ruined. His friends again came forward. Houses were again open for the reception of his children while he established himself in new premises, next door to the dwelling of the young physician and philosopher. Representations made at Venice procured from the senate a liberal order that Aldobello should be compensated for his loss by an immediate grant of six months' pay. Very soon afterwards his new neighbour, the doctor, courted Lucia, and the tribune, whose career in Sacco just narrated had all been comprised in the short space of seven years, consented to the wedding.

Marriage is, in a poor philosopher, a bold act. Jerome,

when he married the young girl¹ Lucia Bandarini, was extremely poor, yet because he had made a vow upon the subject, he refused to take with her the customary dowry². He was very poor, and there was no hope that in Sacco he would ever become richer, for Sacco was but a small town, and could ill support a doctor of medicine, even though he were dull, bland, and formal enough to impress everybody with a notion of his talent and respectability. Jerome had friends at Sacco, but he had spent all his available substance in their company, and since, in spite of the ravens on his house-top and the howling dog under his window, he had taken upon himself the responsibilities of marriage, it was necessary that he should obtain an income upon which the expenses that would certainly ensue could be supported.

In what town should he battle for his bread, if not in Milan? There he was at home; there his relations were, litigious and hostile certainly; there his friends ought to be; there only he was not a stranger. The friendship of the physician Buonafide had suggested Sacco to the young Cardan, when the physicians of his own town would not admit him to participation of their privileges. From Sacco he had already made one descent upon the capital, where he sought in vain, as we have seen, to

¹ "Duxi uxorem adolescentulam." De Ut. ex Adv. Capiend. p. 431.

² De Ut. ex Adv. Cap. p. 431 and p. 452.

overcome the hostility of the college and secure a footing for himself. He found then also his mother miserable and morose, lamenting her widowhood, and sulking over the discomforts she endured. Fatigue and disappointment brought him on that occasion to the gates of death. After seven months of deadly sickness, he had returned with broken health and broken hopes to Sacco. Now, however, he would try Milan again. The college could not be for ever obdurate, and he might live down the objection to his birth. Very soon after their marriage, therefore, Jerome and his wife, in February, 1532¹, removed to Milan. Jerome was then infirm in health, but his mother, Clara, had become, by that time, prosperous and cheerful².

The tribune, however, had expected nothing less than the departure of his son-in-law from Sacco. He submitted to the disappointment he experienced on this account with outward equanimity, but he was deeply grieved at heart. His regard for "the daughter of his good luck" was of a superstitious kind³. A few days before she quitted Sacco with her husband, a stone, put upon the fire by accident, cracked with a loud noise, and

¹ De Libris Propr. (ed. 1557) p. 13. "Valetudinarius, pauperque." The date is there misprinted 1533, but the correction is obvious enough.

² "In patriam denuo reversus, sospitem matrem inveni." De Consol. p. 75.

³ De Ut. ex Adv. Cap. p. 452.

scattered fragments over Aldobello's bedroom. Ever afterwards his mind recurred with horror to that evil omen; but ever after was not a long time, for he died before the year was ended. He died with another and a deeper grief upon him, caused by the wicked life of one of his own sons.

Cardan, when he returned to Milan, felt the want of his father-in-law's tact in winning good opinions that could be turned to gold. Still he had no friends, except the few who had become acquainted with his genius—men who knew how the young physician, so excitable, so superstitious, and so often seen indulging in a restless love of dice, spent solitary hours in abstruse study, cherished great thoughts, wrote books out of the pure instinct of the scholar, having no reason to believe that he could ever get them printed, and lived on in the unwavering conviction that he had within him power to secure immortal fame. Still the decorous college of the Milanese physicians shut their gates upon him¹. He was notoriously excluded from their body, and denied the right of practising legitimately, because he had not been legitimately born. Trouble weighed heavily upon him: poverty, nervous irritation, and the foul air of a town then never entirely free from plague, weakened still more the health of the young husband. His wife,

¹ De Libris Propriis (1557), p. 13.

sharing his cares, miscarried at the third or fourth month, and again a second time miscarried¹. No bread was to be earned at Milan. After a vain struggle, the newly-married pair determined to go out again into the world.

The anxious question of the choice of a new spot to which they might transfer their struggle with some hope of a good issue was decided by a series of arguments in favour of Gallarate². That is a small town twenty-four miles distant to the north-west from Milan; it does not at this day quite contain four thousand inhabitants. Jerome and Lucia went sick and weary out of the inhospitable capital, and settled in the country town of Gallarate when the trees were bursting into leaf³. They would gain, they said, pure air, and that was good for both of them. They would be able to subsist more cheaply, for the country prices differed greatly from the charges set upon provisions in the town, and there were even a few eatable things to be had for nothing. Cardan would be at liberty to practise there unhindered, for he would be beyond the jurisdiction of the hostile college, and he would be impeded by no rivals. Finally, there was one consideration above others which had indeed suggested Gallarate as the

¹ De Libris Propriis. Lib. ult. Opera, Tom. i. p. 98.

² These will be found, with other details here cited, in the section de Paupertate of the book de Utilitate ex Adversis Capiendâ, pp. 439, 440. The supposed connexion with the Castellione family is there explained very minutely.

³ "Circa Aprilis finem." De Vitâ Propr. p. 19.

proper home for a Cardan. The town was within one mile of a castle which the Cardans claimed as an ancestral hall. At Gallarate a Cardan might claim the respect that he was unable to command in Milan. As for the Milanese, the College of Jurisconsults had at first been nearly as hostile to Fazio the father, as the physicians were to Jerome the son, and in the next generation the same spirit was displayed¹. Now the Cardans claimed to be of the noble blood of the Castellione, who were at home near Gallarate, and in confirmation of their claim pointed to inscriptions upon the prothema of a church known to all the people of that little town. Jerome at first believed this claim to be a true one, and was not unwilling to be called Girolamo Castellione Cardano. He is to be found so named after his death by many writers, but in his lifetime he formally and conscientiously abjured the second name, because he convinced himself that he had no right to bear it². In April, 1533, however, when, towards the end

¹ "Nam et pater meus ut ab eo accepi, diu in ingressu coll. jurisc. laboravit, et ego ut alias testatus sum, bis a medicorum Patavino, toties filius meus natu major, a Ticinensi, uterque a Mediolanensi rejecti sumus." De Lib. Prop. (1557) p. 188.

² In the dedication to the revised edition of *De Malo Medendi Usu*. Since the name that he disclaimed is still commonly ascribed to him, it will be well to quote a part of his distinct repudiation of it. "Pudebat me inter reliqua, nimia pietate, patris siquidem verbis persuasus, qui hoc palàm, nescio quo ductus errore, affirmabat, Castilioneum nomen addidisse: cum certum habeam, revolutis omnibus publicis tabulis, majorum meorum, ad annum usque MCCCXL. qui ab hoc, ccvi. est, nihil mihi cum Castilioneis commune esse."

of the month, Jerome settled in Gallarate, by the advice of Giacomo Cardan, his cousin, resident upon the spot, he believed that he had a right there to be honoured, if not for his genius and learning, at least (scrofulous man as he was) for the good composition of his blood.

Pure air improved the health of the philosopher, and cheapness of provisions may have made it possible, by dinners of herbs, to live for a short time without too bitter a sense of want. They watched the gradual departure of the few coins they had mustered when he and Lucia prepared to set out on their venture¹. Their poverty began to border upon destitution: very few fees came in. Cardan began a treatise upon Fate¹, in which he showed that events frequently happen contrary to human wishes, and that such disappointments must be borne with equanimity. For himself, the knowledge of his strength was in him, and when he sat down at Gallarate to begin this treatise upon Fate—though there was no outward circumstance on which to found a hope that anything proceeding from his pen would ever make its way into a printing-office—his heart leapt out into the opening words concerning “All who hope that, by writing, glory possibly may follow to themselves².” At Gallarate he began also for Filippo Archinto, a clever young Milanese patri-

¹ De Libris Propriis (ed. 1557), p. 14.

² “Omnes qui scribendo gloriam consequi se posse sperant.”

cian, a book on astronomical opinions, and a treatise based upon Agrippa's occult philosophy, in which care was taken to avoid the introduction of fictitious marvels¹.

But Cardan's daily life was tortured by the morbid ingenuity of superstition into a long course of experience in magic. Every sight, sound, or smell that was unusual, was likely to be received as an omen by the credulous philosopher. He believed that he received secret monitions from a genius or guardian spirit²—sometimes they came from the spirit of his father. It was not strange to him that, when he contemplated marriage, the dog howled, and ravens shrunk together in his neighbourhood. The shadow of the warning spirit moved about its doors, and the brute animals gave token of the dread excited by its presence³. So men's minds are darkened when the shadow of a cloud floats over them, and they are moved against their will to joy or to delusive hope by a fresh outburst of the sun; so can gems also lose their light, and metals lose their lustre. Why, asked Cardan, should he enjoy the favour of especial warnings? Was it because, although hemmed in by poverty, he loved the immeasurable truth, and worshipped wisdom, and sought justice, that the mystic presence taught him to attribute all to the Most

¹ De Sapientiâ, &c. p. 423.

² De Vitâ Propriâ, cap. xlvii. More will be said of this hereafter.

³ Ibid. p. 263.

High? Or did the spirit come for reasons known best to itself? Again, why were its warnings so obscure—why, for example, did it sometimes become manifest by noises that he was unable to interpret? He could not answer these questions, but he believed that the spiritual communications were made wisely, and lost significance by passing through the dull wall of the flesh into a mind not always fitted to receive them¹.

After his twenty-sixth year, Cardan was often troubled by a complaint, common to most men of his organisation, a frequent ringing in the ears. He received this as a supernatural endowment². By the ear in which the sound appeared to be, and by the manner of the sounding, he knew, he said, in what direction and in what way men were talking of him. He believed also that his presence acted as a preventive of all wounds, and that no blood could flow from wounds inflicted in his presence³. The former opinion he may have justified by the fact, that in those days of violence he had escaped the sight of bloodshed in the streets; the latter belief he founded on a single circumstance. Since he himself, professionally, opened veins, it was his further belief that in such instances the flow of blood was owing to a special dispensation. Cardan embraced and amplified the whole

¹ De Vitâ Propriâ, cap. xlvii. pp. 264, 265.

² Ibid. pp. 178, 179.

³ Ibid. p. 163.

body of the superstition of his age, yet it may be said of him, more truly perhaps than of any one of his contemporaries, that he embraced and amplified also the whole body of its learning.

While struggling unsuccessfully in Gallarate, breathing the fresh country air, and able to satisfy no more than the wants of nature in the simplest way, Jerome's health steadily improved, and Lucia, who did not again disappoint his hopes, gave birth to a son on Thursday, the 14th of May, in the year 1534¹. The child resembled most its grandfather, for it had small, white, restless eyes, and a round back; it was born also with the third and fourth toes of the left foot joined together, and proved, as it grew, to be deaf in the right ear. It being at first uncertain whether the boy would live, it was baptised on the succeeding Sunday, between eleven and twelve o'clock, by the bedside of its mother, all the household being present, except a famulus. Then, because the day was warm and sunny, they had drawn aside the curtain from before the window, and had thrown the window open to admit the light and air. And at the moment when the child was lifted from the font or basin, chris-

¹ De Libris Propriis (1557), p. 22. "Cum vero parum esset mihi eo eunti, totum tamen illud parum consumptum erat. Sed valitudo restituta, viresque confirmatæ, et filio auctus eram." See for date of the son's birth, and the account of his baptism, De Vitâ Propriâ, cap. xxxvii., and especially the last of the three books De Libris Propriis. Opera, Tom. i. p. 98.

tened by its name of Giovanni Battista, there flew into the room a mighty wasp.

This was portentous, for the wasp was larger than wasps should be at that time of year, nor, reasoned Cardan, do they usually enter houses till July or August. All watched to see the issue of the omen: the anxious father, whose sense of mystery was so fine that he had found something supernatural even in the smell of his own body, perceived that this was not a common wasp. Hurting no one, but alarming all, it flew twice in a circle round the bed, but from its third flight darted back towards the window. There, however, instead of flying out into the open air, it dashed into the curtain, and, becoming entangled, made so loud a noise, "that you would say," writes Cardan, "a drum was being beaten. We ran to it, nothing was found." The portent had vanished; there was no wasp to be seen; and yet we are told that it could not have escaped unnoticed through the window while they were all watching it attentively. It was agreed by the whole party that this wasp was a revelation. All coincided in opinion that the life of Jerome's first son would be short, that he would be garrulous, and that he would be cut off by a sudden death. So much Cardan predicted, and the vital part of the prediction was fulfilled, how terribly no wasp or planet could have taught the father to suspect. If griefs ever send heralds out before them, there was a grief advancing

by slow marches to possess the spirit of Cardan, great enough to be worth announcing by a dozen heralds.

So, declared the victim after the event, it was announced. The dream of the shut gate of the paradise he quitted to embrace a white-robed maiden foreboded no bad wife to him, it pointed to his son¹. A knowledge of the mighty grief for which the way was opened by his marriage, caused the shadow of the tutelary genius to haunt his doors when he slept for the last time alone at Sacco. So such things were afterwards interpreted. At Gallarate, Jerome, in spite of all warnings, ignorant of the future, and by no lore able to divine the way to larger dinners, wrote much and ate sparingly. He bravely bore his poverty, and knew that he should work his way to fame.

In addition to the writings that have been already mentioned, he was turning into Latin his treatise upon games, and making slow progress with his analysis of the contradictory opinions of the doctors. But he consumed much time in seeking the relief of music for his cares, and relief to his pocket from the dice-board², for he was slipping, when his son was born, every week lower down into an abyss of hopeless

¹ "Somnii interpretatio non in puellâ desiit sed in filiis vim suam ostendit." De Vitâ Propr. cap. xxvi. p. 98.

"Annus erat trigesimus tertius exactus, cum ludis et musicâ ævum consumpseram, nec interea quicquam egregii inveneram aut perfeceram. Siquidem libros de Fato et librum Ludo latrunculorum, paulo plus quam inchoaveram." De Libris Prop. Lib. ult. Opera, Tom. i. p. 100.

poverty. After his son's birth, he struggled on against adversity for five more months in Gallarate, and at the end of that time gave up his position in the little town, not upon deliberation but compulsion. He and Lucia, in all the nineteen months¹ of their abode at Gallarate, had earned scarcely forty crowns²; and when they were at last reduced to absolute destitution, when he had lost at the gaming-table his wife's jewels, even his bed, they, having no other hope, determined on returning into Milan. Not, said Cardan with touching brevity, that there was anything to seek, but that there was something from which to fly³. He determined to quit Gallarate and plunge once more into Milan, as a man hemmed in upon a barren rock resolves to cast himself into the sea.

It was in October, 1534⁴, that Jerome, with his wife and child, came back to Milan beggared, and applied for shelter to the public Xenodochium⁵, the workhouse of his

¹ "Ubi mansi xix. mensibus." De Vitâ Propr. p. 19. He went in April, 1533, and returned to Milan in October, 1534.

² De Vit. Propr. cap. xxv. p. 94. De Lib. Propr. Lib. ult. Opera, Tom. i. p. 100.

³ "... non quòd haberem quod sequerer, sed quod fugerem" Ibid.

⁴ "Quasi e scopulo inaccesso me præcipitaturus in mare, decrevi in patriam redire anno MD.XXXIV, mense Octobris." De Lib. Prop. (1557) p. 23.

⁵ Details and references on the subject of the Xenodochia may be found in Zedler's Lexicon (Leipzig. 1749), vol. 60, col. 655—7. They took their name, and some of their spirit, from the Greek institutions dedicated Jovi Xenio. Much of their spirit was, however, purely ecclesiastical; they became sources of income to the clergy.

age. That was an establishment whose doors were open to the sick and needy and the houseless stranger, maintained from religious motives by various communities, in direct obedience to the admonition joined in Scripture to the question of the righteous and unrighteous—"Lord, when saw we thee an hungred and fed thee? or thirsty and gave thee drink? When saw we thee a stranger and took thee in? or naked, and clothed thee?"

Cardan, however, had an active friend in Milan. The same Filippo Archinto¹ for whom he had been writing his book on the Judgments of the Astronomers, had counselled him to come again to Milan, and took pains on his behalf. Filippo, the son of Christopher and Maddalena della Torre, differed in age from Cardan by not more than a year; he was a young man equally agreeable and learned, who, by love of pleasure, had been doubtless brought into contact with Cardan over the dice, and by the instinct of a kindred genius, and by love of learning, had been drawn into a state of intimacy with the poor, maligned philosopher. Archinto, full of kindness, wisdom, tact, and well born also, already in repute for oratory², had the promise of a bright career before him; and he did afterwards attain, as we shall find, by his own merits, to high distinction. In 1534 his influence sufficed

¹ De Consol. p. 76.

² De Vitâ Propriâ, p. 19.

to procure even for the despised Cardan a small appointment. He could not obtain for him authority to practise medicine, but he lost no time in endeavouring to make him independent of the college. Under the will of a deceased citizen named Thomas Plat, a small sum had been left to be applied yearly to the payment of a lecturer on geometry, arithmetic, and astronomy; the lectures to be delivered upon holidays. The office of lecturer under the endowment of Thomas Plat happened then to be vacant; and not many days after his return to Milan, the appointment was by Archinto's influence conferred upon the learned graduate in medicine, Jerome Cardan¹. To the same kind friend he was indebted for the introduction to a few other sources of income, very trifling indeed; a deduction had been made from his small salary of seven crowns a year by the prefects of the Xenodochium², in whose gift the office was. His yearly receipts from all sources would not exceed fifty crowns, but he was a philosopher, and he and Lucia were quite able to subsist on that.

Not unwilling at the same time to earn, if possible, a better income, the new lecturer endeavoured to increase the fees paid for attendance on his courses, by rendering

¹ De Libris Propriis (1557), p. 23. De Libris Propriis. Lib. ult. Opera, Tom. i. p. 100.

Ibid. De Ut. ex Adv. Cap. p. 546.

them as attractive as he could. With this view he occasionally substituted geography for the less popular details of geometry, and lectured upon architecture instead of arithmetic¹. The mind of Cardan being thus set actively to work upon five subjects, was soon engaged on books allied to them in character; and five works were reckoned afterwards by the philosopher himself as the direct result of the appointment now in question.

Jerome then was in this way established with a slender income. Among the discouragements that pressed upon him from all sides in Milan, he had not lost faith in his future. He was thirty-three years old. He had been practising medicine for eight years, and had found himself at the end of that term, without patients and without character as a physician, utterly poor. He had been writing books from boyhood. Some of his manuscripts had been read by a few educated friends, and by one or two of them appreciated; others had perished through domestic mischances, others had been lent and carelessly mislaid, none had been printed. Yet Cardan was curious in pens, and because he regarded them as the keys that would enable him one day to open a door for himself into the temple of Fame, he wrote on with unflagging industry. He breakfasted on barley-bread and water, and

¹ "Ut vero magis audientes allicerem, pro Geometriâ Geographiam, pro Arithmeticâ Architecturam docebam. Hinc occasio nata conscribendi quinque volumina."

compared with the relish of an epicure the respective merits of nasturtium leaves, rue, parsley, and other herbs, as economic means of making bread and water savoury¹. At the same time he worked on with a restless energy, and knew that he should win the prize on which his heart was set, not wealth for a few years, but renown for centuries.

In spite of all his eccentricities and errors, within a rude exterior the disputatious and excitable young scholar had shut up a fine spirit and a tender heart. His ethical writings uttered throughout life the language of a spiritual nature. The unique candour with which he publishes his faults—often such faults as many men commit and no man names—though he may have been stung to it by a contempt for the hollow affectation of respectability that would have hunted him for ever as a bastard, had he not been strong enough to stand at bay, and though such candour may sometimes be scarcely sane, yet it bespeaks a sturdy truthfulness, an innate generosity that we must honour. Jerome was a faithful son, and to the world at any rate an uncomplaining husband. There remain but slight and accidental traces of any discord between him and Lucia; of his wife's father, mother, brothers and sisters, he speaks with domestic kindness; and though he accuses justly his own errors as a father, it will be found

¹ De Ut. ex Adv. Cap. Liber de Paupertate.

hereafter that his tenderness towards a miserable child forms one of the main features of his life. He claims for himself, and that also justly, the merit, that if he attracted to himself few friends, he never broke a friendship, and that if he found himself forsaken for a time by one of those few friends, he never used unkindly, whether as public accusation or as private taunt, knowledge obtained in confidential intercourse¹. He had a rugged love of truth and justice; he remembered benefits, and when affronted could afford deliberately to abstain from seizing any offered opportunity of vengeance. He governed his pen better than his tongue, and carefully restrained himself from carrying into his books the heat he could not check in oral disputation. He left enemies unnamed, and though he now and then is found devoting some impatient sentences to writers who had treated his opinions rudely, yet it seems at first sight absolutely wonderful that a man so sensitive and so irascible, so beset by harsh antagonists as the weak-bodied Jerome, should have filled so many volumes with philosophy and so few pages with resentment. The wonder ceases when a closer scrutiny displays the difference in intellectual and moral weight between Cardan and most of his opponents.

¹ De Vitâ Propr. cap. xiv. pp. 67, 68. And for the next facts.

CHAPTER VIII.

LIFE AS A LECTURER IN MILAN—HOW JEROME AT LENGTH FOUND A MAN WILLING TO PRINT ONE OF HIS BOOKS—THE ISSUE OF THAT ENTERPRISE.

ARCHINTO, again, was perhaps the friend who obtained for Jerome the appointment of physician to the body of Augustin Friars; not a lucrative post, since the receipts from it are included among the other trifles which, together with the post of lecturer under the Plat endowment, made up an income of not more than fifty crowns¹. Although denied authority to practise by the local college of physicians, Cardan was not the less Doctor of Medicine by right of his degree, and did not scruple to exercise his profession whenever he found any patient willing to consult him. The prior of the Augustines, Francisco Gaddi², a shrewd, severe man, whose influence over the members of his order made him an

¹ De Libris Propriis. Lib. ult. Opera, Tom. i. p. 100.

² De Libr. Prop. (ed. 1557) p. 123. De Vit. Propr. cap. xl. p. 193.

object of consideration among rival princes, had for two years lived in a bilious, melancholic state, afflicted with a skin-disease, and unrelieved by the advice of the most distinguished Milanese physicians. Jerome, when first admitted to attend upon the monks, found the prior cherishing despondent, though unfortunately distant, hopes of a release by death from all his fleshly troubles. By the good advice, however, of the young physician, or perhaps only by good fortune, Gaddi recovered. In six months he was well, and he was the first man of any note upon whom Jerome had been allowed to exercise his art.

Prior Francisco Gaddi belonged to a famous family in Florence, founded by three generations of painters—Gaddo Gaddi, who worked in the thirteenth century; Taddeo, his son; and his grandsons, Agnolo and Giovanni, in the fourteenth. The continuous labours of those men procured for their house wealth and fame, so that they left to their heirs a palace richly stocked with works of art, and a distinguished place among the noble families of Florence. A Francisco Gaddi was, in 1493, the Secretary of the Florentine Republic. The Prior Gaddi, settled at Milan, did not cease to be grateful to his health-bringing physician, though it was in his power to give him very little worldly help. Nor was it in Cardan's power to administer more potent aid to the scheming and ambitious monk in his last illness than a consolatory

letter¹. Gaddi, who, as we have seen, fell among princes, ten years afterwards died in a dungeon, wretchedly.

Ludovico Madio was another friend to whom Cardan was introduced by the warm-hearted Archinto. Of Madio we know only that he was kind, and that the young struggler obtained from him ready help in times of need. Girolamo Guerrini, a jeweller, was at the same time an associate from whom Jerome obtained much curious information, and from whose experience he was able to enrich some of his books².

The works upon which Jerome was occupied in the months immediately following his return to Milan, were³ a volume suggested by Sacrobustus upon Spheres, of which he wrote nine or ten books; a little work on Circles; three dissertations founded on the first and seventh books of Ptolemy's Geography; and one on the elements of Euclid, which grew in after-years till it contained three books, then was enlarged to seven, then to nine, then to fifteen, when it contained more than forty new propositions.

Very soon after his appointment as a lecturer Jerome had taken a house, and received his mother as a portion of his family. Since Clara had been hitherto depending

¹ The letter is included in his published works. Cardan relates the fate of his friend in the last of the three books *De Libris Propriis*. Opera, Tom. i. p. 107.

² *De Vit. Prop.* p. 69.

³ *De Sapientiâ*, &c. p. 424.

on her own means of subsistence, it is probable that she was able to contribute a small fund towards the house-expenses. If she paid nothing, Jerome had indeed very great need to increase his income, or to make the most of fennel and nasturtium in his diet, for the household that depended on him for support consisted of himself, his wife, and infant son, his mother, a female friend, a nurse, a pupil (Ambrose Bizozoro, an ingenious, bold fellow, who became afterwards a sea captain), a maid-servant, and a she mule¹. Upon the mule he rode abroad, and it is probable that in so doing he consulted less the received prejudice in favour of a doctor who can leave a horse or carriage waiting at the door, than the necessities of a body at all times infirm.

For the next five years Jerome was distressed, not only with bodily infirmities, but with poverty at home and unrelenting rivalry abroad. The very patients who had profited by his attentions often joined the cry against the poor physician-lecturer, whose eccentricities were more apparent to the vulgar than his genius. After Cardan had healed Bartholomæa Cribella, a noble matron, and her brother, the perverse brother was loud in ridicule against him². But the physician-lecturer solaced himself at home with music and with dice, indulged as he could his taste for expensive writing materials and for rare books, read Aristotle and Plotinus for his pleasure, or his

¹ De Ut. ex Adv. Cap. p. 431.

² De Lib. Propr. Lib. ult.

favourite Italian poets, Petrarch and Pulci¹. Above all, he continued to cover many sheets of paper with the written workings of his mind, and obtained consolation from his dreams of immortality.

Dreams really, not wild waking thoughts, became at that time guides and helpers to him. Being interpreted with admirable ingenuity into such meanings as accorded with his nature, they became prophetic. About four months after his return to Milan from the unsuccessful struggle in Gallarate, Cardan reckoned that he first received communications of the future in his sleep¹. Then, as he believed, the dream-power commenced in its full force. Before that time, except in the case of the dream that heralded his marriage, his sleep had scarcely been disturbed with visions worth interpreting. As he got higher up the hill of life such mists increased about him.

His first dream, of the great series, was of the weary hill of life itself. It was the following². At the close of the year 1534, when all was black about him in his worldly state, and all was looking blacker day by day, Jerome Cardan dreamed in the early dawn that he was running towards the foot of a mountain that stood to the

¹ De Vitâ Propr. cap. xviii. p. 80.

² De Libris Propriis (1557), pp. 21—26. De Libris Propriis. Lib. ult. Op. Tom. i. pp. 100, 101. For the two succeeding dreams and their interpretations.

right of him, and that he ran in company with an immense multitude, of every rank, and sex, and age; there were women, men, old men, boys, infants, poor men, rich men, clothed in many fashions. Then he asked, "Whither are we all hastening?" One of the company replied, "To death." In great terror the dreamer began then to ascend the mountain slope, drawing himself up by clinging to the vines through which he went, and with which that part of the mountain was all covered. They were dry vines with sere leaves, such as are seen in autumn when the grapes have all been gathered. He ascended with much labour, for the mountain at its base was steep, and as he looked back on his way, he saw that all the vines among which he had passed, no longer dry, were green and full of blossom. In a little while the ascent became easier, the mountain was less steep, and the dreamer hurried on. When he came near the top, he found the ground there barren, and across bare rocks and broken stones he was still pushing forward, as if by a strong impulse of the will. Suddenly he was on the point of plunging into the dark maw of an abyss, a chasm so huge and terrible, that, as a waking thought, it remained for the next thirty years a thing to shudder at. The dreamer, however, checked himself in his career, and turning to the right, wandered across a wintry plain, covered with heaths, timidly, as one uncertain of his way.

So he came before the porch of a sordid peasant's hut, thatched over with straw, and reeds, and rushes. There came out of the porch a boy, as of about twelve or fourteen years old, with pale features, and wearing an ashen-coloured cloak; he, taking him by the right hand, led him in, and as they passed into the hut the dream was broken.

Thousands of men have such dreams, and think no more of them. "I understood from this dream," says Cardan, "that I was destined to strive after immortality." He felt that he had a work to do in the world, that he was sent to do it by the Deity, whose hand so often had been visibly stretched out for his protection. All men, said the dream to him, run to death and to oblivion. The mountain was the Mount of Virtue, full of life, but without pleasures, as was signified by its being planted thickly with vines, but without fruit. The ascent of that mount is at first laborious, but afterwards becomes comparatively easy. The vines blossoming behind him—what could they signify? Certainly glory after death. The way over the wintry heaths might signify an easy close to life. What the boy might portend, however, Jerome could not then tell. Years afterwards, he believed that he had found him in a pupil, by whose face he was reminded of the dream.

Not long after this vision of the mountain, Jerome

dreamed that he was alone in the moon, naked, and disembodied. There, in his solitude, he heard only the voice of his father, and it said to him, "I am given to you by God as a guardian. All here is full of souls, but you do not see them, as you do not see me; nor do you hear them, for to the others it is not permitted to address you. You will remain in this heaven for seven thousand years, and as many years in single orbs, until the eighth. Afterwards you shall come into the kingdom of God."

So worked the restless brain of the young student when he and Lucia had gone to rest, she thinking of the next day and its cares, he of the next age and its glories. This dream of the moon had its own suitable interpretation. His father, Cardan said, was his tutelary spirit. His spiritual progress through eight planets, indicated, as he said afterwards, with remarkable accuracy, the different studies upon which he was to occupy his mind. The Moon meant grammar; Mercury, geometry and arithmetic; Venus, music, divination, poetry; the Sun, morals; Jupiter, nature; Mars, medicine; Saturn, agriculture, knowledge of herbs, &c. There were seven planets indicating studies to which he did really afterwards devote his mind, and the eighth planet held the scraps of knowledge that could be referred to none among the seven. Gleanings which the student picked up in such fields of science as he did not himself undertake to cultivate,

formed the last of the eight masses of study that were represented by his spiritual life in the eight stars.

In the succeeding year (1535) Jerome read through the works of Cicero, word for word as he tells us¹. This task he had probably set himself, with a view to the improvement of his Latin style, his scholarship being at that time far from accurate. He had picked up Greek, French, and Spanish, without much care for learning them grammatically, and in Latin he wrote rather by tact and impulse than by rule. His labours were in some respects very much hindered by the badness of his memory², and they were also partly hindered, though on the whole more helped, by the restlessness of disposition which made him, in study as in action, prompt always in decision and impatient of delay. The same impatience made him sharp in argument; but while, as it has been already said, men surprised at his acerbity avoided wordy warfare with him, Jerome took no credit to himself for his unchallenged honours as a disputant. It was a property, as he affirmed, belonging to him which he could no more change than a stone could change its character. "Surely," he said, with a happy stroke of humour, "it is no matter of glory to the cuttle-fish that he can make the dolphins fly³."

¹ De Libris Propriis. Liber ult.

² De Ut. ex Adv. Cap. Lib. ii. p. 277.

³ De Vit. Propr. cap. xiii.

Quick-witted, versatile, and candid, Cardan rarely suffered himself to be deceived into a respectful treatment of his own defects. Of his love of dice the best he could say in excuse was that "Philosophers may play, but Wise Men are as kings enjoying higher pleasures¹." By skill in dice he even eked out his subsistence in the first days of his poverty at Milan, and perhaps earned more at the gaming-table than at the bedside; for on the hint of his rivals, it was soon a subject of discourse in Milan—the most frivolous of scandal-tattling cities², as he found reason to call it—that Cardan was too intent on mathematics to be very conversant with medicine. In his office of lecturer he had then been interpreting Vitruvius³, and it was quite certain that his studies in connexion with his duties under Thomas Plat's endowment were of a kind to be regarded by the jealous public as incompatible with the thoughts which are supposed to revolve eternally in the minds of practising physicians. A physician even in our own day cannot acquire reputation in any branch of literature or science that does not bear directly upon tongues and pulses, without forfeiting a portion of the practice that he might have gained with ease if he had been a duller man, or if he had but hidden

¹ De Paupertate.

² "In urbe omnium nugacissimâ, et quæ calumniis maxime patet."
De Libr. Propr. (1557) p. 32.

³ De Sapientiâ, &c. p. 425.

some part of his light under a bushel. Cardan's hope of fame and profit as a doctor was being undermined by the reputation he acquired as an ill-paid teacher of geometry, arithmetic, geography, and architecture. It is easier, he writes, to prop a falling house than to rebuild it after it has fallen. He resolved, therefore, to support his sinking reputation in the art of medicine by writing a work strictly professional. Following up the notion with his usual impetuosity, in fifteen days he wrote two books on the bad practice of medicine by the physicians of his day—*De Malo Recentiorum Medicorum Medendi Usu*¹—not a propitiating subject, certainly. A small tract was written about the same time on the noxious ingredients in simple medicaments. These Cardan put aside, or lent to friends in manuscript, for he was unable to pay a printer, and knew no one who would bear the risk of publishing what he had written.

When, in the same year 1535, the academic session closed, Jerome's young patron was about to leave Milan. In that year had died Francisco Sforza, Duke of Milan, and Philip Archinto had obtained so much esteem and trust in his own town, that he was selected by the magistrates as the most fit person to accompany Massimiliano Stampa, their ambassador to the court of Charles V. upon

¹ De Sapientiâ, &c. p. 425. De Lib. Prop. (ed. 1557), where he says that he wrote the book, "ut etiam in Medicinâ aliquid scire viderer."

the occasion. Francisco, the last Sforza, he whom Cardan had encountered among gamblers, died at the age of thirty-nine. Expelled from home by the French, his childhood had been spent in Germany. In 1521, the Emperor and Pope together had resolved upon his re-establishment. The French resisted their design until the overthrow at Pavia, but after that decisive battle, Charles had delayed the execution of his promise. Then Francisco had joined the Italian league, had been betrayed by Marquis Pescara, besieged in Milan by the emperor, and reduced in 1526 to the abandonment of his designs. In 1529 the Emperor and Pope had agreed to receive him again into favour, and had allowed him to buy of them his dukedom with a large sum of money. From that time he had given little trouble to his master, but in 1534 he had beheaded a subject named Meraviglia, who was supposed to serve the French interest at his court, and troubles might have followed had the duke not died in the succeeding year. He was a credulous, weak man. Leaving no children by his wife Christina, he bequeathed his dukedom to the emperor. This last fact was the chief subject of the embassy to which Archinto was attached. The young noble who had shown in Milan so much promise of a prosperous career, a man of the world in the true sense of the term, genial, prompt, and learned, found his opportunity when he was sent into the presence of the

emperor. Charles liked him, and sent Stampa back alone, retaining Cardan's patron in the character of secretary¹.

It will be convenient here, in a few words, to tell the fortune of Archinto. In the next year, 1536, he was created a Count Palatine; afterwards, when he was sent to Rome on imperial business with Paul III, the Pope, who thought him a man worth acquiring for the Church, persuaded him to consult his interests by taking holy orders. He did so, and was promptly appointed Apostolic Prototary and Governor of Rome. In 1539 he was ordained Bishop of Borgo San Sepolcro; in 1546 he was transferred to Saluzzo; and after having served as vicar to four Popes, came back to his own town as Archbishop of Milan, in 1556. Two years afterwards he died, and being dead, his life was written by Joannes Petrus Glussianus in two books.

Archinto then, in the year 1535, being about to leave Milan with Massimiliano Stampa, soon after the close of the academic session, Jerome employed his vacation very busily in writing certain treatises, which Archinto promised to take for him, and commend, as well as he was able, to the favourable notice of the Pope². Cardan had heard of the

¹ Josephi Ripamontii Canon. Scalens. Chronistæ Urbis Mediolani, Historiæ Patriæ, Libri x. Med. 1641, p. 698. In the succeeding pages is a full account of the manner in which Archinto passed into the service of the Church, and of his subsequent career. His success, says Ripamontius, was so great, that "*ad consilia negotiaque omnia adhibebatur, et gravissimi cujusque consilii author ipse erat.*" Ibid. p. 704.

² De Sapientiâ, &c. p. 425. The same authority will cover the remainder of the paragraph.

Pope's liking for astronomy, and therefore took pains to suit the humour of his Holiness with two books, of which one was a Supplement to the Almanacs, the other was a sensible technical work, with a title that might be considered startling—"Emendation of the Celestial Movements, by Jerome Cardan." They were both written in fifteen days, and duly taken by Archinto; but they produced no supplement to the poor scholar's income, or emendation of his daily fare. He spent the other two months of his holidays in the preparation of an elaborate work on Arithmetic, which occupied his mind so thoroughly that problems and solutions filled his very dreams. Thus even in his dreams he found hints for his book; and the subject being thus suggested to him, an inquiry into the subject of dreams, and a treatise upon them, closed the year.

Cardan was thirty-five years old, and up to this date, though an indefatigable author from his youth up, not a sentence of his writings had been printed. At last, however, the great day was near when for the first time he should talk to the whole world in print, and ascertain whether he could really make it worth men's while to pay attention to his talking.

Mention was made in a former chapter of a college friend, Ottaviano Scoto¹, to whom Jerome had lent some

¹ De Libris Propriis (ed. 1557), p. 29. De Lib. Propr. Lib. ult. Opera, Tom. i. p. 102, for the succeeding narrative.

early essays, and who had lost them. He was a pallid youth, one of the few old companions whose friendship Cardan afterwards desired, avoiding richer and more powerful associates. Octavian paid absolute homage in his friendship to the stronger mind of Jerome, adhered to him through good and ill report, believed implicitly in his great talents, and loved him with the utmost warmth of youthful friendship. By the death of his father in Venice, this believing friend, Ottaviano Scoto, became master of a printing-office.

Then Cardan dusted his manuscript about the *Bad Method of Practice among Physicians*, and opened his heart to Scoto. If he could only prove to the Milanese that he was not the worse physician for his knowledge of geometry, a better day might shine into his chambers. If he could only print his book! The distant hope of a great good, to attain which the poor philosopher had sighed so long in vain, seemed but a trifle in accomplishment. "What you propose is a light matter," said the sanguine printer, who took cheerfully all risk of publication on himself. "And if," he added, "I knew that I was to lose all my outlay on it, I would still print the volume for your sake. I think, however, that it will be no great venture." The book—*De Malo Medendi Usu*—was therefore printed at Venice, in 1536, Scoto alone correcting the proofs, because there were no ready or

cheap means of communication between Venice and Milan.

It was a clever book, denouncing seventy-two errors in practice. Such errors were the total denial of wine to the sick¹, the denial of fish, and the allowance of flesh to people sick of fever², the belief prevalent in many quarters that there could be found one mode of cure for all diseases³, and the doctrine that no patient should be bled while suffering under acute pain⁴—a woful sentence to some—sentence of death, for example, to the man tormented by the agonies of an acute inflammation of the peritoneum. He taught that to do nothing with physic was much better than to do too much, and urged the great number of things that have to be considered before a man desiring to act rightly should set his hand to a prescription⁵. The book was clever, and was of a kind to meet with rapid sale.

It did sell rapidly, but its appearance plunged the luckless author into new distress. It had not been long subject to criticism before Cardan was made aware of so many petty faults in matter, style, and grammar, that any pride he may have himself had in his work when he sent

¹ De Malo Medendi Usu (Venet. 1536), cap. vi. p. 13.

² Ibid. cap. x. p. 18.

³ Ibid. cap. xiv. p. 22.

⁴ Ibid. cap. xl. p. 48.

⁵ So he defines the spirit of the book in his second work, De Libris Propriis, p. 29.

it to the press was altogether humbled¹. Many years afterwards, when he re-issued the work with the number of its sections increased to a hundred, having spent twenty-eight days in correcting what he had written in fifteen, he refers in this way to its first appearance: "I blush to acknowledge that there were more than even three hundred blunders of mine in this book, exclusive of misprints. And I long since had it in my mind to blot it out from the number of my offspring: but to that course there was the objection of a certain special usefulness connected with it, by which it had been made so saleable that in its second year the printer would have issued it again to the public if I had not resisted his desire."

But the sound part of the book which, in many points, condemned and opposed prevailing practices, of course received from the doctors of Milan, hostile enough already, the strongest condemnation and opposition. The cry was raised against its author that he did not practice his profession, and it was asked, how then could he presume to teach it to the men who did². The unlucky title of his book was quoted constantly against him, and if anybody thought of seeking medical assistance from Jerome

¹ See the dedication to the revised issue of the book, Opera, Tom. vii.

² "In artis autem operibus negligenter, cur erat ut alios docere vellem." De Libris Propr. (ed. 1557) p. 29. "Et modum alium mendendi observans ex titulo libri nuper edito, jam propè ab omnibus habebat," p. 32.

Cardan, it could be urged against him not only that he was not recognised by the local College of Physicians, but that he was an eccentric man who would imperil the lives of his patients by rash crotchets of his own. He was a poor man, maddened by poverty, struggling against men high in repute and rich. He was a young man complaining of his elders¹. Rivals and enemies looked grave and shrugged their shoulders, merely pointing out that the author of a book "On the Bad Practice of Medicine in Common Use" might have a better practice of his own; but from the very title of his work it was obvious—as the public generally could but admit—that he opposed singly the experience and learning of the whole profession. He, too, a young man, who, as they all knew, was a lecturer upon geography, geometry, arithmetic, and architecture.

¹ De Libris Propr. (ed. 1557) p. 30. I must quote part of his own account of the misfortunes that attended this first literary venture:—"Sed et longè aliter commodum, quod expectabamus ex illis libellis, nam non parvam retardationem attulit ad gloriam in arte consequendam. Nacti nanque æmuli ex argumento libri occasionem, dicebant, Nunquid modo dubitatis hunc insanire? aliumque medendi modum aliamque, quàm nos, medicinam profiteri, cum in tot rebus ritum nostrum accuset? Itaque meritò, ut dicebat Galenus, qui tot insanientibus contradicere niterer, insanire visus sum: cum enim necessarium esset me vel illos aberrare quis mihi crederet contra tot probatos usu viros, divites, senes magnâ ex parte, nec mediocriter eruditos, cultos vestibus, ornatos moribus, facundiâ vulgari præditos, amicis atque affinitatibus potentes, aurâque populari in sublime elatos, inde, quod maximum erat, tot artibus ad cavendum ad fallendumque instructos. Ego vero pannosus, ita ut mihi non conveniret illud, Vestibus inquam homini surgit bona fama decusque. Itaque egregio hoc meo invento pene fame perii."

And this was all that had resulted from the book written and printed with so much hope of a happy issue. It was to have led the way to sick-beds, by the proof it would afford that he who wrote it had thought soundly and deeply as a practical physician. It was to have brought to him the first honours of public authorship. "But where I looked for honour," said Cardan, "I reaped nothing but shame¹." The book damaged him in every respect, but one. It had satisfied the printer, who derived a profit from its sale. It had been bought to be abused; the printer rejoiced, while the author grieved. Ottaviano Scoto, satisfied with his experience, held his type still at the service of the poor philosopher, and so at any rate one difficulty had been overcome.

¹ De Libris Propriis. Lib. ult. Opera, Tom. i. p. 102.

CHAPTER IX.

PHYSIC AND PHILOSOPHY.

A MAGPIE in the court-yard chattered more than usual on the last day of November, 1536. Cardan knew, therefore, that something was about to happen. He expected news or an arrival, and was not deceived, for on the evening of that day Lodovico Ferrari was brought to his house as a famulus¹. Lodovico, then a boy of fifteen, was brought by his uncle Vincent from Bologna. The servant, full of talent, soon became a pupil and a friend. He, of all Cardan's pupils, was the one who lived to be afterwards the most distinguished, inasmuch as the natural bent of his mind easily caused him to share Cardan's own very decided taste for mathematics, and he had power enough as he grew older to think onward for himself, and earn for his name—though he died young—a permanent place in the records of that science.

Not very long afterwards, it happened that there came to Milan a tall, lean man, with a sallow skin and hollow eyes, awkward in manner, slow in movement, sparing of

¹ De Vitâ Propriâ, p. 214. Vita L. Ferrarii Bononiensis, a H. Cardano Descripta. Op. Tom. ix. p. 568.

his words, a great mathematician. He was a native of Brescia, and his name was Zuanne da Coi¹. He brought word to Milan that there had been discovered two new algebraic rules, for the solution of problems of a certain kind that concerned cubes and numbers. "I asked," said Cardan, "by whom?" "By Scipio Ferreus of Bologna," he replied. "Who is possessed of them?" He said, "Nicolo Tartaglia and Antonio Maria Fior; but Tartaglia, when he came to Milan, taught them to me, though unwillingly enough." Then Jerome continues, "When I had thoroughly looked into those matters with Lodovico Ferrari, we not only made out the two new demonstrations, but discovered in addition a great number of others, so that I founded upon them a book on the Great Art." Of his skill in algebra Cardan was justly proud; it was the department of knowledge in which he displayed perhaps the most remarkable evidences of his intellectual power. One of his processes, upon which we shall hereafter dwell, is still known by his name in mathematics. The researches prompted by Zuanne da Coi had some influence, perhaps, upon the character of Jerome's second venture into print, which was a step towards that book of the great art about which much will hereafter be said.

¹ De Libris Propriis (ed. 1557), p. 36. De Libr. Prop. Lib. ult. Opera, Tom. i. p. 103.

His second publication did not, however, follow very rapidly upon his first abortive effort for success. There were other enterprises to engage his mind, and authorship did not appear to be a happy way of courting fortune. Towards the end of the year 1536—at about the same time when Ferrari came to him—he was invited to teach medicine publicly at Pavia, but declined the offer, because he did not clearly see from what source he was to derive a stipend¹. Soon afterwards, still in the same year, letters from his friend Archinto (to whom, of course, he had dedicated his first book) summoned him to Placentia, where it was hoped that he might find opportunity of pushing his fortunes by acquiring for himself the active good-will of Pope Paul III.² Archinto, however, had prepared the way for him in vain. An ungainly and plain-spoken philosopher was not the man to make way at a papal court.

It is worthy of remark, that those who would have recoiled most certainly from a mere clumsy cynic, men who had not unlearned the generousities of youth, who had come newly with fresh hearts and stirring minds into the market of the world, men like Archinto, were almost the only people who held out to the unrecognised philosopher their helping hands. Such a friend Jerome found at

¹ De Vitâ Propriâ, p. 19.

² De Sapientiâ, &c. p. 425.

Placentia in the young and handsome Brissac (Marshal Cossé), there serving as lieutenant to the King of France, and already famous for his gallantries¹. Brissac was four years younger than Cardan—a man delicate and beautiful, but agile and robust; at the siege of Naples he had singly taken prisoner a knight in armour, though he was himself on foot without the defence of casque or cuirass, having no weapon but a sword. Brissac had taste and scholarship, with a quick sympathy to feel the merits of Cardan; he therefore besieged Louis Birague, commander of the French infantry in Italy, with petitions on behalf of the poor scholar. The hopes of Jerome were excited very much, but there was nothing done.

He went home therefore to his family at Milan, resumed his harness as an unsuccessful and, so far as the Milanese College was concerned, illegal practitioner, wrote more books, prepared more lectures, and continued the instruction of his apt young pupil Lodovico.

Among the few patients whom Cardan attended, there was a certain Count Camillo Borromeo, whom he had cured of a serious disorder; but because Jerome declined to sit up a whole night with him when he was troubled with some other ailment, the mean-spirited count had carried his complaints about the town: "Therefore," says

¹ De Vitâ Propriâ, p. 20. "Erat enim Brisaccus Prorex singularis in studiosos amoris et humanitatis."

the offended physician, "I had left the man." But chancing afterwards to pass, he was called in to look at a sick nurse, whom in two days he cured; soon afterwards the count's only child, a boy of seven, being ill, Jerome was urgently invited to attend. Now it so happened that on the preceding night that dreamy sage had been troubled with a complex vision of a snake, which, as he thought, portended danger to himself. When therefore he went to Borromeo's house and found the child's pulse pausing after every four beats, he said to himself, though the disease seems light this boy will die. Having then written a prescription, which contained one powerful ingredient, and placed it in the hands of a messenger who was about to take it to a shop to be made up, his dream suddenly recurred to him. Its application was made very obvious by the fact that Borromeo having added a snake to his arms, possessed a country-house painted over with vipers. The boy will die, he thought, and as the present ailment seems to be so light, if it be found that any active drug has been administered, it will be said after his death that I have killed him. He therefore called back the messenger, and substituted for his first prescription another, containing only the most harmless ingredients¹.

¹ "Medicamentum quod vocatur Diarob, cum Turbit, propinare in morsulis decreveram: et jam conscripseram, et nuncius ad pharmacopolam ire cæperat, recordor somnii, 'Quiscio,' mecum dixi, 'ne hic puer moriturus ex signo præscripto. . . .'" revoco nuncium, qui non-

But he predicted to the mother the boy's death. Other physicians who were summoned spoke more hopefully, and after the death had really taken place, gratified their jealous dislike by secretly asserting that the mathematician had not understood the boy's complaint. They were unable, however, to say that his medicine had been of a kind to cause or hasten any fatal issue. So he avoided, through attention to the warning dream, great danger to himself, because if Count Borromeo had believed that the loss of his one child was caused by a prescription, he would certainly have killed the doctor who had written it. Many indeed at that time heard so much ill spoken of Cardan, that it appeared to them as though it would be but a just thing to kill him, if the law were not so indiscriminating as to protect even lives like his. Borromeo never ceased to alleviate his grief for his lost child by curses loud, frequent, and public, upon his physician. As for the general public of Milan, it had come to the conclusion that the Plat lecturer was mad, through poverty.

The luckless author, greatly vexed at the large number of misprints which had disfigured his first publication,

dum quatuor passibus ab ostio aberat, dico deesse quippiam quod addere vellem, lacero priusfactum, clam, et aliud scribo è margaritis, osse monocerotis, gemmis. Datur pulvis evomit," &c. De Vitâ Propriâ, p. 148. For some of the details in the text, see also De Libris Propriis (1557), p. 31, and Synesiorum Somniorum, Lib. iv. cap. 4. Opera, Tom. v. p. 724.

issued a new example of his skill as a philosopher, printed at Milan under his own eye, either in the same year 1536, or in the year succeeding¹. It was printed also at his own expense, and as he was in no condition to sustain a heavy charge, it was but a work consisting of five leaves, upon judicial astrology. His neighbours cried him down at once for an astrologer; his little venture was again unlucky.

A touch of superstition belongs also to this as to every period of Jerome's life. It happened in the year 1536, about the month of July², when he lived by the Porta

¹ De Libris Propriis (ed. 1557), p. 40.

² De Vitâ Propriâ, pp. 223, 224. Cardan tells the story at more length. As I desire the few quotations in these notes not simply to justify the text, but also to provide for some readers means of obtaining glimpses of Cardan himself, I quote this little narrative in his own words. The tone of natural credulity about it is particularly striking. There is a great deal of agreeable *naïveté* in Jerome's nonsense; it had more in it of the sick wit of a child than of the gloom of full-grown superstition. "Ergo anno MDXXXVI. cum habitarem in P. Tonsâ, erat mensis ni fallor Julii, prodiens è cænaculo in Cortem, sensi maximum odorem cereorem quasi nuper extinctorum; territus voco puerum interrogans an quicquam sentiret, ille cum de strepitu intelligeret, negabat, Monui non de sono intelligere, sed an odorem perciperet, dixit 'O quam magnum sentio ceræ odorem,' dixi 'Sile' et ancillam rogans, et uxorem, omnes mirabantur præter meam matrem quæ nil sentiebat, credo gravedine præpedita: Itaque mortem imminere hoc ostento autumans, cum ad lectum contulissem me, non poteram obdormiscere, et ecce aliud prodigium priore majus, in viâ publicâ grunnientes sues, cum nulli ibi essent, inde anates similiter obstrepentes: Quid hoc mihi, et unde tot monstra? Et anates cur ad sues veniunt? qui totâ nocte grunnientes perseverarunt. Mane tot visis percussus, nesciebam quid agerem: vagabar extra urbem a prandio: et rediens domum, video matrem quæ me hortabatur ut properarem, ictum fulmine vicinum Io. Præfectum alias pestilentiae: Hunc ferebant cum xii. ante annis ei

Tonsa, that as he went out of his door one evening, after supper, he perceived a smell as of extinguished tapers. He called out his household, and the smell was recognised by all except his mother, whose nose was disabled by a cold, and it was thought by all that such a smell must certainly be ominous of something. That night the physician was continually disturbed by a strange sound as of sows and geese outside. When morning came, Cardan went out to wander in the fields, very solicitous about these omens. On his return he was hurried off to see a neighbour—a man of no very good character, reputed to have been a thief in the office he had once held as prefect of the plague—who had been struck by lightning. He proved to be dead, and so the meaning of the presages became quite clear to the philosopher. “After my neighbour’s death,” he says, “my mind was easy.”

Work of the pen in the mean time went on. Seized by a bold idea, Jerome brought his astrology to bear on the Nativity of Our Lord, and began a Life of Christ confirmatory of his horoscope¹. He wrote also three medical

muneris vacaret, quod pestilentia sæviret, multa rapuisse: concubinam habebat, nec exomologesim subibat: forsan et alia pejora admiserat: erat autem vicinus, ut non intercederet nisi domuncula, vidi et cognovi esse mortuum prorsus, tunc liberatus sum a curâ, illius obitu.”

¹ “Succedente anno” (*i. e.* 1539) “tres libros de Christi vitâ super-auxi, qui jam antea per triennium erant inchoati.” De Sapientiâ, &c. ad fin. The first book treated of his Birth, the second of his Life, the third of his Laws.

tracts, and began a work on the Arcana of Eternity, designing thereby to please the Marquis Avalos, a governor of Milan, who had shown some friendliness towards the poor wise man whom so few heeded.

Alphonso d'Avalos¹, Marchese del Guasto, was another of the young and clever men who could recognise and enjoy the vigour of a genius that repelled the prim and vulgar by its eccentricities. He was a year younger than Cardan, the son of Inigo d'Avalos, and going early out to war was, at the age of twenty-one, present at the battle of Bicoque. From the subsequent contests in the Milanese, to which reference has been made often in preceding pages, he had been rarely or never absent. After the death of Antonio Seva he had been appointed general

¹ I have seen it somewhere stated that there is a MS. life of this D'Avalos in one of the Italian libraries, I think at Florence. In a note appended to his name in Roscoe's memoirs of Cellini, it is said that he was "the son of the great Ferdinando d'Avalos, Marquis of Pescara." In the *Biographie Universelle* he is called his nephew. Ferdinand was his cousin. The first of the family—it belonged to Navarre—who came to Italy, was Inigo, first of the name. He following Alphonso V. of Arragon to Naples, married a sister of the Marquis Pescara, who happened to be heir to his estates. In this way he acquired great wealth and a new title. Of the three sons of that couple, one died single, and two, Alphonso and Inigo II., married. "The great Ferdinand" was the son of Alphonso, and inherited through him the title of Pescara. The Avalos connected with the life of Cardan was the son of Inigo II., and inherited from him the Marquisate del Guasto. See Imhof *Geneal. Ital. et Hisp.* and the article on the Avalos family in Zedler's *Universal Lexicon aller Wissenschaften und Künste*, vol. ii. col. 2093—8. This old German Lexicon is a repertory of minute facts and references to authorities concerning half-forgotten things and people, through which I have had easy access to much valuable information.

and governor in Milan. In the year 1535 he joined the expedition of the Emperor to Tunis, and obtained military promotion. D'Avalos was by no means a man of the best stamp. He was clever, but unscrupulous; in words and ways fond of display. He sought the smiles of ladies as a dandy, and in that character was probably unequalled in his time and country. His dress was elaborate, and he perfumed not only his own person, but even the saddle upon which he rode. In the year 1536 his patronage of Jerome was but nominal. Four years afterwards, however, the marquis was sent by the emperor as chief ambassador to Venice; and before that time, on the recommendation of an influential friend, Jerome had come to be numbered and paid among the members of his suite. He had worked, however, for the great man's favour—had gone courting to him; and in one of his works he relates incidentally his regret that he was troubled with a severe cold at a time when he was—in furtherance of his suit—assiduously paying to the great man evening visits. He put his feet, however, in hot water, took Cassia Nigra, and in three days got rid of the ungraceful huskiness¹.

The name of this patron will recur several times as the narrative proceeds, and I know no better way of giving a

¹ "Opprimebar aliquando Coll. nostri auctoritate. . . . coactus sum principis Alphonsi amicitiam colere, id faciebam horâ vespertinâ," &c. De Aquâ. Opera, Tom. ii. p. 585.

preliminary insight into his character than by carrying on to the end this brief sketch of his life. D'Avalos, while at Venice, treacherously murdered two French ambassadors, in order to obtain possession of their papers. In 1544 he lost the battle of Cerisoles, in Piedmont, being the first man to take flight, although he had set out with the boast that he would bring home the young Duke of Anjou as a plaything for the dames of Milan. He had also taken with him on his march four thousand chains, with which he was to bind Frenchmen to the galleys. The unexpected reverse preyed upon his mind; never recovering from his chagrin he was taken ill, and died in the year 1546, ten years after the date from which this narrative has wandered.

While these facts are told against him, it should also be said that Alphonso d'Avalos used his great wealth in such a way as to merit the commendation of all churchmen and men of letters, for he was a lavish patron, as Cardan well knew, when he cultivated his good-will. At first he had been military governor of the Milanese district, Cardinal Caraccioli being the civil governor of the town. After the cardinal's death no successor was appointed, and D'Avalos was supreme. "His mild rule," wrote a Milanese churchman while his memory was green, "revived the province; and he was so liberal in sacred things that he in some degree made good the loss occasioned by

the absence of an archbishop¹." "He was a man," says the same authority, "of the most polished manners, studious of the fine arts, high minded, prodigal of his own wealth, and little greedy of the wealth of others²." All that was said evil of him was ascribed to the malignity of his enemies, who added to the grief of his last days by causing the Emperor to demand an oversight of his accounts. After his death at Vigevano he was brought to Milan, and buried publicly in the cathedral, with orations, and all honours that the clergy could bestow upon him.

It was at the end of the year 1536 then, during the vacation, that, to please this marquis, Jerome began a book on the Arcana of Eternity. In the year 1537—he being then thirty-six years old—the world still used him ill, and prompted him to write two works³, one upon Wisdom, one on Consolation—philosophic shields against the outer miseries of life. In the same year he proved himself a true philosopher by burning about nine books that he had written upon various subjects, because they seemed to him on re-perusal empty and unprofitable. His manuscripts had accumulated into a great farrago, chiefly of medical papers, and he destroyed so much that

¹ Ripamontius Chronistæ Urb. Med. (ed. cit.) p. 725.

² Ibid. p. 710.

³ De Libris Propriis (1557), p. 39.

there remained whole little beside his printed work, and the materials belonging to the treatise on arithmetic, which he proposed to publish soon, if possible.

The work written for D'Avalos on the Arcana of Eternity was kept afterwards unpublished by the Church, but Cardan himself liked it, and quotes the headings of the chapters¹. The work would have been a curiosity had it come down to us; only a fragment, however, is preserved. It was divided into seven books. The first treated of God and the origin of what we should call the Cosmos—the number of worlds and their magnitude. The second book discussed the constitution of the divine world which was called intelligible, or immaterial; the third was on the constitution of the sensible or material world; the fourth book was on the order of human things; the fifth on the succession of things natural; the sixth on the succession of things human; and the seventh on the end of the world to which those successions lead. The subjects of the chapters in each book are communicated to us, but it will suffice here to quote, by way of illustration, half a dozen of the heads under which Jerome treated of things human. They were of this kind: On the Likeness between the World and Man and on the Equal Distribution of Parts; on Sense and Memory; on Contemplation; on Numbers; on Virtue

¹ *De Libris Propriis* (1557), pp. 42—51.

and Sin; on Happiness; on the question, Are Assemblies worthier than Individuals? on the Existence of some Truth in all Falsehood, and of some Falsehood in all Truth; on the Necessity, Uses, and Harms of Law. There must have been no little boldness and originality of treatment in a book of this kind written by Cardan; but as it was not to be published, I must say no more of it, and turn to works with which the world at large became acquainted.

When he sought fame in print as a physician, he had been told that he was only qualified to write on Mathematics. Well, he would publish next a work on Mathematics; upon that subject also he had new ideas to communicate. Should he be honoured as a prophet then by his compatriots? The Milanese physicians still rejected him. In 1537, Jerome humbled himself again to petition for admission to their college. He had, indeed, for a short time consented to what he considered a dishonourable adjustment of his quarrel with them. The truce did not last long, and he was again formally rejected¹. In the same year, however, a new patient was obtained, whose friendship gave him hope of better days. Anxiously must they have been desired by Lucia, who had by this time two children to support; the second child a daughter, Clara, having been born in the preceding year².

¹ De Vit. Propr. p. 147.

² De Vita Propr. p. 20. The date is inferred readily from the state-

In the preceding year his household was increased, his daughter Clara had been born; and in that year, 1537, of which we now speak, his household was diminished, for it was then that his mother Clara died¹. While she lay awaiting death, Jerome of course had all his senses open for the perception of some sign or omen. Once in the night he heard a mysterious tapping, as of the fall of water-drops upon a pavement, and he counted nearly one hundred and twenty distinct raps. He was in doubt, however, as to their significance, or whether they were indeed spiritual manifestations, for they appeared to proceed from a point to the right of him, in contradiction to all doctrine concerning portents of calamity. He believed, therefore, that "perhaps one of his servants might be practising on his anxiety." But for the purpose of assuring his faith in the genuineness of the supernatural communication that he had received, the raps were repeated—he supposed that they could have been repeated only for that purpose—on the next day when the sun was high, and he, being up and awake, could assure himself that nobody was near him. There were then fifteen strokes; he counted them. Afterwards he heard in the night a heavy sound as of the unloading of a waggonful
ment there incidentally made that his daughter was two years younger than his eldest son.

¹ "MDXXXVII, cum mater obiit," Paralipomenon. Lib. ii. cap. xxi. Opera, Tom. x. p. 471.

of planks. It caused the bed to tremble. After these events his mother died; but Jerome adds: "Of the signification of the noises I am ignorant¹."

Turning from death to sickness, we revert to the new patient from whose friendship better days were to be hoped. There was a druggist named Donato Lanza², who had been cured by Cardan of a spitting of blood with which he had been for many years afflicted, and who therefore looked up to his benefactor as the most eminent of all physicians. He having the ear of a distinguished senator, deep in the counsels of the emperor, Francisco Sfondrato, of Cremona, often endeavoured to persuade him that he would do well to obtain Jerome Cardan's opinion upon the condition of his eldest son. The boy suffered for many months from puerile convulsions, and was to be counted rather among the dead

¹ De Vitâ Propr. p. 224. The spirit-rappers of the present day are welcome to the exact text: "Cum mater esset in extremis, experrectus, et illucescente altius sole, videns et nihil videns xv. ictus (illos enim numeravi) audiui, quasi aquæ guttatim in pavimento cadentis, nocte autem præcedente, circiter cxx. prope numeravi, sed dubitaveram, quod hos a dextrâ sentirem, ne quis domesticorum mihi anxio illuderet, ut hi ictus non viderentur in die contigisse, nisi ut nocturnis fidem facerent. Paulo post ictum quasi curris tabulis onusti simul se exonerantis, supra laquearia sensi, tremente cubiculo. Mortua est ut dixi mater, ictuum significatum ignoro."

² De Libris Propriis (1557), pp. 123—130, for the next story, and for the two cases afterwards narrated. The account of the introduction to Sfondrato is amplified from another narrative of the same facts in the De Vitâ Prop. pp. 188—192.

than among the living, being distorted, and imbecile both of mind and body; yet in time he did recover. Then a younger son of the same senator was attacked in the ninth or tenth month of his life by fever. Sfondrato's old friend and family physician, Luca della Croce, was called in, a very respectable man, procurator of the College of Physicians, which inscribed also Sfondrato among its patrons. Luca's brother Annibale had even thrown some lustre of scholarship about the family name, by writing Latin poems and translating Statius badly. The same Annibale we shall presently find furnishing half a dozen commendatory verses to Cardan's next publication. Luca della Croce saw the child, and promised fairly for it, as became a well-spoken physician; but sharp convulsions suddenly set in, and made it fit that there should be further advice taken and formal consultation held upon the case. Luca proposed to summon Ambrose Cavenega, one of the leading members of the faculty in Milan, holding rank as imperial first physician, a man whose eminence Jerome had acknowledged by dedicating to him, with high compliment (little esteemed), the small tract upon simple Medicaments added to his book on the Bad Practice of Doctors. Sfondrato being entitled by usage to name the third voice in the consultation, remembering all that had been said to him by Donato Lanza, proposed that they should meet Jerome Cardan.

At the second hour of the day—it was summer time—the three physicians were assembled at the bedside, the father of the patient being present. Della Croce was the first to express his opinion, then Cardan followed, Cavenega being the last speaker, as the senior man. Cardan said: “This is a case of opisthotonos.” The first physician stared, for he had never heard the word before. It is a word still commonly used in medicine to express the excessive action of one class of muscles by which limbs or body are curved backwards. Della Croce said: “How can you ascertain that?” Cardan showed how the child’s head was forcibly held back, and could not be pulled forwards into natural position. Della Croce lauded courteously his discernment. Said the father then to Jerome, “You appear to know what the disease is, do you know also how it can be remedied?” Cardan turned to his colleagues, and proceeded glibly to quote aphorisms of Hippocrates concerning fever and convulsions. The colleagues, conscious that there could result only loss of dignity from any words of quarrel, flattered the unrecognised physician with some praise, and left to him the treatment of the case. He ordered a light milk diet, by denying the nurse meat, prescribed fomentations and external application of linseed oil and lilies, ordered the infant to be kept in a warm room and gently rocked to sleep.

Afterwards, when Jerome was alone beside his patient, Sfondrato said to him : " I give you this child for a son." Jerome was astonished. " Consider him your own," said the senator ; " do with him as you would with your own child. Do not concern yourself about the other doctors. Let them be offended if they will." Cardan replied, that it was his desire to act as their ally, and to receive assistance from them in the case, of which the issue could be only doubtful. His course of treatment was, however, followed, and the child recovered in four days. The father reflected that under the care of Della Croce his eldest child had lain six months uncured, and so came to the abrupt conclusion that Donato Lanza had with reason praised Jerome Cardan to him as the most skilful of the Milanese physicians. The senator Sfondrato—who became afterwards a cardinal—abided by Cardan from that time forward as a good patient and a faithful patron.

Having made up his mind emphatically on the subject of Cardan, and distinctly weighed against him Della Croce and Cavenega, Sfondrato began to reflect upon his friend's position in relation to the College of Physicians. Della Croce was the procurator ; Cavenega had openly declared that he could not praise merit in a man who was disowned by the faculty ; the senator formed, therefore, at once a strong opinion that the exclusion of Cardan from their body by the Milanese physicians was the consequence

not of his illegitimate birth, but of his dreaded superiority of genius. Sfondrato, feeling warmly the wrong done to the poor lecturer, narrated his own experience of Jerome's skill to the whole senate, engaged on his behalf the interest of the Marquis d'Avalos, and of other ministers and men robed in the purple of authority. Would the physicians remain obdurate ?

I add here one or two other examples of Cardan's medical practice which belong to this part of his career. Branda Scoto, brother to Ottaviano, from whose press the *Bad Practice of Doctors* had issued, being, like his brother, a familiar friend, took Jerome to see Martha Mott, a woman of thirty, who lived in the Via Sozza. She had been for thirteen years confined to a chair by an ulcer in the left leg, which limb was too weak to support her. She had also flying pains, and a general wasting of the body. After two years, under Cardan's treatment, she retained nothing to remind her of her disease but a limp in walking. Twenty years afterwards she was a healthy married woman.

A tradesman, Jerome Tibbold, was induced, by what he heard of the preceding case, to apply to Cardan for the cure of his own cough, attended by spitting of blood and matter. He was wasted by consumption. Under the new doctor's care he got to all appearance well, and became fat. The physicians said that he could not have had true

consumption, or the man would not have recovered. When Jerome had healed several in this way, he ventured to write that he had cured people who suffered from consumption and oppression of the breath. But as far as concerns the consumptives, he tells us, "the physicians spoke untruly who declared them to be afflicted by diseases of another kind, and I spoke untruly in saying that they were healed. But what I wrote was written in good faith, for I was deceived by hope." After five years, for example, in the case of Tibbold, Cardan explains that the deceptive show of health broke down. Having returned from church upon a holiday in rainy weather, he did not change his wet clothes, but spent the entire night in gambling. His complaint then returned upon him with a fatal violence. He had been once apparently cured by Cardan, once afterwards by another person, but so at last he died of the disease. Upon close inquiry, Jerome was informed by the widow that her husband's cough had at no period been quite removed. Donato Lanza himself, who had considered himself to have been cured by Cardan of a consumption, a few weeks after he had introduced him to Sfondrato, being sought by the authorities for some offence, jumped out of window and fell into a fish-pond, where he brought on himself a recurrence of his malady, and speedy death.

Plainer acknowledgment of error could not be made,

and if Jerome afterwards, handling himself roughly as usual, declares that an important step in his life was determined by the lie he told about the healing of consumptive patients, and that he never profited so much by any single truth as by that falsehood¹, he certainly shows no decrease of candour. Yet mendacity in this instance was one of the great charges made against poor Jerome by his first posthumous critic of any note, Gabriel Naudé², who has been followed thoughtlessly by later writers. Bits of truth are the basis of error. Dreadful accounts of Cardan have been founded upon isolated passages found in his works ; but from a scrutiny of all the statements made by him about himself, arranged and collated with a fair amount of care, there can result only, as this narrative, if it be worth anything, will show, a confirmation of his claim to be regarded as a scorner of untruth. He does not by any means lay claim to the whole group of cardinal virtues, but he can see through respectability and all its cheats. It may be as much out of the pride of an ill-used philosopher, as out of the spirit of a Christian, that he speaks the truth, but it is truth that he does always speak, and nothing else. "I think," he says, "that

¹ De Libris Propriis. Lib. ult. Opera, Tom. i. p. 136.

² "Mendacissimum illum fuisse deprehendi, et ab hoc vitio reliqua demum velut e fonte promenasse, quæ a nonnullis deliramenta vocantur, non levibus de causis existimo." Naudæus in the De Cardani Judicium, prefixed by him to the book De Vitâ Propriâ.

I may call it a virtue never from my youth up to have uttered falsehood¹." "Beyond all mortals," he says in another work, "I hate a lie²." And though he has himself confessed one boyish falsehood, and may have been guilty of dozens while his unformed mind was growing up under corrupt influence, it is not the less consistent with the strongest passion for truth, that Cardan should exclaim out of the energy of manhood, "I do not remember that I ever told a lie, and, to defend my life, I would not do it³." We may accept it, therefore, as a fact, that Jerome always speaks literal truth, and generally speaks his mind in plain words, that are only too unguarded. He does not use even the reservation that is necessary to preserve a semblance of consistency before the crowd of casual observers. By making known too much about himself, he only puzzled steady men, with whom it had become a second nature to put out of sight the variations that arise within us all as time runs on, of memory, of mood, and of opinion.

To these considerations we must, however, add the fact that Jerome was by no means perfect in his ethics. Every honest man now holds that words so purposely contrived as to be true in themselves, but false in the impression

¹ De Vit. Prop. cap. xiv.

² De Varietate Rerum, Lib. xvi. cap. 93, p. 635 (ed. Bas. 1557).

³ "Nos autem non recordamur unquam mendacium dixisse, nec si pro vitâ tuendâ dicendum esset, diceremus."

they create, are morally identical with lies. I hold them to be worse. A sudden lie may be sometimes only manslaughter upon truth, but by a carefully constructed equivocation, truth always is with malice aforethought deliberately murdered. The spirit of the Roman Catholic religion in the days when Luther lived, led men to hold a very different opinion on this matter, and Cardan, in his ethical works, has critical chapters on simulation and dissimulation, holding the one to be right, the other wrong. He would disdain to speak untruth, or, indeed, often to suggest it, but he did not think it wrong to circumvent¹. Three centuries ago that was regarded generally as a lawful and even laudable exercise of ingenuity, if it had any good purpose in view.

While Francisco Sfondrato was engaged actively on his behalf in one way, Jerome was himself engaged in another way, during the year 1538, upon labours that might lead to an improvement of his fortunes. He was about to make his next public appearance as an author. The labours to which he had been stimulated by the lean and hollow-eyed mathematician, Zuanne da Coi, had assisted him to the completion of an elaborate, and in many respects original work on the Practice of Arithmetic. As it would contain many diagrams, and abound in notes, numbers, and novelties, Jerome had determined

¹ See Cardan's *De Prudentiâ Civili*, chapters 52 and 53.

that it must on no account be printed by his friends at Venice, the brothers Scoto¹. It must be executed at Milan, under his own anxious supervision. The crabbedness of a handwriting loaded with calculations, lines, and numerals, added to the ignorance or carelessness of printers whose sheets could not be submitted to the distant author for correction, would, if he entrusted his work to the Scoti, result in the publication of a jumble infinitely more distressing to the reader than his first little work issued from the same press, with its hundreds of errata. Not a shadow of the original treatise would remain ; labour, money, and the hope of fame would so at once be thrown away. Fortunately there was a bookseller in Milan ready to publish the Plat lecturer's arithmetical treatise at his own expense—nay, more, ready to pay him something—very little, but still something—for the copyright. Jerome Cardan sold, therefore, to Bernardo Caluscho, for ten crowns², his *Practica Arithmetice*, and it was imprinted at Milan in the year 1539, by Joannes Antonius Castellioneus, at the expense of the said Bernardinus Caluscus.

To this volume a portrait of its neglected author was prefixed, surrounded by a motto, reminding the unkind Milanese that a prophet is of no esteem in his own

¹ De Libris Propriis (1557), p. 41.

² De Libris Propr. Lib. ult. Opera, Tom. i. pp. 103, 104.

country. As this portrait was submitted by Cardan himself to his own townspeople in a book carefully produced, and upon the success of which he felt that much depended, we may accept it fairly as a likeness. It is at any rate quite clear that the artist has not been required to mend the truth in representing the outside appearance of the poor philosopher, and I am not disposed to think that he has marred it¹.

The publication of this book in 1539 formed, as will presently be seen, the turning-point in the life of Cardan as an author. In the same year, also, the dam suddenly gave way by which his course as a physician had been checked. The energetic friendship of Sfondrato had obtained for Cardan the good-will and good offices of another native of Cremona, Giovanni Baptista Speciaro, a magistrate in Milan. Speciaro was in a position to commend him to the less distant friendship of a patron before mentioned, Alphonso D'Avalos, in 1539 governor of the province. By the influence of all these friends, but by the protests of Sfondrato himself more especially, and of another friend, Francisco della Croce, jurisconsult, an honest man and good mathematician, the physicians of Milan were compelled to sully their respectability by welcoming into their company an ill-born scholar. Thus,

¹ A fac-simile of the old woodcut, reduced in size, has been placed as a vignette upon the title-page belonging to this volume.

in the year 1539, after twelve years of resolute exclusion, Jerome Cardan at last came to be enrolled among the members of the Milanese College of Physicians, and acquired the legal right of practising for fees, or taking office as a teacher in the university

CHAPTER X.

ARITHMETIC AND CONSOLATION.

DESIGNING in this chapter to complete and carry forward the history of the first books published by Cardan, I must go back for the purpose of adding a few facts to the account already given of his earliest printed work. Its full title is "The Tract of Girelamo Castellione Cardano, Physician of Milan, on the Bad Practice of Healing among recent Physicians; to the Illustrious Master Filippo Archinto, Jurisconsult, Imperial Councillor and Governor of the Maternal City of Rome.

"The Tract of the same Author on the Hurt that is in Simple Medicaments. With an Index of those things which are contained in the several Chapters¹." Ottaviano Scoto's mark, which follows, surrounded by a Fame, is contained between the words of the motto: "Famam extendere factis, virtutis est opus." Then follow the place and date of publication, Venice, 1536. Only one edition

"Hieronymus Castellioneus Cardanus de Malo recentiorum medicorum Medendi Usu Libellus, ud Illustrem Virum D. Philippum Archintum juris-consultus consiliarumq; Cæsureumq; ac Almæ Urbis Romæ Gubernatorem. Ejusdem libellus de simplicium medicinarum noxa. Cum Indice eorum quæ singulis continentur capitibus." Venetiis. 1536.

of this work was printed, Jerome having refused, for reasons before stated, to sanction a re-issue. It is a little square book, closely printed, and containing in all a hundred and ten pages. The main work is dedicated to Archinto; but this dedication contains also a compliment to the physician Ambrose Cavenega, who is excepted from the author's general criticism of the physicians of his time, "for," he says, "the things which give most authority to a physician in these times, are habits, attendants, carriage, character of clothes, cunning, suppleness, a sort of artificial, namby-pamby way; nothing seems to depend on learning or experience." It would be well if this criticism had quite ceased to be applicable. It did not lose its force for at least two hundred and fifty years, and is in our own day only beginning to grow obsolete.

The dedication of his little volume to Archinto, Jerome thus explains: "When I saw that you were foremost in wit, memory, variety of studies, genius, and authority, I judged you to be the best person to whom I could inscribe my first so salutary labours; I was also bound to dedicate them to you by the several employments I have obtained through you in the state; and at the same time invited by your virtues."

The little tract on Simples, occupying the last few pages of the book, is dedicated, as before stated, briefly as possible, to "Ambrose Cavenega, the most excellent doctor of arts and medicine, the most worthy ducal physician."

Passing over the ten pages of Judicial Astrology, published by Jerome on his own account, we come to the Practice of Arithmetic, published in 1539 by Bernardo Caluscho. The book is entitled¹ "The Practice of Arithmetic and Simple Mensuration. By Jerome C. Cardan, Physician of Milan ; in which whatever else is contained will be shown on the next page." There are prefixed to it half a dozen lines of alternate hexameter and pentameter, supplied by the Latin poet Annibale della Croce, brother of the Doctor Luca before mentioned. The lines², literally translated, are to the following effect: "Many are the uses of numbers, the discriminations of parts, and you may read about them in a thousand volumes. In a little, easy, learned, well-digested book, the sedulous care of Cardan gives them to you here. Read it presently, and you will say that you owe as much to that small book as to the thousand volumes." The book is dedicated by Jerome with the best feeling to his early Milanese friend and patron, the Father in Christ Prior Francesco Gaddi, and in the course of the dedi-

¹ "Hieronimi C. Cardani Practica Arithmetice, et Mensurandi Singularis. In qua que præter alias continentur, versa pagina demonstrabit." Mediol. 1539.

² "Multiplices numerorum usus, discrimina parteis.

Queque voluminibus mille legenda tenes.

Exiguo, facili, docto digesta libello.

Hic tibi Cardani sedula cura dabit.

Perlege mox, isti tantum debere libello.

Te dices, quantum mille voluminibus."

cation, looking back to his first luckless venture, the poor author tells how he had been cherishing a "wish among many occupations to have so much leisure as to write a work that could be fairly blamed by none."

Before the index of chapters, there is given in this volume a list of twenty-five new points laid down in the course of the treatise; but as we shall find that a second and maturer work on Arithmetic and Mathematics was published at a somewhat later date, it will be more convenient to postpone for the present what has to be said concerning the claims of Cardan to respect as a great mathematician. It will suffice here briefly to indicate the nature of the book published by Caluscho, and to dwell only upon a certain page or two of characteristic stuff appended to it which belongs immediately to the thread of this narrative, inasmuch as it in fact led to the next great event in Jerome's literary life, and carries on the story from the point reached at the close of the preceding chapter.

Cardan's *Practice of Arithmetic* is divided into sixty-eight chapters. The first states the subjects to be discussed; the second treats generally of the seven operations of arithmetic; the next four treat of the first of those operations, numeration, as it concerns integers, fractions, surds, and denominations (cubes, figures, &c.) respectively. Four chapters follow devoted in the same way,

one to the treatment of each of the four subjects of calculation by the next of the seven operations, aggregation or addition; the four next are occupied, of course, by detraction or subtraction; the four next by multiplication; and the next four by division, as applied to integers, surds, fractions, and denominations. The four next chapters treat of the extraction of roots; and the next four of progression. The seven elementary operations of arithmetic are thus discussed in thirty chapters. The thirty-first chapter treats of the application of the seven operations to calculations in which there are combined both integers and fractions; the succeeding chapters treat in the same way successively of the seven operations as applied to combinations of integers and surds, integers and denominations, fractions and denominations, fractions and surds, surds and denominations. The thirty-seventh chapter treats of the seven operations as applied to proportion, and of the logical difference between multiplication and division on the one side, and aggregation and detraction on the other. The thirty-eighth chapter discusses astronomical operations; the next, multiplication by memory; the next is a clever dissertation on the kalends, nones, ides, cycles, golden numbers, epact, dominical letter, places of the sun and moon and moveable feasts, with rules for easy mental calculation of most questions arising out of details of the almanac. The forty-first

chapter treats of the value of money; the forty-second treats of mirific numbers, that is to say, of remarkable properties of numbers, natural but strange. The next chapter passes on to the supernatural, and treats of the mystic properties of numbers. Then follows a chapter on irrational quantities; and then Jerome comes to the discussion of the rule of three, which he characterises as the key of commerce—"clavis mercatorum." The next chapter is upon the rule of six, our double rule of three; the chapter following compares the two processes. The treatise then passes in the forty-eighth chapter to the first simple rules of algebra, and travels on to higher mathematical discussions, closing with chapters upon house-rent, letters of credit and exchange, income, interest, profit and loss, games of chance. It then comes to superficial mensuration, and the measuring of solids; passes on to the practical details of weights and measures, and closes with an exposition of certain errors in the works of Luca de Borgo, and a long list of cunningly-devised questions in arithmetic and geometry, calculated to put to a severe test the student's practical acquaintance with the rules and reasons laid down in the book.

While this treatise was at the printer's—and nearly a year seems to have been spent in the printing—the unhappy author was still struggling against contempt and poverty in Milan. Anxious to work a way out of his

obscure position, and to make some approach towards the fame for which he longed, for he was thirty-seven years old and still unrecognised, Cardan proposed to bind up with his second venture as a public author a notice, which was in effect, though not in form, an appeal from his own countrymen to scholars in all quarters of the world. He trusted that the merit of his book, unquestionably very great, would recommend him to men at a distance. Among them, perhaps, when they saw by the motto round his portrait that he was in no esteem at home, and read in the concluding notification how many and divers books that he had written were still left unprinted in his study, there might be one or two who would desire to bring his genius more fully out into the light, and who, for the love of knowledge, would extend to him a helping hand. The notification was of a legal kind, and it is to be found printed in black letter at the end of the first edition of the *Practice of Arithmetic*. In many parts it is curious, as illustrating not only Jerome's anxiety to escape from the cold and hungry state of a neglected scholar, but also the law of copyright in those days, the small money value set by Cardan on his writings, and the care taken by the Church to provide a censorship which did in fact render impossible the publication of a good many philosophical works. It of course prevented the world at large from being edified or shocked by the

Life of Christ that was completed in 1539, after having been three years in progress. That book was never published; but though not to be read it was abundantly abused by controversialists, who were much scandalised at the one fact of which they were informed by its author, that it set out with an astrological nativity. The notification added to the Practice of Arithmetic was to the following effect:

“Charles the Fifth, Roman Emperor, Ever August, &c. Inasmuch as we have considered the petition of Girolamo Castellione Cardano, Physician of Milan, most faithful servant of the most unconquered Emperor, saying that he has prepared the under-mentioned works in divers faculties to be imprinted in succession according to his convenience, of which two little works have already seen the light; and that he might not be compelled to seek imperial privilege as often as he might have one such work to publish, therefore for the works named below existing in his possession, of which some have already been printed, he desires to obtain an universal privilege: We acquiesce in his humble supplication, and require by these letters that fit and needful help shall be afforded him to prevent any one from printing one of the works named below, or introducing such a work elsewhere printed into any part of the Duchy of Milan, or from committing any fraud against any such work until ten

years after the date of its first publication, under the accustomed penalties according to the imperial pleasure. Of which works the list now follows. (Here follows the list of Jerome's unpublished writings upon divers subjects, thirty-four in number.) In addition to those two which have already been printed: one on the Bad Practice of Healing, and one on the Hurtfulness of Simples.

“For the pleasure or profit of professors of those sciences whereof the above works treat: We concede that they may cause them to be printed either together or in part; except, firstly, that one which treats of the Arcana of Eternity; secondly, that on Death, which is said to contain three books; thirdly, that on Fate; fourthly, that on the Life of our Lord Jesus Christ, also contained in three books: of which we require that they shall first be laid before our senate, that it may be seen whether they are fit for publication.

“Furthermore, we forbid that any man within this our state of Milan shall within ten years print, or cause to be printed, the above works, or any of them, or bring them, or cause them to be brought, from other places into the said state, or have them for sale, against the consent of their author. The penalty for contravention of this our decree shall be ten scudi for each volume of the said works: of which half shall be paid to the author himself, but the remaining half shall be divided between our

exchequer and the informer. This we assure by the present document, which we have commanded to be authenticated by the impression of our seal. Given at Milan, June 25, 1538."

The year 1539, in which Jerome broke through the barrier opposed to his career by the Milanese College of Physicians, and also published his *Practice of Arithmetic*, which made an easy way for him ever thereafter into the long-sought Paradise of Print, ought to have been foretold to him as a bright year by the stars, if Jupiter had been indeed a conjuror, and Venus had had any right to be regarded as a gipsy. According to his own horoscope, however, Jerome in that year was not very far from death, nor was the world likely to lose much at his decease, if Cheiromancy spoke the truth in calling him a dunce. His head, however, confuted the testimony of his hand. The *Practice of Arithmetic*, finding its way both into France and Germany, commended its author to the respect of many strangers, and the notification at the end happily produced in one quarter the right effect. To the neglected scholar of Milan there was sent from Nuremberg the offer of Joannes Petreius to print any work which he might be disposed to entrust to him for publication. The offer was transmitted by a learned man of the same town, Andreas Osiander, who undertook to watch through the press, and take careful charge, as local editor, of any work written

by the most learned Cardan, and printed by Petreius. "That," says Jerome, "was the beginning of my fame; of whatever glory I have earned that was the origin¹."

Osiander was a Lutheran theologian, not very orthodox of his kind, whose name in the vulgar world was Hosemann, as one who may have had an ancestor distinguished for his early assumption of a garment mentionable perhaps in Latin—*quasi vir braccatus*. He was a man ten years older than Cardan; and having said so much, I may add, that he did not remain to the end of his life at Nuremberg, but spent the last three years of it in Prussia, where he enjoyed court favour as a theologian, and that he died long before Cardan, at the age of sixty-two. He had commenced his public career at Nuremberg as lecturer on Hebrew among the Augustin monks, whose company he had left to preach the new doctrines of Luther. His was the first Lutheran sermon preached in that town,

¹ Speaking of the Practice of Arithmetic for which Caluscho gave him the ten crowns, he says: "*Nec si non impressus fuisset nostra monumenta invenissent Typographum: continuò enim, eo opere impresso, cæperunt omnia commutari. Nam adjeceram Catalogum qualemcunque librorum nostrorum, quos vel scripseram, vel cæperam scribere: et liberis distrahi cæpit in Galliis atque Germaniis. Itaque cum tunc esset Andreas Osiander Norimbergæ, vir Latinæ, Græcæ, Hebraicæque linguæ peritus, tum typographus Joan. Petreius, bonis literis, si quis alius favens, inito consilio totis viribus mecum agere cæperunt, ut aliquid opus illis traderem ut imprimerent. Atque ita initium gloriæ nostræ, si qua deinceps fuit, hinc ortum habuit.*" *De Libris Propriis. Lib. ult. Opera, Tom. i. p. 104.* The same authority covers the account of the rest of this transaction.

but as he continued to think for himself, he at last gave not less offence to the orthodoxy of the Lutherans than of the Catholics, and lived a life much clouded by controversy, in which he appears to have shown no lack of the usual bitterness and pride. He was well versed in Hebrew, Greek, and Latin, had an inquiring mind, and a decided leaning to philosophy. He was a good mathematician, and, in 1543, the literary spirit which induced his offer to Cardan, caused him to edit, for the first time in Nuremberg, the Astronomy of Copernicus, Petreius printing it¹.

To the request of his new friends at Nuremberg, Jerome replied by sending them an enlarged copy of the tract on Judicial Astrology, which he had published imperfectly, and with too much curtailment, in Milan, at his own expense. Having sent that to be published at Nuremberg, he forwarded nothing else, for a short time, to Osiander and Petreius, for it will be remembered that the Scoti, of Venice, were his friends, and having profited by his first work, they were quite ready to print for him again. Having no friend in Venice competent to correct for him the proofs of any abstruse work, and being greatly

¹ Christoph. Saxi Onomasticon Literarium, Tom. iii. p. 165. Zedler's Universal Lexicon aller Wissenschaften und Künste. Bd. 25. In which last work, under the name of Andreas Osiander, the elder, further details may be found. One of Osiander's works had a curious bearing on the character and spirit of his time; it was entitled, "How far is a Christian justified in flying from the Plague?"

annoyed at the mass of printer's errors in his early treatise, Cardan refused to put his fame in peril by entrusting to his friends any work that contained technical terms and figures. There was no reason, however, why they should not print his Books on Consolation, since there was in them nothing but plain, every-day Latin. Those books, forming the next volume issued by Cardan, were therefore first printed at Venice, and then published as a reprint by Petreius of Nuremberg¹. This volume, however, was not published until the year 1542; and before more is said of it, the two or three preceding years of its author's literary life should be accounted for.

It should have been said, that in or before the year 1538, Jerome saw in a dream a book painted in three colours—red, green, and gold; he admired greatly its beauty, but he admired still more its contents. From that dream he obtained the first idea of his work on the Variety of Things, published years afterwards, and then commenced². He wrote in that year on Things Above—the rainbow, hail, earthquakes, lightning, &c., and what he wrote was copied out for him by Lodovico Ferrari³, then residing with him in his house. In the same year he began to write a description of a famous astronomical in-

¹ De Libr. Propr. Lib. ult. Op. Tom. i. p. 103.

² Ibid. p. 102. De Lib. Prop. (ed. 1557) p. 28.

³ De Sapientiâ, &c. p. 428. The same reference provides authority for the rest of the facts stated in this paragraph.

strument showing celestial movements, which having been bought formerly at a high price from the maker by a duke of Milan, had then been taken to pieces, and, after great trouble and discussion, put together again by Ianello, of Cremona. As Cardan could not have the instrument at home with him, he grew tired of that work. In 1539 Jerome finished his three books on the Life of Christ, and arranged two or three books of Letters. The whole of the next year was spent in the revision and emendation of his former writings, one of which, that on Consolation, written in 1537, he prepared next for the press. In 1541, admonished by a dream, he began to work earnestly at Greek literature, and wrote upon the Immortality of the Soul.

“Girolamo Castellione Cardano of Milan his Three Books on Consolation,” published at Venice in 1542¹ by one of the brothers Scoto (Girolamo), formed a neat little volume of two hundred and sixty-four pages²; and had as emblems on the title-page a Peace instead of a Fame riding the globe, with the motto, *Fiat Pax in virtute tua*—Let Peace come of your virtue. There is a great deal of wisdom in the matter, and of wit in the manner of all

¹ Hieronymi Cardani Castellionei Mediolanensis De Consolatione Libri Tres. Venetiis, apud Hieronymum Scotum, 1542.

² One hundred and thirty-two, as figured; the two pages of a book that face each other being accounted one in this as in many other volumes of the time.

Cardan's ethical writings. Though he did not soar far above his neighbours in Latinity, he excelled most in the sterling qualities of mind expressed through the usual barbarous medium, and by force of genius even his sixteenth century Latin is not seldom compelled into phrases terse and inimitable in their way. The Books on Consolation were intended in the writing to console their author under bitter disappointments during his first struggles with an adverse world. "The work was called at first," he says, "the Book of the Accuser, because it contended against the vain passions and false persuasions of mankind: afterwards its name was changed, and it was divided into three books, inscribed as Consolation, because it appeared that there was a far greater number of unfortunate men needing consolation, than of fortunate in need of blame¹." This passage shows the spirit in which Jerome wrote, how far it was removed from bitterness. He treats in succession of those events which are regarded commonly as the great ills of life, offering upon each many such comments as Epictetus would have heartily commended, fortifying his case with apt illustrations and a great many classical examples, adopting sometimes the language of a Christian,

¹ "Fuerat autem ab initio ejus nomen Accusatoris, ut qui vanos hominum affectus, atque falsas argueret persuasiones: at post mutato nomine, et in tres libellos diviso, de Consolatione eum inscripsimus, quod longe magis infelices consolatione, quam fortunati reprehensione, indigere viderentur." Op. cit. p. 3.

and whether writing in the vein of the old Roman Forum, or the modern Roman Church, always enforcing the opinion, common equally to philosophic heathens and to Christians, that happiness and peace lie not in the world without but in the mind within, and that content is only possible to virtue. This work Jerome dedicates to no one person, because no man would wish it to be published that he is in need of consolation¹. "It seems," he says very shrewdly, "to be in the grain of men to think themselves more miserable, and to wish to be thought happier by others than they really are."

The gain made by the Scoti on the publication of the "Bad Practice of Healing," was neutralised by loss upon this second undertaking². The title of the book, Cardan thinks, was not liked, nor, perhaps, was the style attractive; and again, the volume was disfigured by the printer with a great number of the vilest blunders. So far as temporary popularity was concerned, the book was very naturally less successful than its predecessor. One touched on

¹ *Namque illud naturâ omnibus insitum mortalibus videtur, ut se miseriores quam sint existiment, fœliciores vero videri cupiant.* Op. cit. p. 2.

² After its publication, he writes that Ottaviano held his books in dread: "*Neque enim, ut dixi, Octavianus sponte libros meos, neque libenter imprimebat, jacturam veritus impensæ: nam tametsi lucrum fecisset in librorum de Malo Medendi Usu impressione, id tamen in libris de Consolatione postea compensavit: non solum quòd titulus et forsân etiam stylus non arrideret, sed quòd Typographus ipse innumeros atque turpissimos errores imprimendo commisisset.*" *De Lib. Prop.* (1557) p. 40.

the material interests of a class, stirred passion, was warmly talked about, and quickly bought; the other touched on the moral interests of mankind generally, was written to allay passion, was coldly talked about, and bought with more deliberation. It was reprinted by Petreius at Nuremberg¹, and grew in credit; it was a capital of fame put out to interest, of which instalments were paid ever after punctually year by year. The little volume came by slow degrees to be accepted as a standard work of its own time, was translated into sundry languages, and twice into our own. The first English translation, entitled *Cardanus Comforte*², was made while Cardan still was living, thirty years after the publication of the book at Venice. The very brief specimen that can be here given of Jerome's style as an essayist and moralist, I think it best to quote from this contemporary version.

It was made by “Thomas Bedingfeld, Esquyer, one of her Maiesties gentlemen pentioners”—her Majesty being Queen Elizabeth—and it was both made at the request and published at the command of the Earl of Oxford “Sure I am,” said Bedingfeld, “it would have better

In 1544, together with the books subsequently written, *De Sapientiâ*, and the first of the three books *De Libris Suis*, then first printed.

² “*Cardanus Comforte* translated into Englishe. And published by commaundement of the Right Honourable the Earle of Oxenford. Anno Domini, 1573. Imprinted at London in Fleete Streate, near to S. Dunstone's Church, by Thomas Marshe.” Without pagination.

beseemed me to have taken this travaile in some discourse of armes (being your lordship's chiefe profession and mine also), then in philosopher's skill to have thus busied myselfe : yet sith your pleasure was such, and your knowledge in eyther great, I do (as I will ever) most willingly obeye you." But in his modesty he begged of the earl so far to keep his labour secret as "either not to make any partakers thereof, or at the leastwise those, whoe for reuerence to your lordship or loue to mee, will willingly beare with mine errors," &c. &c. To this request the earl replied in an elaborate epistle. "After I had perused youre letters good Maister Bedingfeld, finding in them your request farre differing from the desert of your labour, I could not chose but greatly doubt, whether it were better for me to yelde you your desyre," &c. &c. In fine, he determined to print the book, and bade Bedingfeld be proud rather than ashamed of it, inasmuch as it displayed a kind of gift that "ornifyeth a gentleman." His lordship also called in "Thomas Churchyarde, gentleman," to introduce Cardanus Comforte to the English public with the proper flourish of commendatory verse. Churchyarde first scolded in prose the expected readers of the volume, who, he said, must not go to sleep "and loose but labour with slobberinge handes or head to blot or blemish the beauty of this booke." He then put on his singing robes, and invited them to come for consolation to Cardan in proper form ; as for example thus :

"You troubled mindes with torments tost that sighes and sobs consumes:

(Who breathes and puffs from burning breast both smothering smoke and fumes)

Come reade this booke that freely bringes, a box of balme full swete,
An oyl to noynt the brused partes, of everye heauey spriete."

I propose to quote from Cardan's work, as Bedingfeld translated it, only the opening and closing paragraphs. They will suffice to convey a very fair impression of the style and temper of the poor philosopher who was so rude and hasty in his speech, yet at the same time always so deliberate and gentle in his writings. The opening sentences remind us of the fact that, not long before the writing of this work was commenced, Jerome had occupied himself in reading word by word the whole of the extant works of Cicero. Thus he begins:

"Amonge such and so manye auncient monuments as perished in y^e Barbarian warres: would God that at least Marcus Tullius bokes of comferte, written at the deathe of his daughter, had been tyll this day preserued. For as in all other matters hee declared himselfe more then a man, so may it be thought that herein he had written most excellently: the matter being neyther common, fayned or touchinge others, but procedinge from his own naturall affection and extreme perturbation of mynde. And suche is the condicion and qualitie of comfortinge, as al be it no persuation or eloquence were there in used, yet

wanteth it not reason and sufficiente prooffe to trye it selfe¹: wherein so excellent, wise, and eloquente a man as Marcus Tullius having travailed: it muste be presumed he framed a worke not only worthy prayse, but also aboue all expectation.

“And albeit those auncient warres have among many other noble workes depriued us of so learned a booke, yet haue we thought mete to entreate thereof (not” [only] “because it is so praisable as amisse it cannot be prayed), but also so necessary” [that] “(as in all thinges whiche of necessitie must be had) better it is to haue any than none at al. For example we see, that houses are nedefull, such as can not possesse y^e stately pallaces of stone, do persuade themselves to dwell in houses of timber and clay, and wanting them, are contented to inhabite the simple cotage; yea rather than not to be housed at all refuse not the pore cabbon, and most beggerly caue. For in these things better it is to have the worst than none at all. So necessarie is this gifte of consolacion, as there liueth no man, but that hathe cause to embrace it². And wel we see ther is none aliue that in every respect may be accompted happie, yea though mortall men were free

¹ “Et se tamen locupletissimam materiam suggerat.” It would suggest by itself the richest matter.

² I have not altered Master Bedingfeld’s translation, which fits admirably to the text; but as he had spoilt this passage so far by the transposition of three sentences, I have restored them to their proper places.

from all calamities, yet the torments and feare of death should stil offend them. But besides them, behold, what, and how manye euilles there bee, that unlesse the cloude of error be remoued, impossible it is to see the truth, or receiue allay of our earthly woes.”

After treating in succession of those ills of life most commonly deplored, enriching his text with much shrewd wit, with a great deal of anecdote, and with the proper store of classical quotations and allusions, arguing also sometimes out of a firm belief in curiously false opinions current among men of science in those days, Jerome thus draws his work of consolation to a close. He has throughout taught that the best safeguard against tribulation is to have a clean heart and a busy hand. Urging that fact again emphatically, he passes from the last of human sorrows, death, and ends by leaving man secure from further need of consolation, in enjoyment of that peace which is to be found only beyond the grave. Thus Jerome wrote about Calamity—and thoroughly meant what he wrote—at a time when he himself was bearing much :

“Wherefore to bear everythinge resolutely, is not only the parte of a wise man, but also of a man wel aduised, seinge there is nothing in this life that may iustly be said to be against us. Therefore Homerus fayned Aten the Goddes of Calamitye to be barefooted, as one that could

not touch anything sharpe or hard, but walked lightly upon the heades of mortall men.

“Meaninge that Calamitye durst not come nere anye, but such as were of base minde, simple, and subjecte to effeminacy. But among such as were valiant and armed with vertue, shee durst not come. Wherefore lift up thy mynde to Heaven where an everlastinge and most pleasaunt life is prepared for thee. Men in this worlde are lyke trees¹, some slender, some great, some flourishing, some bearing frute, some witheringe, some growinge, some blowen downe, and some frutefull, which in one harueste time are brought togeathers and laide uppon one stacke. Neither is there afterwards sene any difference among them, what they be or haue bene, al at one time be cut downe neuer more to growe agayne. Even so al pryde, ambicion, ryches, authoritye, children, frendes, and glory doe in shorte space grow olde and perishe, neither dothe it make matter whether thou were Irus or vile Galba, Antaxerses or noble Hercules. Onely honestye and vertue of mynde doth make a man happy, and onely a cowerdlie and corrupt conscience do cause

¹ Cardan's image was taken from the bean-fields; but the translator thinking it a mean thing to compare men to beans, wrote trees, and took away the beauty of the image, substituting the odd notion of trees harvested together, and all laid upon one stack. Thus the passage runs: “Homines enim in hoc mundo ut fabæ sunt,—aliæ enim pusillæ, aliæ magnæ, aliæ florent, aliæ fructibus conspicuæ, aliæ aridæ, aliæ luxuriantes, aliæ exiles, fruticosæ aliæ: omnes tamen unus autumnus quàm brevi in inanes stipulas redigit.” De Consol. p. 131.

thine unhappines. Because the worste that the good man can feare, is the best that the evyll can wishe for: whiche is the destruction of the soule in death. But as he ought not to hope thereof, so should not the other feare it. For God the eternal father hath sent us into this worlde as children and heyres of hys kingdome, and secretly beholdeth how we fighte and defend our selves, against our sences, the world and the Devyll. And who so in this battell, valyantly fighteth, shal bee called and placed among the Prynces of heauenlye kingdome. And who so slothfully or cowerdly behaueth himself, as a slave in featres shall for evermore be bounde.

“ This worldly stage was purposely prepared, that God the father might secretlye beholde us. Such foolish children then, as in his sighte wantonlye, slouthfully, and sediciouslye lyve, shoulde they not thinke he doth beholde them. When so ever therefore thou haste taken that last leaue of Life¹, thy soule like unto a lover embracinge his death, shall enjoye that sweteness and security, whyche we can neither wryte of nor conceive. For sith these worldlye lovers (amongest whom be many

¹ In Cardan's words the succeeding image is expressed more strongly than by the translator. “Cum itaque stremum agonem anima superaverit, tam quam amans amanti copulata, eâ dulcedine ac securitate fruitur, quam nec scribere, nec cogitare possumus,” &c. p. 132. To the brief account of Cardan's books on Consolation given in the text, it will perhaps be well specially to add, that although in some parts occupying the same ground, they do not resemble, or equal, the five books of Boëthius on the Consolations of Philosophy.

mislykings without assurance or eternity) can scarcely expresse their joyes in loue: Happy, yea thrise happy is this heauenly lover, who forgettinge all others, wythe his one love is united. For within this kingdom he loveth and liueth in the sight of him, that can do all thinges, and therefore lyke a good sonne to his father is ever readye to do his pleasure."

So wrote the first among the atheists of the second order.

CHAPTER XI.

THE WOLF AT THE DOOR.

JEROME certainly was not living a brilliant life before the world when his three books of Consolation were first issued to the public. After the events of the year 1539 he began to breathe; but it was not until four years afterwards that he experienced any real change of fortune. The stars were supposed to have predicted that his death would take place before he reached the age of forty, certainly before he should attain to the full age of forty-five; "but," says Cardan, "it was when I ought to have died that I began really to live¹." The error lay of course, however, not with the stars, but with the imperfect readers of their language.

At that time which should have been the close of his

¹ "Et astrologiæ cognitio quam tunc habebam, et ut mihi videbatur et omnes aiebant, me non excessurum xl. vitæ annum, certè non ad xlv. perventurum multum obfuit. Ego interim partim necessitate, partim offerentibus se voluptatibus quotidie, cum rectè vivere deliberarem, delinquebam. Negligens ob malam spem res ipsas: in deliberando aberrabam, et frequentius in opere peccabam. Donec eo ventum est, ut qui finis vitæ futurus credebatur, vivendi initium fecerit, xliii. scilicet annus." De Vit. Prop. p. 44.

life, the house he occupied belonged to his mother, who lived with him; it was a house near the church of St. Michael. He earned very little indeed as a physician, but something as an almanac-maker—something by the sale of astrological opinions; a little help he had occasionally from his friend Archinto, and a friend who belonged to the household probably paid her way in it as a lodger¹. With these resources and the Plat lectureship he kept house as he could. There was the resource also of the gambling-table.

Though the Milanese College of Physicians so far honoured the recommendations made in favour of Cardan, that already in the year 1541 we find him in office as its rector², it does not appear that Jerome troubled himself much to acquire a social standing that consisted with his newly-acquired privileges. In that year, 1541, he was scarcely practising at all; his energies were all spent upon Greek and gambling. Neither in that year, nor in the year preceding, had he worked much with his pen. In 1540 he had found leisure as an author for no more than the correction of his previous books. In 1541 he wrote

¹ De Vitâ Propriâ, cap. xxv. p. 95, for the preceding.

² He states the fact incidentally in the history of a case attended by him in that year. De Vit. Prop. cap. xxx. The servant of a Genoese colonel came from Switzerland, where he had slept between two men who subsequently died of plague, and had himself taken the infection. Cardan found him not dead, but apparently so, and the colonel urged that he should at once be carried to the dead-house. Cardan would not permit that. The man recovered.

something about the Consolation of Lovers and the Immortality of the Soul. At Greek he did work. In the last-named year, being admonished by a dream, he betook himself to the study of that language with so much earnestness of purpose, that the smattering which he had begun to acquire six years before, and beyond which he had not passed, was in four months enlarged into a considerable acquaintance with the language; he became able to understand it so well that he might read for hours without being checked by any difficulty, and spent time in writing Greek, not, he says, as a sign of scholarship, but of the energy with which he studied¹.

During these years, 1540 and 1541, and during the first part of the year 1542, Jerome allowed all other work to fall into neglect, because the Fates had sent to him a golden goose². Antonio Vicomercato, a patrician of Milan, was inclined to amuse himself daily with the poor mathematician and physician over the dice-table, very well content to lose. Cardan of course was alike glad to play at dice, and glad to win. He went to Antonio's house daily, and stopped often the whole day; they played for from one to three or four reals a game, and as

¹ "Non enim veteranus, sed tyro militabat, tum maxime *αὐτοδίδακτος* existens. Expressi ibi vim non eruditionem." De Sapientiâ, &c. pp. 429, 430. The reference substantiates the account given in the text of Cardan's literary work in the years 1540—41.

² All that relates to Vicomercato will be found in the 38th chapter of the book De Vitâ Propriâ.

Jerome always rose a winner, he was able to take home about a gold piece daily, sometimes more and sometimes less. For two years and some months almost all other sources of income dried away from him, while he cultivated this. His credit sank; even pen, ink, and paper were neglected.

With money so earned, or with money however earned, in the midst of his poverty he was improvident. He enjoyed musical evenings, and music, as he said, led to unprofitable company. The taste of the period was for part-singing, and it was not easy to collect four or five men who could sing readily together, and who could think and feel together also. If he had musical companions to his house they cost him heavily for suppers, and corrupted the minds of his children. For most singers, he said—and I suspect that he could not easily libel the good table-companions of the sixteenth century—most singers are drunken, gluttonous, impudent, unsettled, impatient, stolid, inert, ready for every kind of lust. The best men of that sort are fools¹. Upon such men, despising them but relishing their music, Cardan squandered a good deal of his money.

One day, at the end of August (1542), Vicomercato announced a sudden change in his own life, and he was not to be satisfied unless Cardan would swear—as he did

¹ De Util. ex Adv. Cap. Opera, Tom. ii. p. 117.

swear by all the gods—never to come to him again for the purpose of dice-playing. Jerome took wholly to study, but his golden goose was dead, and his penury was sudden and extreme. He had neglected all legitimate resources. We can scarcely doubt the object of the trip to Florence which immediately followed, since we are told that he went to join the free-handed Marquis d'Avalos. D'Avalos, Marquis del Guasto, was always even more ready to give than Cardan to take; he offered in the course of his intercourse with the philosopher, by whom he had been courted, more than Jerome thought it proper to receive, but he had received from D'Avalos some help, and that not inconsiderable¹. On his way home he visited his patron Sfondrato, who was then Governor of Sienna. Then he came back to Milan, fortune frowning².

While matters were in this state with Cardan, fortune was, as usual, frowning upon Italy, and the distracting wars of which the traces lie about this narrative, as they must leave marks on the life of almost every man who

¹ "Sua eccellentia è di prima di Millano di dottrina, ed il Marchese dal Vasto gli ha dato una gran provisione per la sua sofficiencia," said Cardan's agent to Tartaglia in 1539. *Quesiti et Inventiones diverse*, p. 116. This will be discussed in the next chapter. See also *De Vita Propria*, cap. iv.

² *De Libris Propriis. Liber ultimus. Opera*, Tom. i. p. 106.

worked in that most miserable age, compelled a removal to Milan of the University of Pavia¹. As the same wars crippled the university funds, and the professors could not get their salaries, very few of them thought it worth their while to come to Milan with their chairs; many chairs, therefore, were vacant, and among them that of Medicine, which was again offered by the senate to Cardan². He had before refused it, because he did not think the salary secure; when, however, the office was brought home to his own door, at which the wolf was sitting all day long, the poor philosopher thought very wisely, that even to have money owing to him would beget a financial state much more respectable than hopeless want; there was also a decided gain of respectability in point of position. The Plat lectureship only required his services on holidays, and was no introduction to a regular professor's chair. As for his duties to the University of Pavia, while its lectures were delivered at Milan they would not take him far out of his way, or require the abandonment of any of his home resources. He could cultivate his practice, indeed, all the more easily for holding rank in his own town as a Professor of Medicine as well as Mathematics. Work he must, for at this time a

¹ De Libris Propriis. Liber ultimus. Opera, Tom. i. p. 106.

² De Vitâ Propriâ, cap. xxxvii.; where will be found authority for all that follows on this subject.

third child was born to him, a boy, whom he named Aldo¹.

He therefore accepted office, and delivered lectures, like his colleagues, to bare benches until the conclusion of that academic year². The academy proposed then—the tide of war having retreated—to return to its own groves, and Cardan certainly did not propose to go to Pavia with it, deterred by the old reason, the broken fortunes of the place, and the extreme uncertainty connected with the stipends payable for teaching. Quite prepared to remain where he was, Jerome went to bed as usual on the night before he was to return his answer to the senate, which required to know whether he would abide by his professorship and teach in Pavia. He went to bed in the usual way with his wife, his eldest boy, Giovanni Batista, ten years old, and Aldo, the baby, all under one cover; but wonderful to relate, on that night the house tumbled down. Nobody was hurt, but his home in Milan being thus suddenly and literally broken up, as he believed of course, by a special and miraculous dispensation, he changed the tenor of his answer to the senate, and in the year 1544 consented to remove.

The salary to be received by him at Pavia would be two hundred and forty gold crowns³. For the anxiety shown

¹ De Vitâ Propriâ, p. 20.

² Ibid. cap. vi.

³ De Lib. Propr. Op. Tom. i. p. 108.

by the senate to retain his services, and for his first appointment as a teacher in the university, Cardan knew himself to be indebted to his patron, Cardinal Sfondrato, who had by good chance returned to Milan, and assisted his much-trusted physician in the hour of need¹.

¹ De Vitâ Propriâ, cap. xv.

CHAPTER XII.

OF THE GREAT ALGEBRAIC QUARREL THAT AROSE BETWEEN MESSER HIERONIMO CARDANO AND MESSER NICOLA TARTAGLIA—WHAT LETTERS PASSED, AND HOW TARTAGLIA FELT THAT IT WAS DUE TO HIMSELF TO MAKE THE CORRESPONDENCE PUBLIC.

BUSY and restless, never spending his time wholly upon one pursuit, Jerome, in his mature years, led a life of which the annals would be now and then distracting if they were too strictly told off year by year. The events, therefore, of the period between the years 1539 and 1545, with which we are at present occupied, I think it best to group according to their nature. Of his public literary life up to the year 1542, and of his domestic life to the end of the year 1544, sufficient account has now been given. In the year 1539, however, there commenced a connected series of studies and endeavours that were concurrent with a multitude of other labours, and that remained private until the year 1545. They then resulted in the publication of a book, which was, in fact, Jerome's greatest work, and which must at all times form an important topic in

connexion with the history of Mathematics. The whole story of this book I shall attempt now to tell in a connected way. The work in question is Cardan's Book of the Great Art—his Algebra—a volume so especially important, and begotten in so quaint a way, that whether I wished this narrative to be read chiefly for information or amusement, it would equally be fit that it should therein be put prominently forward.

That a long chapter upon Algebra should be one of the most essential parts in the biography of a physician, is a fact perfectly characteristic of the state of learning in the sixteenth century. Physic was then allied not only with chemistry, but had an alliance equally strong with alchemy, astrology, and mathematics. There is a relic of this old state of things left to us in the continued imputation of a well-known astrological almanac to Francis Moore, Physician. The first book of algebra published in this country, entitled the *Whetstone of Witte*, which is the seconde parte of *Arithmetike*, by Robert Recorde, describes its author (he died in the Fleet Prison) as "teacher of mathematics and practitioner in physic at Cambridge¹." A more

¹ Robert Recorde taught mathematics at Oxford, and was admitted to practise physic afterwards at Cambridge. I cannot precisely verify the above reference, which I adopt from Hutton's *Mathematical Dictionary*; it may be correct. In the first edition of "*The Whetstone of Witte*"—the only one I have seen—the author, whose name is not on the title-page, writes himself in the dedication, "Robert Recorde, Physician," only. He was a man abounding in inventions, the first ven-

striking illustration of the intimate connexion that existed formerly between these sciences, is to be found in that part of Don Quixote which relates how the bachelor

turer in many arts. Poor fellow! He, if not his teaching, fell among thorns. Soon after the publication of the Whetstone, he died in gaol for his poverty. In England, at any rate, they were not in those days the learned who grew rich. At the close of the preface to this book he deprecated hasty criticism; for, he said, "by occasion of trouble upon trouble, I was hindered from accomplishing this worke, as I did intende. But yet is here moare, then any manne might well looke for at my hands, if thei did knowe and consider myne estate." The abrupt close of the book (it is all written in English dialogue) is very touching, and may awaken now, three centuries too late, many a warm feeling of sympathy. An abstruse dissertation upon Universal Roots is suddenly thus interrupted:

"MASTER. You saie truth. But harke, what meaneth that hastie knockyng at the doore?

SCHOLAR. It is a messenger.

MASTER. What is the message? tel me in mine eare.

Yea, sir, is that the matter? Then is there no remedie, but that I must neglect all studies and teaching, for to withstande those daungers. My fortune is not so good, to have quiete tyme to teache.

SCHOLAR. But my fortune and my fellowes is much worse, that your unquietnes so hindereth our knowledge. I praie God amende it.

MASTER. I am inforced to make an eande of this mater: But yet will I promise you, that whiche you shall chalenge of me, when you see me at better laiser: That I will teache you the whole arte of universall rootes. And the extraction of rootes in all square surdes: with the demonstration of them, and all the former woorkes.

If I might have been quietly permitted to reste but a little while longer, I had determined not to have ceased till I had ended all these thinges at large. But now, farewell. And applie your studie diligently in this that you have learned. And if I maie gette any quietnesse reasonable, I will not forget to performe my promise with an augmentation.

SCHOLAR. My harte is so oppressed with pensivenes, by this sodaine unquietnesse, that I can not expresse my grief. But I will praie, with all them that love honeste knowledge, that God of his mercie will sone ende your troubles" (soon, indeed, in death), "and graunte you suche

Samson Carrasco, being thrown from his horse by the knight, and having his ribs broken, sent—it is said quite naturally—for an algebrist to heal his bruises¹. Keeping in mind this old association of ideas, we find that there was nothing exceptional in the position of Cardan as teacher of mathematics and practitioner in physic, nothing odd in his combination of the callings of an almanac-maker, an algebrist, and a physician.

Robert Recorde's book, just mentioned, was published in 1557, and as Cardan's book of the great art was then already twelve years old, it may be justly inferred that Cardan was one of the first European writers upon algebra. It is necessary that we should now understand *reste as your travell doth merite. And all that love learnyng say thereto, Amen.*

MASTER. Amen, and amen." They were the last words he printed.

Robert Recorde's books had quaint titles, fanciful and witty, sometimes half-metrical, prefaces, and had bits of his verse scattered upon the front of them. The spirit of the title to the work mentioned above may be briefly expressed in four lines writ on the title of a previous book, *The Pathwaie of Knowledg*:

"Geometrie's Verdicte.

All fresshe fine wittes by me are filed ;

All grosse, dull wittes wishe me exiled.

Though no mann's witte reject will I,

Yet as they be, I wyll them trye."

¹ "En esto fueron razonando los dos hasta que llegaron á un pueblo donde fué ventura *hallar un Algebrista con quien se curo el Sanson desgraciado.*" D. Quijote. Part. ii. cap. xv. I was directed to this passage by Hutton's Mathematical Dictionary, article Algebra. The general information contained in this chapter is chiefly derived from the same source, and from Montucla's History of Mathematics when no other authority is cited.

somewhat accurately his true place in the history of that science. Of the antiquities of algebra nothing need here be said, unless, perhaps, it is worth while to note that the art probably was born in Hindostan, and that its present name is that given to it by the Arabs, through whom it reached Europe. The Arabic name "al-jabr" is a term which denotes one method of reducing equations, namely by transposing or adding the negative terms so as to make them all affirmative. From the Moors algebra came first into Europe by way of Italy and Spain. The first person known to have brought the art into Italy—before there existed printed books—was Leonard Bonacci, of Pisa, who composed an arithmetic in the year 1202, and wrote more on the subject twenty-six years afterwards, adding some information upon algebra, the knowledge of which extended then only to the solution of equations of the first and second degree. Bonacci's language was a barbarous mixture of Latin with Italian, and there was in his time no notation by the use of signs. From Pisa the art spread through Tuscany and Italy, so that there were authors who obtained much reputation in it before there was any press from which their works could issue.

The first printed author upon algebra¹ was a cordelier,

¹ After the discovery of printing, in mathematics, as in other departments of learning, the press was at first employed chiefly in the reproduction of the writings of the ancients. In 1505, Luca de Borgo translated Euclid. In 1518, Plato of Tivoli translated the Spherics of Theo-

or minorite friar, Luca Paccioli, commonly called Fra Luca di Borgo, of Borgo San Sepolcro. He is the same Fra Luca whose errors Cardan pointed out in his "Arithmetic." Luca di Borgo had been trained at Venice by Domenico Bragadini, and having increased his knowledge by long travel in the East, taught his science afterwards at Naples, Venice, and Milan, in which last place he was the first who filled a chair of mathematics. It was founded for him by Lodovico Sforza. He had many disciples, whom he names in his works. He translated Euclid into Latin; or, more properly speaking, he revised the already existing translation of Campanus, and augmented it with notes. He also wrote several treatises, that were printed between the years 1470 and 1494, the last being entitled (in the second edition) "*Summa de Arithmetica, Geometria, Proportioni è Proportionalita, nuovamente impressa in Toscolano su la riva dil Benacense e unico car-pionista laco: amenissimo sito,*" &c., the rest of the title-page is further praise of the place in which the good monk had resided during the printing of his book; the same lake of Benacum, or Lago di Guardo, in which Cardan,

dosius. Memmius, a noble Venetian, translated at the same time Apollonius. Venatorius (Jäger?) and Herweg, printers of Basle, published in 1544 a Latin translation of Archimedes and his commentator Eutochius. Tartalea, in 1557, translated the fifteen books of Euclid into bad Venetian Italian, with a commentary. See Montucla's *Histoire des Mathematiques*, vol. i. bk. 3.

during his student days, was nearly drowned. It will be remembered that Cardan related how, at supper, after their escape, he was the only one who had a ready appetite for the fine pike that was brought to table. Fra Luca, with a clerical enjoyment of good living, took so heartily to the fine carp of the lake, that he could not forbear from making honourable mention of them on his title-page ; indeed, the directing attention to the carp, and the antiquities of the locality, occupies more space there than the actual naming of the book¹.

In the time of Luca di Borgo, the great art extended to

¹ The preceding details concerning Luca di Borgo are drawn from Montucla, *Hist. des Mathematiques*. Paris (an vii.), vol. i. p. 549. The first edition of the book referred to in the text being very scarce, Montucla had not seen it. Copies of both the first and second editions (the latter with its curious title-page deficient) are in the British Museum. The first was printed at Venice in 1494, before Brother Luke had made acquaintance with the carps of the Lago di Guardo. It is entitled simply, "*Summa de Arithmetica, Geometria, Proportioni & Proportionalita*," and has the contents printed on the title-page. The title-page to the second edition is formed in precisely the same way, with this interpolation, "*Nouamente impressa in Toscolano su la riu a dil Benacense et unico carpionista Laco; Amenissimo Sito: de li antique ed euidenti ruine di la nobil cita Benaco ditta illustrato: Cum numerosita de Imperatorij epitaphij di antique e perfette littere scul-piti dotato: e cum finissimi e mirabil colone marmorei: innumeri fragmenti di alabastro porphidi e serpentini. Cose certo letto mio diletto oculata fide miratu digne sotterra si ritrouano.*" The date of this second edition is 1523, so that Brother Luke's enthusiasm on the subject of the carp, and of the fine remains of the old city of Benacum on its shores, was being excited at about the same time when Cardan and his companions broke their mast upon the lake, and supped upon a pike at Sermione. Of the imperial inscriptions, the fine marble columns,

quadratic equations, of which only the positive roots were used; there was but one unknown quantity assumed, and there was no use made of marks or signs, except a few abbreviations. Algebra was then used only for the solution of a small class of numeral problems.

In or about the year 1505, the first rule for resolving one case of a complex cubic equation ($x^3 + bx = c$) was discovered by Scipio Ferreus, of Bologna. This is the discovery to which a reference was made at the beginning of the ninth chapter of the present work; and from this point the history of Algebra in Italy has an immediate bearing on the story of Cardan. Ferreus taught his rule to a pupil named Antonio Maria Fior (Latinised, Florido, or, we should say in English, Flower), who, thirty years afterwards, presuming on his knowledge of it, challenged and triumphed over his contemporaries. It was at that time usual for men skilled in any art or science to send tough questions to each other for solution, and to provoke each other to stake money or reputation upon intellectual encounters. The advancement of learning was unquestionably hastened by such means. Master Flower's unanswerable problems, and the pains he took to flout his knowledge of a secret rule in the face of his brother mathematicians, caused him to be rather troublesome innumerable fragments of alabaster, porphyry, and serpentine, to which Fra Luca called attention, no trace, I believe, remains to excite notice in the present day.

some. Antonio Maria Fior, who was a Venetian, at last, in 1535, provoked into a wager a hard-headed man of Brescia, Nicolo Tartaglia, then resident in Venice. Each algebrist was to ask of the other thirty questions; and he who had first answered the questions put to him should win from the other as many entertainments for himself and friends; it was a bet, in fact, of thirty suppers. Plenty of time was given for the concoction of the problems, and a distant day fixed upon which the match was to come off.

Tartaglia (Latinised, Tartalea) was a hard-headed man. He was born of a very poor and humble family. His father, Michele, was known only by his Christian name, or rather by its diminutive; for being a very little fellow (the son, Nicolo, was little too) he was called Micheletto; —Micheletto the Rider, since he was a postman. He kept a horse, and his business was to carry letters from the noblemen and gentlemen of Brescia—the town in which he lived—to Verona, Bergamo, and other towns. Micheletto was an honest little being, who contrived to find rude schooling for his children; Nicolo, therefore, when four or five years old, had some instruction. But it was only in his early childhood that he had it, for when he was but six years old his father died, leaving him with a brother older than himself, a younger sister, and a widowed mother in the extremest poverty. When afterwards the

French, under Gaston de Foix, sacked Brescia¹, the poor widow, with Nicolo and her little daughter, fled for refuge, following a crowd of helpless men, women, and children into the cathedral. There, however, they were not entirely safe; and Nicolo, a boy of twelve, received five sword wounds upon the head that were almost mortal—three upon the skull and two upon the face. The stroke upon the face cleft both lips, struck through his upper jaw into the palate, and broke many of his teeth. Having those wounds he could not speak, or take any but liquid food. His mother took him home, and, being much too poor to pay a surgeon or to buy ointments, treated him herself upon a system which she borrowed from the dogs. Knowing that the whole system of canine surgery consisted in incessant licking of all wounds, she supposed that she might heal her son by frequent washing and most scrupulous regard to cleanliness. Under such care from his mother's hands, Nicolo's wounds did really heal in a few months, leaving scars, he tells us, that would afterwards have made a monster of him, if they had not been covered by his beard. The boy, when recovered, was for a long time so hardly able to pronounce his words, that he was called by his young companions "Tartaglia," stutterer; and as his father had not transmitted to him any

¹ The sack, it may be remembered, lasted seven days, during which the French boasted of having slaughtered indiscriminately forty-six thousand inhabitants.

known family name, he was content to adopt, seriously, the nickname given to him, as a perpetual memorial of his misfortune.

The mother of Tartaglia was unable to provide for him any instruction. Therefore, when he was about fourteen years old, he put himself to school to learn to write, and in fifteen days learnt to make letters as far as k, but there his schooling ended. The schoolmaster's first copy-book reached only to k; when that was finished by a pupil he received another, upon which were the remaining letters. Nicolo had put himself to school without the means of paying for instruction, so that the fifteen days represented the extent of his credit; that being exhausted, since he had no money, he had nothing more to spend, and very properly retired. He contrived to go away, however, with the master's second copy-book, out of which he taught himself, and which he did not afterwards return. In plain words, he stole instruction in the rudiments of writing. From that day he declares that he had no other teaching than what he could get through the help of a daughter of Poverty, called Industry¹.

¹ The above sketch of the early life of Tartaglia is taken from the autobiographic details given in his own work, "*Quesiti et Inventioni Diverse de Nicolo Tartalea Brisciano*," Venice, 1546, where it occurs in a dialogue between himself and the Prior di Barleta. Lib. vi. Quesito 8, pp. 75, 76. The end of it, "*da quel giorno in qua, ma piu fui ne andai da alcun precettore, ma solamente in compagnia di una figlia di poverta, chiamata industria*," is at variance with the details

Tartaglia carried his own tale no further; others, however, who were his neighbours, have done that for him; and, if their report be true, he was not so entirely self-instructed as he claimed to be. In any case, there can be no doubt that he may still fairly enough be said to have become wholly by his own exertions a distinguished mathematician, as it is also certain that he grew to be like many other self-taught men, rugged and vain. It is said of him, that, in the year 1499, by the earnest entreaties of his mother, who could not support him, he was taken to study at Padua by Lodovico Balbisonio—a noble youth of his own town. That he returned to Brescia with his patron, and there showed himself to be so avaricious, so morose, and rude, that he was hated by his fellow-citizens. That being obliged to quit them and to live elsewhere, he travelled and made money; thriving especially at Venice. That he returned to Brescia to teach Euclid, but that again his fellow-townsmen would not tolerate him, and that thereupon he again went to Venice, prospered, and died old. He did not acquire any command over Latin; and when he wrote, it was in his own bad Venetian dialect. He must, however, have known how to read, although he did not trust himself to write the learned language which follow, for which I am indebted to Papadopoli, *Gymn. Patav.* vol. ii. pp. 210, 211. Papadopoli—whose little biographic sketches of men who have been connected with his university, are by no means always accurate—cites Rubeus, one of Tartaglia's contemporaries, a writer very well acquainted with Venetian affairs and people.

guages, for he translated Euclid, and was compelled to study Latin works on mathematics.

Tartaglia then, settled in Venice, set to work with all his might to prepare himself for his contest with the before-mentioned Antonio Maria Fior; and while in bed one night, eight days in advance of the time of meeting, he thought out his rival's secret; discovering not only the rule of Scipio Ferreus for the case $x^3 + bx = c$, but also a rule for the case $x^3 = bx + c$. He prepared himself accordingly. He took care to propose for the perplexing of his antagonist several problems that could be solved only according to the latter rule, then first discovered by himself. The questions put to him in return he knew would hinge upon the rule of Ferreus. The event proved that he was right; and when the day of trial came Tartaglia answered all the questions on the list presented to him by his adversary in two hours, before Florido had solved one of the problems offered to him. The victor waived his right to thirty entertainments, but achieved a lasting triumph.

These rules were discovered by Tartaglia on the 12th and 13th of February, 1535. Five years earlier he had discovered two other rules (for the cases $x^3 + ax^2 = c$ and $x^3 = ax^2 + c$) on the occasion of questions proposed by a schoolmaster at Brescia, Zuanne da Coi (which would in English be, John Hill).

Except these discoveries, there was nothing in the

mathematical knowledge or doctrine of Tartalea which placed him in advance of other scholars of his time. He understood thoroughly the mathematical knowledge of his day, and used it very skilfully. His new rules concerning cubic equations he maintained as his private property, cherishing them as magic arms which secured to him a constant victory in algebraic tilts, and caused him to be famed and feared. That was a selfish use to make of scientific acquisitions, with which no scholar of the present day would sympathise, and which, also, in the sixteenth century, would have been thought illiberal by students like the pattern man of letters, Conrad Gesner, or even our erratic and excitable Cardan.

Cardan, when his work upon arithmetic approached completion, made an attempt to procure the publication of Tartalea's rules. Four years had elapsed since the famous contest of Tartalea with Fior (or Florido), when, in the beginning of 1539, Cardan applied through a bookseller to the victor, with compliments, and a submission of critical problems after the customary fashion. Then there were sown the seeds of a great quarrel, the growth of which Tartalea himself has chronicled with jealous care.

It should be understood that not many months before the commencement of the correspondence between Nicolas Tartalea and Jerome Cardan, Tartalea had published a

small tract at his own expense on the New Science of Artillery (its preface is dated December 20, 1537)¹. He was indeed one of the first men who perceived that there was any science to be taught at all to men having the care of cannon. Another and larger original work was published, also at his own expense, in the year 1546, at Venice, where he lectured publicly on mathematics. It is entitled *Divers Questions and Inventions*², is dedicated to our Henry VIII., and contains nine books, which are, in fact, the diary and commonplace-book of his life as a mathematician. In it are set down, year after year as they came, the questions proposed to him at different times by friends and rivals on mechanics, statics, hydrostatics, &c., during twenty years ending in 1541. It con-

¹ "Nova Scientia inventa da Nicolo Tartalea B." The title-page is chiefly occupied by a large plate, which represents the courts of Philosophy, to which Euclid is doorkeeper, Aristotle and Plato being masters of an inmost court, in which Philosophy sits throned, Plato declaring by a label that he will let nobody in who does not understand Geometry. In the great court there is a cannon being fired, all the sciences looking on in a crowd—such as Arithmetic, Geometry, Music, Astronomy, Cheiromancy, Cosmography, Necromancy, Astrology, Perspective, and Prestidigitation! A wonderfully modest-looking gentleman, with his hand upon his heart, stands among the number, with a you-do-me-too-much-honour look upon his countenance; Arithmetic and Geometry are pointing to him, and under his feet his name is written—NICOLO TARTALEA.

² "Quesiti et Inventioni Diverse de Nicolo Tartalea Brisciano."—"Stampata in Venetia per Venturino Ruffinelli ad instantia et requisitione, et à propria spese de Nicolo Tartalea Brisciano Autore. Nel mese di Luio L'anno di nostra salute. M.D.XLVI."

tains forty-two dialogues, in the last of which one speaker is Mr. Richard Wentworth, an English gentleman who had been taught by Tartalea at Venice. Among other matter in the ninth book of this volume is the record kept by the jealous Nicolo of all his early dealings with Cardan, minutes of conversations and copies of correspondence which he there printed, as he threatened that he would, when he considered himself to have been grievously ill-used by Jerome, as a way of publishing his misdeeds to the world. The chronicle begins with Jerome's application before mentioned, of which Tartalea had made in his diary an ample memorandum in the manner following: (I should explain that two old terms employed in mathematics, where they occur occasionally, in the course of this correspondence, I have thought it proper to retain. The quantity represented now by x used to be called the cosa, or in Latin, res, and x^2 was known as the census.)

"Inquiry made by M. Zuan Antonio, bookseller, in the name of one Messer Hieronimo Cardano, Physician and public reader of Mathematics in Milan, dated January 2nd, 1539¹.

ZUAN ANTONIO. Messer Nicolo, I have been directed to you by a worthy man, physician of Milan, named Messer

¹ Op. cit. Lib. ix. p. 115.

Hieronimo Cardano, who is a very great mathematician, and reads Euclid there in Milan publicly, and who is at present causing to be printed a work of his on the Practice of Arithmetic and Geometry and Algebra, which will be of some note. And because he has understood that you have been engaged in disputation with Master Antonio Maria Fior, and that you agreed each to propose thirty cases or questions, and did so; and his excellency has understood that the said Master Antonio Maria proposed to you all his thirty which led you in algebra to a case of the cosa and cube equal to the number. And that you found a general rule for such case, and by the so great strength of your invention you had resolved all the said thirty questions proposed to you at the end of two hours. Therefore his excellency prays you that you will kindly make known to him that rule discovered by you, and if you think fit he will make it public under your name in his present work, but if you do not think fit that it should be published he will keep it secret.

NICOLO. Tell his excellency that he must pardon me; when I propose to publish my invention, I will publish it in a work [of my own, and not in the work of another man, so that his excellency must hold me excused.

ZUAN ANTONIO. If you object to make known to him your discovery, his excellency has bidden me to pray that you will, however, give him the said thirty questions

that were proposed to you, with your resolution of them, and at the same time the thirty questions that were proposed by yourself.

NICOLO. I cannot do that, because as soon as he shall have one of the said cases with its solution, his excellency will at once understand the rule discovered by me, with which many other rules may perhaps be found, based on the same material.

ZUAN ANTONIO. His excellency has given me eight questions to give you, praying that you will resolve them for him. The questions are these:

1. Divide me ten into four parts in continued proportion, of which the first shall be two.

2. Divide me ten into four parts in continued proportion, of which the second shall be two.

* * * * *

6. Find me four quantities in continued proportion, of which the second shall be two, and the first and fourth added shall make ten.

7. Make me of ten three parts in continued proportion, of which the first multiplied by the second will make eight.

8. Find me a number which multiplied by its root plus three will make twenty-one.

NICOLO. Those are questions put by Messer Zuanne da Coi, and by no one else. I know them by the two

last, because a similar one to that sixth" [seventh ?] "he sent to me two years ago, and I made him confess that he did not understand the same, and a similar one to that last (which induces an operation of the square and cube equal to the number) I gave him out of courtesy solved, not a year ago, and for that solution I found a rule specially bearing upon such problems.

ZUAN ANTONIO. I know well that these questions were given to me by his said excellency, Messer Hieronimo Cardano, and no other.

NICOLO. Then the said Messer Zuanne da Coi must have been to Milan and proposed them to his excellency, and he, being unable to resolve them, has sent them to be worked out by me, and this I hold for certain, because the said Messer Zuanne promised me a year ago that he would come here to Venice, but for all that he has never been, and I think he has repented of his purpose and given its turn to Milan.

ZUAN ANTONIO. Do not think that his excellency would have sent you these problems if he had not understood them and known how to solve them, or that they proceed from another person, for his excellency is one of the most learned men in Milan, and the Marquis dal Vasto has given him a great provision for his competency.

NICOLO. I do not deny that his excellency is most

learned and most competent. But I affirm that he would not know how to solve these seven problems which he sent for me to work out by the general rule. Because if his excellency does not know how to solve that of the *cosa* and cube equal to the number (which you have besought of me with so much entreaty), how could he know how to solve the greater part of these, which conduct to operations of a much stranger kind than that of the *cosa* and cube equal to the number; so that if he knew how to solve all these problems, much more easily would he know how to solve that of the *cosa* and cube equal to the number, and if he knew it I am sure that he would not go begging and seeking for it.

ZUAN ANTONIO. I know not how to answer you, because I do not understand these things, but whenever you speak with him I believe that he himself will know what to reply. However, let all those matters pass, and that I may not have lost my pains in coming, give me at any rate the simple copy of the thirty cases that were proposed to you by the said Master Antonio Maria Fior, and if you can also give me a copy of the thirty questions that were asked by you of him you will do me the greatest favour.

NICOLO. Of his (though I can ill spare time) I will make you a copy, but mine I cannot let you have, because I have no copy at hand, and I cannot exactly re-

member what they all were, because they were all dissimilar; but if you go to the notary, he will no doubt be able to give you a copy.

ZUAN ANTONIO. Be pleased, then, to give me his.

NICOLO. They are these precisely as he wrote them:—
'Glory to God, 1534, the 22nd day of February, in Venice.

'These are the thirty arguments proposed by me, Antonio Maria Fior, to you, Master Nicolo Tartaglia.'"

It is not requisite to quote them here. From this account given, by Tartalea himself, it appears that Jerome's application was of a reasonable kind. Tartalea had been during four years in possession of his knowledge, and had published nothing but his small work on Artillery, that too, though he was a poor man, at his own expense. There was no reason to believe that Tartalea designed to publish what he knew in any independent work on mathematics. Moreover, there seems to have been no publisher willing to print at his own cost the writings of a man who could not address the learned in the language properly appointed for their use, or could not write even Italian otherwise than in the very dialect to which he had been born. It was therefore just and natural that Cardan should propose the embodiment in his own treatise of Tartalea's additions to the science about which he wrote, with a due publication of his claims as a discoverer. If,

however, Nicolo desired to keep his knowledge to himself, then it was necessary for the advance of his favourite science that Cardan should acquire it in some other way. Something he had already discovered, and he hoped from any calculations that he might persuade Tartalea to furnish that he could obtain hints by which he would be assisted in discovering the whole of the secret kept with too much jealousy from the science to which it belonged. Tartalea repelled every advance of this kind, so unceremoniously, that Jerome, who was hot in disputation, fell into a rage, and wrote a very angry letter, which Tartalea has printed, and which I append in full. It was of course not written for print, and is an example of the kind of impatient violence which Cardan used in private arguments, but always abstained from carrying into his books. Had not Tartalea published the whole quarrel, very little trace would have been left of it, for Jerome put no wrath or malice into works deliberately written for posterity. I desire also, for a reason that will afterwards appear, to call attention to the manner in which mention is made of the Marquis del Guasto in the dialogue just quoted, and in the succeeding letter.

Letter from Cardan to Nicolo Tartalea, dated the 12th of February, 1539¹.

“ I wonder much, dear Messer Nicolo, at the unhand-

¹ Tartalea. Quesiti et Inventiori Diverse. Lib. ix. p. 117. In translating these letters I provide them with more stops than I find in the original. Tartalea wrote his book in the Venetian dialect, to which he was accustomed—a kind of Italian most familiar to English readers, as it is to be seen moderately caricatured in some of Goldoni's plays, as, for example, in the Poeta Fanatico. Moreover, Tartalea corrected the press badly, and allowed sentences to be printed one into another in a very reckless way. I quote in illustration the first sentence of this letter by Cardan, as printed by Nicolo Tartalea: “ Mi marauiglio molto Messer Nicolo caro de si disconueneuole risposta haueti data à uno Zuan Antonio da Bassano libraro el quale da mia parte ui ha pregato li uolesti dare la risposta di sette, ouer otto questioni le quale ui mandai, e la coppia delle proposte fatte tra uoi e Maestro Antonio Maria Fior con le sue solutioni alle quale non ui e bastato di non mandarmene niuna saluo che quelle de Maestro Antonio Maria le quale sono 30 proposte ma re uera quasi una sola sostantia, cioe cubbo è cosa equal à numero, pero mi doglio tra l'altre disgratie di questa arte che quello li danno opera sono tanto discortesi è tanto presumeno di se stesso, che non senza cagion sono indicati dal uulgo apresso che pazzi à cio ui caui fora de questa fantasia della quale cauai nouamente messer Zuanne da Coi, cioe d'essere il primo homo del mondo donde se partito da Millano per disperato, ne uoglio scrivere amoreuolmente e trarui fori di fantasia che uoi ui crediati essere si grande ui faro conoscere con amoreuole admonitioni per le uostre parole medesime che seti piu apresso a la ualle che alla sumita del monte, potria ben essere che in altra cosa fosti piu esercitato, e ualente che non dimostrati per la rispesta e prima ui auiso pero che ui ho hauuto in bon conto e subito ariuio li uostri libri sopra le artegliarie ne comprai doi che solo porto Zuan Antonio delli quali uno ne dette al Signor Marchese, e l'altro tene per mi et oltra cio ui laudai molto al Signor Marchese pensando fosti piu gentil reconoscitore, e piu humano e piu cortese, e piu sufficiente de Messer Zuanne qual uoi allegati, ma mi pare poca differentia da luna à laltro se altro non mostrati hora peruenire à fatti ne accuso in quatro cose de momento.” That is a tolerable scolding for a man to utter in a single breath. Tartalea was evidently determined to allow no point to remain in Cardan's abuse of him.

Original from

some reply you have made to one Zuan Antonio da Bassano, bookseller, who on my part prayed that you would give him answers to the six or eight questions that I sent you, and the copy of the propositions exchanged between you and Master Antonio Maria Fior, with their solutions, to which it was not enough for you to return nothing but the questions of Master Antonio Maria, which are thirty in number but one only in substance, that is to say, treating of cube and cosa equal to the number, but it grieves me much that among other discomforts of this science those who engage in it are so discourteous, and presume so much on their own worth, that it is not without reasons they are called fools by the surrounding vulgar. I would pluck you out of this conceit, as I plucked out lately Messer Zuanne da Coi, that is to say, the conceit of being the first man in the world, wherefore he left Milan in despair; I would write to you lovingly" [he writes in a rage] "and drag you out of the conceit of thinking that you are so great—would cause you to understand from kindly admonition, out of your own words, that you are nearer to the valley than the mountain-top. In other things you may be more skilled and clever than you have shown yourself to be in your reply; and so I must in the first place state that I have held you in good esteem, and as soon as your book upon Artillery appeared, I bought two copies, the only ones that Zuan Antonio brought, of which I gave one to

Signor the Marquis, thinking you capable of more courteous recognition, more refined, more gentlemanly, and more competent than Messer Zuanna as you allege yourself to be, but I see little difference between one and the other; if there be any you have not shown it. Now to come to facts, I accuse you upon four important points.

The first is, that you said my questions were not mine, but belonged to Messer Zuanne Colle; as if you would have it that there is no man in Milan able to put such questions. My master, clever men are not discovered by their questions, as you think, but by their answers; therefore you have been guilty of very grave presumption. There are many in Milan who know them; and I knew them before Messer Zuanne knew how to count ten, if he be as young as he would make himself.

The second is, that you told the bookseller that if one of the questions of Master Antonio Maria could be solved, all mine would be solved. I ask you, for mercy's sake, with whom you think that you are speaking? With your pupils, or with men? Where did you ever find that the discovery of the root *pronica media*¹, which lies at the bottom of the solution of all the thirty questions of Master Antonio Maria, which is founded on the

¹ "Doue trovasti uoi mai che la inventione de la radice *pronica media*, la quale è il fondamento de posse essere la resolutione d'una questione di cubo è numero equal a censo."

eighth problem of the sixth book of Euclid, could resolve a question of cube and number equal to the census, under which section is to be ranked the proposition which says, 'Find me four quantities, in continuous proportion, of which the second shall be two, and the first and fourth shall make ten.' I speak in the same way of the others, so that while you wished to show yourself a miracle of science to a bookseller, you have shown yourself a great ignoramus to those who understand such matters; not that I myself esteem you ignorant, but too presumptuous; as was Messer Zuanne da Coi, who thinking to get credit for knowing what he did not know, lost credit for knowing what he did.

The third point is, that you told the said bookseller that if one of my questions were solved all would be solved, which is most false, and it is a covert insult to say that while thinking to send you six questions, I had sent but one, which would argue in me a great confusion of understanding; and certainly, if I were cunning, I would wager a hundred scudi upon that matter; that is to say, that they could not be reduced either into one, or into two, or into three questions. And, indeed, if you will bet them, I will not refuse you, and will come at an appointed time to Venice, and will give bank security here if you will come here, or will give it to you there in Venice if I go thither. This is not mere profession,

for you have to do with people who will keep their word.

The fourth is a too manifest error in your book entitled the New Science of Artillery, in which you will have it, at the fifth proposition of the first book, that no body of uniform weight can traverse any space of time or place by natural and violent motion mixed together; which is most false, and contrary to all reason and natural experience. The argument with which you prove it is still more extraordinary than the answer you gave to the bookseller. Do you not know that it is unsuitable? In its descent a body moves with increased velocity, and in forward progress it moves with diminishing speed, as we see in the throwing of a stone, which, as it descends, comes faster and faster to the earth, but when it left the hand went more and more slowly, from which you may draw other strange arguments in the said book, if you have it in mind that men of sense are not to be contradicted lightly. I shall be held excused, I hope, for contradicting you, because, in treating of artillery, which was little in your vocation, you exerted yourself to say something notable, and you must not, for my rudeness, think that I am like yourself and Messer Zuan Colle.

I send you two questions with their solutions, but the solutions shall be separate from the questions, and the messenger will take them with him; and if you cannot solve the questions he will place the solutions in your

hand. You shall have them each to each, that you may not suppose I have sent rather to get than to give them; but return first your own, that you may not lead me to believe that you have solved the questions, when you have not.

In addition to this, be pleased to send me the propositions offered by you to Master Antonio Maria Fior, and if you will not send me the solutions, keep them by you, they are not so very precious. And if it should please you, in receiving the solutions of my said questions—should you be yourself unable to solve them, after you have satisfied yourself that my first six questions are different in kind—to send me the solution of any one of them, rather for friendship's sake, and for a test of your great skill, than for any other purpose, you will do me a very singular pleasure.

The first question: Make me of ten four quantities in continued proportion whose squares added shall make sixty. A like question is put by Brother Luca, but he does not answer it.

The second: Two persons were in company, and possessed I know not how many ducats. They gained the cube of the tenth part of their capital, and if they had gained three less than they did gain, they would have gained an amount equal to their capital. How many ducats had they?

HIERONIMO CARDANO, Physician."

To this letter Tartalea replied categorically on the 18th of February, 1539¹, at such very great length, that I must be content to quote only the few passages which bear immediately on our present subject. It must be quite obvious that the mention made in the preceding letter of Alphonso d'Avalos, Marquis del Guasto, was altogether natural. Cardan knew when the tract on artillery came out, that Tartalea possessed a bit of mathematical knowledge which he himself was desiring greatly to acquire. If only in the hope of finding some clue to his secret, it was natural that he should have bought anything mathematical written by Nicolo, and as the subject was the management of artillery, it would occur to him most readily to present a copy to his patron, who, possessing the tastes of a scholar, was appointed general in the district, and was concerned very actively in the prevailing wars. That Jerome had not only bought the tract but read it carefully, is evident from the perfectly just criticism of one of its propositions contained in the preceding letter. The first point of accusation in that letter consisted, I need scarcely say, of a prevarication. I have pointed out the vicious clause in the ethics sanctioned by his Church, and almost universal in his time, which allowed truth of mind to be put out of sight for any useful purpose, if the truth of the lip only was preserved. Cardan was preserved

¹ Op. cit. pp. 118—122. The pages are numbered in pairs.

rather by his ruggedness than by his virtue from any frequent exercise of this dishonest right of circumvention. In his reply to Tartalea concerning Zuanne da Coi, and his questions, he wrote, however, with a manifest intention to deceive. He said only that he had long known of such problems, he meant it to be understood, that he had long known how to solve them. Tartalea, however, knew his ground, and walked into no pitfall:—"Concerning your first accusation," he wrote to the "Most Excellent Messer Hieronimo," "I answer and say, that it is time that I said that such questions came from Messer Zuanne da Coi, because a year and a half ago he proposed to me one like the last but one (only in other words), of which I made him himself confess here in Venice that he did not understand it, and that he did not know the answer, so that for such reason, and from other indications, I judged those questions to be his, and that he had himself sent them to me under your name. But when that bookseller assured me that he had them of your excellency, I judged that the said Messer Zuanne da Coi had been to Milan, and that they were there proposed to you by him (as I still judge, and believe firmly), and that you, being unable to solve them, sent them to me to be solved, for reasons that will presently be mentioned¹."

¹ "Ma quando chel libraro me acerto hauerle hauute da uostra eccellentia giudicai che il detto Messer Zuanne da Coi fusse uenuto à

Cardan, I think, had worked his way by that time somewhat further than Tartalea supposed; the gist of Tartalea's argument upon the matter was, however, true, and when writing the above passage he had certainly the best of the discussion. He answered well and boldly. He showed equal courage, when, having explained that Cardan's challenge was founded on a misunderstanding of his answer to the bookseller, he picked up the gage that had been thrown before him. Jerome's complaint was superfluous, he said: "But inasmuch as I may consider that your excellency very much desires to try your skill with me, which being so, if I were sure to be a loser, I would not refuse such a challenge,—that is to say, to bet upon this matter the said hundred ducats,—and I will come personally for the purpose to Milan, if you will not come to Venice."

Tartalea will be much perplexed to find a hundred ducats should he lose the wager, and I know that Jerome sent out his defiance from a home into which ducats did not come even by scores. Each combatant can afford only to win, but gamblers are not always wise, and men could then gamble not less readily in algebra than over cards or dice.

Tartalea met more boldly than wisely the objection *Millano et che li hauesse proposte à quella (come che anchor giudico et tengo per fermo) et che quella per non saperle risolvere me le habbia mandate da risolvere à me per le ragioni che di sotto se dira.*"

made by Cardan to the fifth proposition of his science of artillery, which proposition, in modern language, amounted to the assertion that a body could not move at once under the influence of a transmitted force and the force of gravitation. Jerome knowing of course nothing of the theory of gravitation, saw the facts, and urged them very properly. Nicolo, like a good disputant, replied: "I answer and say that the reasons and arguments adduced by you for the destruction of my said fifth proposition, are so weak and ill-conditioned, that an infirm woman would be strong enough to beat them to the ground." He then endeavoured in a technical way to reduce Cardan's suggestion to an absurdity, and summed up by addressing to Jerome the retaliatory comment, that "You thinking to make yourself appear a miracle to me with your ridiculous oppositions, have proved yourself, I will not say a great ignoramus, as you said to me, but a man of little judgment."

In reply to the unphilosophical sneer against the study of artillery, Tartalea spoke very worthily, in the following passage, which contains also the next reference to the Marquis d'Avalos, whose precise relation to the matter in dispute ought to be understood distinctly. Of the artillery: "As to that particular, I answer and say, that I take pleasure in new inventions, and in treating and speaking of things about which other men have not

treated or spoken, and I take no pleasure in doing as some do, who fill their volumes with things robbed from this or that other author. And although the speaking of artillery, and of the firing of it, is not a thing very honourable in itself, yet, since it is a new matter, and not barren of speculation, I thought well to say a little on it¹, and in connexion with that subject, I am at present bringing out two sorts of instruments belonging to the art, that is to say, a square to regulate the discharging of the said artillery, and also to level and examine every elevation. Also, another instrument for the investigation of distances on a plane surface, the description of which instruments will be published with my said work on artillery. And because you have written to me that you purchased two of my said books, one of which you gave to his excellency the lord marquis, and the other you kept for yourself, I have thought good to send you four copies of the said instruments, and have given them to the house of Messer Ottaviano Scoto, who will see that they are sent to you by some messenger, to be added to those volumes;

¹ This passage, so creditable to Tartalea in its sense and temper, stands in his own words thus: "Circà a questa particolarità ve rispondo et dico, che me diletto, de noue inuentioni et di trattare, et parlare de cose che altri non habbia trattato, ne parlato, et no me diletto di far come fanno alcuni, chi impiono li suoi uolumi di cose robate da questo et da quello altro autore. Et quantunque à parlare delle artegliarie, et lor tiri non sia cosa molto honoreuole in se, pur per esser una materia noua, et di non puoca speculatione me apparso di parlarue alquanto. . . ." Op. cit. p. 119.

of which four instruments you will give two to his excellency the lord marquis, and the other two keep as your own."

It was practically an important gain to Tartalea, if he could suggest, through any friend who would get for them proper attention, a knowledge of his inventions to a military chief able if he chose to bring them into use and notice. The complaints made by Tartalea have led to the supposition that Cardan made artful use of the name and influence of his patron, in a deep design for the wresting from Nicolo of the small bit of knowledge he desired to get¹. The supposition is quite incorrect.

¹ In Hutton's Mathematical Dictionary the spirit of the next letters between Cardan and Tartalea is expressed in the following manner, and it is the usual version of the story: "Finding he could not thus prevail with all his fair promises, Cardan then fell upon another scheme. There was a certain Marquis dal Vasto, a great patron of Cardan, and, it was said, of learned men in general. Cardan conceived the idea of making use of the influence of this nobleman to draw Tartalea to Milan, hoping that then, by personal entreaties, he should succeed in drawing the long-concealed rules from him. Accordingly, he wrote a second letter to Tartalea, much in the same strain with the former, strongly inviting him to come and spend a few days in his house at Milan, and representing that, having often commended him in the highest terms to the marquis, this nobleman desired much to see him; for which reason Cardan advised him, as a friend, to come and visit them at Milan, as it might be greatly to his interest, the marquis being very liberal and bountiful; and he besides gave Tartalea to understand, that it might be dangerous to offend such a man by refusing to come, who might, in that case, take offence, and do him some injury. This manœuvre had the desired effect. . . ." Hutton's Philosophical and Mathematical Dictionary (ed. 1815), vol. i. p. 81. So the tale is generally told against Cardan. From his entire letter which follows, and the rest of the story as narrated in the text, the reader may judge how far this version is a fair one.

On Tartalea's own showing, nothing could be more natural and gradual than the succession of steps by which the marquis rose into importance during the correspondence between the two mathematicians. I very much doubt, also, whether we ought not to attribute the tone of Jerome's next answer to Tartalea, not only to a prudent desire to maintain friendly negotiations, but in an equal degree to the fact that his anger, always shortlived, being at an end, he desired to heal the wounds that he had made, and behave with the courtesy due from one scholar to another. The reply, dated the 19th of March, 1539, now follows¹:

“ My very dear Messer Nicolo, I have received a very long letter of yours, and the longer it was the more it pleased me; I could have wished it doubled, if only you would not think that my biting words proceeded either from hate, for which there was no cause, or from malignity of nature, since I do good, when I can, much more readily than harm: it is my business to heal: let me do that; not bitten with envy at the question whether you are my equal or my inferior; I should have no cause to be so if you were my master in this art; I should struggle to soar with you, not speak you ill. Besides, the envious malign in absence not in presence; but I wrote that abuse

¹ Quesiti et Inventioni (ed. cit.), Lib. ix. p. 122. The letter begins, “Messer Nicolo mio carissimo.”

to stir you up to write again, judging, with out-of-the-way craft, what sort of a man you were from the relation of Messer Zuan Colle, who has been here. I liked him much, and did my best to give him pleasure, so that from his account I learned to think well of you, and even designed to send to you a letter; but he behaved ungratefully, speaking ill of me privately and publicly, and inviting me improperly with placards and writings, which things not succeeding to his own content (he had to one question three answers—one from Euclid, the other from Ptolemy, the other from Geber), he became so confounded that he left in despair, quitting a school of about sixty pupils, for which I was sorry enough. So that if I wrote sharply to you I did it willingly, thinking to cause that to follow which has followed; that is to say, to have your answer, together with the friendship of a man so singularly able in his art as I judge you to be by the things written in your letter. Thus I have committed an offence of which I am not willing to repent.

Now you must know, that in addition to your letter, I received a placard of the things which you are now about to read publicly in San Zuanne Polo, which bill has given me the highest pleasure; and besides that, you promised me four instruments, two to give to the lord marquis and two for me: and Signor Ottaviano writes to me that he sends four, though I have yet received neither

two nor four; but he says that they shall come with certain books that he is sending. I should have been glad to have them to give to the lord marquis; when I have them I will give them to him.

As for the answers to my four accusations, I need only reply to two; one concerns the attack on your fifth proposition in the *Arte Nova*, the other is about coming to a trial against you, who are the more able man in your own art. With regard to that second point, I would much rather live something of a poltroon than die a hero, the rather, as you concede my position by saying that Zuan Antonio had misunderstood, which puts an end to the occasion of our combat. I hope that you will come to Milan and learn to know me without the deposit of a hundred ducats, because in truth, I know you to be a very able man, and knowing one another we might both be able to deliberate together.

As for the disputation on the subject of your fifth proposition, certainly, you do well to use bold words, and defend the opinion you have published. And certainly when you come (as I hope, please God, you will) to Milan, we will talk of it more at our ease, and the rather, as I had your letters only yesterday evening" [which implied that a month passed before they could be transmitted from Tartalea in Venice, to Cardan in Milan], "and to-day I am obliged to write to you by command of the lord marquis,

so that I have not had time to reflect upon your other propositions.

I pray you, at any rate, to send or bring me what remains of your thirty deductions which you gave to Master Antonio Maria. If you will also send me some solutions of your two rules, or will give them to me when you come, I shall be in the highest degree obliged; for you must know that I take pleasure in all courtesy, and that I have sent to press a work entirely on the practice of Geometry, Arithmetic, and Algebra, of which up to this date more than the half is printed, and if you will give them to me so that I may publish them in your name, I will publish them at the end of the work as I have done with all others who have given to me anything of value, and will there put you down as the discoverer, and if you wish me to preserve your secret, I will do as you desire.

I told the lord marquis¹ of the instruments you had

¹ "Io avisai la eccellentia del Signor Marchese de gli istromenti quali gli mandati (anchor che non siano per fina hora gionti) et li dissi del cartello, e sua eccellentia mi commando lo legesse e tutte queste uostre cose piacque grandamente à sua eccellentia. Et mi commando di subito ui scriuesse la presente con grande instantia in nome suo, auisandoui che uista la presente douesti uenir à Millano senza fallo che uoria parlar con uoi. Et cosi ue esorto à douere uenire subito, et non pensarui su, perche ill detto Signor Marchese è sì gentil remuneratore delli uirtuosi, sì liberale, et sì magnanimo che niuna persona chi serue sua eccellentia mentre sia da qualche cosa resta discontenta. Si che non restati de uenire e uenereti à logiare in casa mia non altro Christo da mal ui guardi alli. 13. di Marzo, 1539. Hieronimo Cardano, medico." To which Tartalea subscribes: "Per costui son ridotto à

given him—they are not yet come to hand—and told him of the placard, and his excellency commanded me to read it; and all your things pleased his excellency greatly. And he commanded me at once to write the present letter to you with great urgency in his name, to advise you that on receipt of the same you should come to Milan without fail, for he desires to speak with you. And so I exhort you that you should come at once, and not deliberate about it, because the said marquis is a courteous remunerator of men of genius, so liberal and so magnanimous, that no person who does a service to his excellency, no matter in what respect, is left dissatisfied. So do not delay to come, and come to lodge in my house. So no more. Christ keep you from harm. Written on the 13th of March, 1539.

HIERONIMO CARDANO, Physician."

That the desire of the marquis to see Tartalea was genuine I see no reason to doubt. That Jerome was glad to have a chance of talking to his jealous correspondent, and persuading him, if possible, by word of mouth, is, of course, equally certain. The brief comment appended by Tartalea to the preceding letter is not good-humoured.

"NICOLÒ. I am reduced by this fellow to a strange un stranio passo, perche se non uado à Millano il Signor Marchese il potria hauer per male, et qualche male me ne potria reusire, et mal uolontiera ui uado, pur ui uoglio andare." Op. cit. pp. 123, 124.

pass, because if I do not go to Milan the lord marquis may take offence, and such offence might do me mischief, I go thither unwillingly; however, I will go." The suggestion that there was any danger in not going sprung entirely, it should be noticed, from Tartalea himself. Cardan had only urged, that as D'Avalos was a free-handed patron—a point upon which all chroniclers who speak of him agree—Nicolo should not fear that he would be a loser by the journey.

Accordingly, Tartalea went to Milan, and happening to arrive at a time when D'Avalos was absent, stayed for three days in Cardan's house as his guest. The result of the visit Nicolo represented to himself in his commonplace-book by the succeeding dialogue¹:

"Result of personal intercourse with his Excellency the said Messer Hieronimo Cardano, at his house in Milan, the 25th of March, 1539.

MESSER HIERONIMO. I am very pleased that you have come just at this time when his excellency has ridden to Vigevano, because we shall have leisure to enjoy ourselves and talk together over our affairs till he returns. Certainly you were somewhat too discourteous in resolving not to give me the rule you discovered upon

¹ Op. cit. p. 123.

the subject of the *cosa* and cube equal to the number, especially when I had so much entreated for it."

To this the reply of Tartalea was not unreasonable, and it may be well to say beforehand that it is to be read as in every main point true. He not only was at that time translating Euclid, but he was also reserving himself for a work of his own on arithmetic, geometry, and algebra, which he in the end did publish at Venice, seventeen years afterwards—that is to say, just before his death. It extended even then no further than quadratic equations, being his *Book the First of Algebra*, and did not contain the whole of his knowledge, nor does his knowledge of the two contested rules appear to have fructified at all in his own mind during all that time, as he justly supposed that it might, and as it began to do the moment it had found its way into the richer soil of Cardan's genius. Nicolo replied thus:

"NICOLO. I tell you that I am not so very chary on account of the simple rule or the calculation made by use of it, but on account of those things that by knowledge of it may be discovered, because it is a key that opens the way to the investigation of an infinity of other rules, and if I were not at present occupied upon a translation of Euclid into the vulgar tongue (and by this time I have translated as far as his thirteenth book), I should have already found a general rule for many other cases. As

soon as I shall have finished my labour upon Euclid already commenced, I am intending to compose a work on the practice of arithmetic, and together with it a new algebra, in which I propose not only to publish to every man all my said discoveries concerning new cases, but many others, to which I hope to attain, and I hope to show the rule for investigating an infinity of other things, which I hope will be a good and useful work. That is the reason why I deny my rules to everybody, though I at present make no use of them (being, as I said, occupied on Euclid), and if I taught them to any speculative person like your excellency, he could easily from such evidence find other cases to join to the discovered ones, and publish with them as himself their discoverer, by doing which he would spoil all my design. So that this is the chief reason why I have been so discourteous towards your excellency, and the rather, as you are now printing your work on the same subjects, and have written to me that you propose to publish such my inventions under my name, and to make me known as the discoverer. Which, in fact, does not at all please me, because I wish to publish such my discoveries in my own works and not in the works of other people.

M. HIERONIMO. And I also wrote to you that if you were not content that I should publish them, I would keep them secret.

NICOLO. Enough that on that head I was not willing to believe you.

M. HIERONIMO. I swear to you by the sacred Gospel, and on the faith of a gentleman, not only never to publish your discoveries, if you will tell them to me, but also I promise and pledge my faith as a true Christian to put them down in cipher, so that after my death nobody shall be able to understand them. If you will believe me, do; if not, let us have done¹.

NICOLO. If I could not put faith in so many oaths I should certainly deserve to be regarded as a man with no faith in him; but since I have made up my mind now to ride to Vigevano to find his excellency the lord marquis, because I have been here already three days, and am tired of awaiting him so long, when I am returned I promise to show you the whole.

M. HIERONIMO. Since you have made up your mind at any rate to ride at once to Vigevano to the lord marquis, I will give you a letter to take to his excellency, in order that he may know who you are; but before you go

¹ "M. HIERO. Io ui giuro, ad sacra dei evangelia, e da real gentil'huomo, non solamente da non publicar giamai tale uostre inventioni, se me le insignate. Ma anchora ui prometto, et impegno la fede mia da real Christiano, da notarmele in zifera, accioche dapoi la mia morte alcuno non le possa intendere, se mel uoleti mo credere credetilo se non lassatilo stare. NICOLO. Non uolendo io prestar fede à tanti uostri giuramenti io meritaria certamente da esser giudicato huomo senza fede, ma perche ho deliberato caualcare per fina à Vegevene" &c. Op. cit. p. 124.

I should wish you to show me the rule for those cases of yours, as you have promised.

NICOLO. I am willing; but you should know, that in order to be able on any sudden occasion to remember my method of operation, I have reduced it to a rule in rhyme, because, if I had not used this precaution, it would often have escaped from my mind; and although these rhymes of mine are not very neat, I have not minded that, because it was enough that they served to bring the rule into my memory whenever I repeated them. That rule I will write for you with my own hand, in order that you may be sure that my discovery is given to you fairly and well."

The verses then follow which contain the rule for the three case, $x^3 + bx = c$; $x^3 = bx + c$ and $x^3 + c = bx$, discovered by Tartalea in 1534. Translated into the language of modern mathematics, they read thus¹:

¹ The mystic rhymes themselves here follow. Tartalea's effusion was a thing to puzzle Petrarch:

"Quando chel cubo con le cose apresso
 Se agualia à qualche numero discreto
 Trouan dui altri differenti in esso
 Dapoi terrai questo per consueto
 Ch'el lor prodotto sempre sia eguale
 Al terzo cubo delle cose neto
 El residuo poi suo generale
 Delli lor lati cubi ben sottratti
 Varra la tua cosa principale.
 In el secondo de cotesti atti
 Quando chel cubo restasse lui solo

Find two numbers z and y , so that $x - y = c$ in the first case or $z + y = c$ in the second and third cases, and $zy = (\frac{1}{3}b)^3$: then $x = \sqrt[3]{z} - \sqrt[3]{y}$ in the first case, and $x = \sqrt[3]{z} + \sqrt[3]{y}$ in the other two. The original verses are given in a note below. Tartalea was not by any means singular in his practice of converting such a rule into a versified enigma. In this respect he followed the example set by the first of the Italian printed algebrists, Luca di Borgo, who had for each of the three forms of which an equation of the second degree is susceptible, a particular rule, instead of one general rule that sufficed for all. The three rules he expressed in three Latin quatrains, of which one will be found cited below as a specimen of the manner¹. It was not, therefore, any individual con-

Tu osseruarai quest'altri contratti
 Del numer farai due tal part' à uolo
 Che luna in l'altra si produca schietto
 El terzo cubo delle cose in stolo
 Delle qual poi, per commun precetto
 Torrai li lati cubi insieme gionti
 Et cotal summa sara il tuo concetto
 El terzo poi de questi nostri conti
 Se solue col secondo se ben guardi
 Che per natura son quasi congiunti
 Questi trouai, et non con passi tardi
 Nel mille cinquecent'e quatro è trenta
 Con fondamenti ben sald' è gagliardi
 Nella citta dal mar' intorno centa."

Quesiti et Inventioni, p. 123.

I have not ventured to interfere with the allowance originally made by Tartalea to his poem, of one full stop and two commas.

¹

Primi canonis versus.

" Si res et census numero coequantur a rebus

ceit which caused Tartalea to put his process into rhyme.

“Which rhyme,” having quoted it, he went on to say, “speaks so clearly, that, without other example, I think your excellency will be able to understand the whole.

M. HIERONIMO. I shall no doubt understand it, and have almost understood it at once; go however, and when you have returned, I will let you see whether I have understood.

NICOLO. Now your excellency will remember not to fail of your promised faith, because if by ill fate you should fail in it, that is to say, if you were to publish these cases either in that work which you are now printing, or in any other, though you published it under my name, and gave it as my own discovery, I promise and swear that I will cause a book to be printed immediately afterwards that you shall not find very agreeable.

M. HIERONIMO. Do not doubt that I shall perform what I have promised; go, and feel secure upon that point; give this letter of mine to the lord marquis on my part.

NICOLO. Now I bid you farewell.

Dimidio sumpto censum producere debes
Addere que numero: cujus a radice totiens
Tolle semis rerum census latusque redibit.”

Luca di Borgo. *Summa de Arithmetica Geometria*,
&c. (ed. 1494) Dist. viii. Tract 5, p. 145.

M. HIERONIMO. May the hour be lucky in which you depart.

NICOLO (*aside*). By my faith, I shall not go gallanting to Vigevano. So I shall just travel back to Venice, come of it what may¹."

¹ "NICOLO. Hor su me aricomando. M. HIERO. Andati in bon' hora.

NICOLO. Per la fede mia che non uoglio andare altramente à Vigevene, anzi me uoglio uoltare alla uolta de Venetia, uada la cosa come si uoglio." Ques. et Inv. p. 124.

CHAPTER XIII.

THE REST OF THE DISPUTE BETWEEN THE TWO MATHEMATICIANS—IN THIS CHAPTER IS CONTAINED AN ACCOUNT OF THE LIFE AND FORTUNES OF LODOVICO FERRARI, CARDAN'S FOREMOST PUPIL.

NICOLO went off by no means easy in his mind. The secret was no longer his own, and Cardan was a busy-headed fellow. Jerome at once went to work upon Tartalea's rules, but being misled by the badness of the verses, into the reading of $(\frac{1}{3} b)^3$ as $\frac{1}{3} b^3$, he could not work with them; he therefore wrote the following note to Venice on the 9th of April¹.

"My very dear Messer Nicolo,—I am much surprised at your having left so suddenly, without speaking to the lord marquis, who came on Easter Sunday, and could not have your instruments until the Tuesday afterwards,

¹ Ques. et Inv. p. 124. The letter begins, "Messer Nicolo mio carissimo." All these letters end, it may be observed, with "Non altro," the "So no more," not yet extinct among our humble letter-writers. It is followed as regularly by the phrase "God" [or Christ] "keep you from harm," "Iddio da mal ui guardi." Thus the ending of this letter, for example, was "Non altro Christo da mal ui guardi. In Millano alli 9 Aprile 1539. Hieronimo Cardano medico, tutto vostro."

and with great difficulty. However, he had them, and understood them; I presented them on the same Tuesday in the evening. Truly I think you were wrong in not making yourself known to his excellency, because he is a most liberal prince, and a great lover and abettor of genius, and he valued your instruments and desired to have them explained to him, and I showed him succinctly their value; now that must suffice; the time may yet come when you may be glad to be known by the lord marquis. When I know for what reason you left, or by whom you were advised to do so, I will tell him.

As for my work, I think it will be complete next week, for there are only three more leaves to be filled. As for the question of your case of the cosa and cube equal to the number, I thank you much for having given me the rule, and I will let you see that I shall not be ungrateful. But, however, I must confess my fault in not having had ingenuity enough yet to understand it, therefore I beg you, for the love you bear me, and for the friendship that is between us, and that will, I hope, last while we live, to send me solved this question—one cube, three cosas equal to ten; and I hope that you will have as much good-will in sending as I in receiving it. So no more. Christ keep you from harm. In Milan, on the 9th of April, 1539.

HIERONIMO CARDAN, Physician.

“All” [we should say ever] “yours.”

Nicolo in reply did not return Jerome's "Mio Carissimo," or sign himself all his, but explained to the "Honorando Messer Hieronimo," that nobody must be blamed for advising him to return to Venice, because he had promised his friends that he would be with them at Easter, and as it was he had much trouble in getting home by Holy Sunday. "Concerning your work," he said, "I much desire that it shall be out soon, and should like to see it, because if I do not see it I shall be suspecting that you have broken your word, that is to say, may have interpolated my rules in some part of it¹." Certainly if Nicolo had had blood-guiltiness upon his conscience, and had betrayed his secret to a woman, he could not have been more nervously expectant of the terrors of exposure. Seeing at once what part of his rhyme had puzzled Cardan, he gave the required explanation, and concluded his letter thus: "So no more. God keep you from harm. In Venice, on the 23rd of April, 1539. Remember your promise.

NICOLO TARTALEA, of Brescia."

On the 12th of May Jerome set his friend's mind at ease by sending a copy of his book, with the following letter:

¹ "Circa alla vostra opera molto desidero che la se fornisca presto, et ui uederla, perche per fin che non la uedo sto sospettoso che quella non mi manchi di fede, cioe che quella non ue interponga, li miei capitoli." Tartalea, p. 124.

"In answer to your letter of the 23rd of April, received the other day, very dear Misser Nicolo, I will reply to you succinctly part by part, and first as to the excuse of your departure without going to Vigevano. I desire nothing but what you desire, and regret that you have been put to so much trouble on my account, without any advantage for yourself.

"As to my work, just finished, to remove your suspicion I send you a copy, but I send it unbound, for I would not have it beaten while it was so fresh. As for your rule and my case solved by you, I thank you very particularly, and praise your ingenuity above all with which I have met, and am more pleased than if you had given me a hundred ducats. I hold you as my very dear friend. I have tried the rule and found it universal. As to the doubt you have lest I should print such your inventions, my faith that I have given you with an oath, ought to suffice¹, because the hastening of my book was nothing to the purpose, for whenever I like I can add to it. But I hold you excused by the importance of the

¹ " . . . la mia fede che ui ho data con giuramento, ui doueua bastare, perche la speditione del mio libro non faceua niente a questo, perche sempre che mi pare gli posso sempre aggiungere, ma ue ho per escuso che la dignita della cosa, non ui lassa fondare sopra quello che ui doueti fondare, cioe sopra la fede d'un gentil'huomo e ui fondati sopra una cosa che non ual niente, cioe ma el ponto è qua chel non è mazor tradimento che à esser mancator di fede, e far dispiacere à chi l'ha fatto appiacere." Op. cit. p. 125.

matter for not resting content with that which ought to content you, that is to say the word of a gentleman, and depending on a thing that is of no worth at all, that is to say the finishing of a book to which a capitulum novum or capitula nova could at any time be added, and there are a thousand other ways, but the point is that there is no greater treachery than to break faith and to displease those who have given us pleasure, and if you were to try me you would find whether I shall be your friend or not, and whether I shall be grateful for your friendship and the favours you have done me.

“I send word to you also, and earnestly beg concerning these my printed works for my love of him who has printed them, and will send some into your town for sale, that you will not lend them about more than necessary, for my sake. If they had been printed at my own expense I would not say a word, because I care more for the profit of my friends than for my own. So no more. God keep you from evil. In Milan, the 12th of May, 1539.

“HIERONIMUS CARDANUS *medicus, totus vester.*”

Nicolo, partly appeased, or glad of something new to grumble at, replied on this occasion to the “Honorandissimo Messer Nicolo,” and signed himself “Nicolo Tartalea of Brescia, all yours.” He had received the book,

but being busy over his Euclid, had only found time to glance at it and fall at once upon a shocking error, "so gross," he says, "that I am amazed at it, for one would have thought that it might have been seen with only half an eye¹." He is quite "sorry for the honour" of his friend. Nicolo had verily the temper of a thistle.

On the 10th of July in the same year the restless mathematician was further excited by a letter from an old pupil settled at Bergamo, one Master Maphio, asking help in the untying of some knot of a problem, and ending with a scrap of gossip, to the effect that a friend from Milan had written word to him that the physician Cardan was engaged over a new algebraical work, treating of certain new discoveries. Could they be Tartalea's? Certainly they were, Tartalea replied, if the news were true, and cited the grim proverb: "If you wish your counsel kept, make confidant of nobody." He begged Maphio to be on the alert, and send him if he could more tidings on the matter. The rumour, I need not say, was false. Jerome made his promise in good faith, and it was not until five years afterwards that any book of his was published upon Algebra. Tartalea, however, had left

¹ "Vostra eccellentia erra tanto de grosso che me ne stupisco, perche cadauno che hauesse solamente mezzo un' occhio lo potria vedere cosa molto redicolosa cosa molto lontano dalla verita, della qualcosa molto me ne rincresce per honor uostro. Non altro Iddio da mal, &c. Nicolo Tartalea Brisciano tutto vostro."

Milan, sulky, and already considered that he had a right to quarrel with Cardan. Jerome's next letters were not answered, nor are they published in Tartalea's book.

On the 4th of August, however, Cardan wrote a letter, which is printed, complaining courteously of the fact that he had written many other letters, which were not honoured with any reply, asking for information upon various points, and chiefly requesting help in clearing up the difficulty of the irreducible case $x^3 = bx + c$, at which Jerome had arrived in the course of his own studies. To this letter Tartalea appends the note that follows: "I have a good mind to give no answer to this letter, no more than to the other two. However, I will answer it, if it be but to let him know what I have been told of him. And as I perceive that a suspicion has arisen concerning the difficulty or obstacle in the rule for the case" ($x^3 = bx + c$), "I will try whether he can change the data that he has in hand, so as to remove the said obstacle and alter the rule into some other form; though, indeed, I believe that it cannot be done, nevertheless there can be no harm in trying¹." He wrote therefore a letter, which began, omitting altogether *Honorando*, or *Honorandis-*

¹ Op. cit. p. 126. "Et dappoi che uedo che sta suspettando sopra la retta via de la regola del capitolo di cose, e numero, equal a cubo, uoglio tentare se gli potesse cambiare li dati che ha in mane cioe remover lo di tal uia retta e farlo intrare in qualche altra à ben che credo non ui sara mezzo, nondimeno il tentar non noce."

simo, to say nothing of Carissimo, thus :—"Messer Hieronimo, I have received a letter of yours, in which you write that you understand the rule for the case $x^3 = bx + c$; but that when $(\frac{1}{3}b)^3$ exceeds $(\frac{1}{2}c)^2$ you cannot resolve the equation by following the rule, and therefore you request me to give you the solution of this equation $x^3 = 9x + 10^1$. To which I reply"—(it will be understood that to himself also the case was insoluble)—"to which I reply, and say, that you have not used the good method for resolving such a case; also I say that such your proceeding is entirely false. And as to resolving you the equation you have sent, I must say that I am very sorry that I have given you already so much as I have done, for I have been informed, by a person worthy of faith, that you are about to publish another algebraical work, and that you have gone boasting through Milan of having discovered some new rules in Algebra. But take notice, that if you break your faith with me, I shall certainly not break promise with you (for it is not my custom); nay, even undertake to visit you with more than I had promised."

The rest of the letter, which is very long, was chiefly intended to be disagreeable. To another of Cardan's

¹ In the old algebraical language, "haueti inteso il capitolo de cubo, eguale à cose, et numero, ma che quando il cubo della terza parte delle cose eccede il quadrato della mita del numero che all' hora non poteti farli seguir la equatione, et che per tanto me pregati che ue dia risolto questo capitolo de .1. cubo. eguale à .9. cose piu .10."

questions, Nicolo replied that two of his pupils had answered it—one of them, Richard Wentworth, the English gentleman, whom he praised much; and he sent the two solutions by his pupils, written with their hands. He further talked about his Euclid, and in various ways heartily abused Cardan's Arithmetic, which he pronounced to be a confused mess, and supposed must have been not got out of his own head, but "collected and copied by the pen from divers books, at divers times, just as they chanced to come into his hands." Upon another mathematical matter he was further "amazed and astounded" at Cardan's persistent ignorance, laughed at his having once said to him in his own house that if a certain kind of solution had not been considered impossible by Luca di Borgo, he should have tried to discover it (as if he could discover anything indeed!), and thought it a pity that he did not know physic enough for the cure of his own errors. He ended by saying, "once I held you in good esteem, but I see now that I deceived myself grossly¹."

Cardan replied briefly to his friend on the 18th of October, after having perhaps waited until he had cooled from the anger which Tartalea's rude letter must have at

¹ "Et certamente el fu gia che ui haueua in bon conto, ma al presente uedo che me ingannaua de grosso, non altro Iddio ui conserui in Venetia alli .7. Agosto. 1539. Nicolo Tartalea Brisciano." Op. cit. p. 127.

first occasioned. He replied to the "most honourable Messer Nicolo¹," that he must have been beside himself to write as he had written to one "who was his great friend, and had without envy praised him to the skies." He added, "for the other matter I reply that you have been misinformed about my intention to publish on Algebra, and to make known your rules. I think you must have been hearing something from Messer Ottaviano Scoto about the Arcana of Eternity, which you imagine to be the Algebra I am about to publish. As to your repentance at having given me your rules, I am not to be moved by that or by any words of yours to depart from the faith I pledged you²."

To this letter Tartalea sent no answer; still Jerome did not quarrel with him; and another letter from Cardan, the last in Nicolo's collection, dated the 5th of January, 1540, stated how "that deuce of a Messer Zuanne da Coi³," by whom Nicolo, Jerome, and all mathematicians in that part of Italy were bored, had come to Milan, believing that Cardan was desirous to give up to him his arithmetical lectures, and professing, apparently with truth, that he had found out certain rules. Cardan

¹ "Ho receputa una uostra, Messer Nicolo osseruandissimo,"

² " Quanto al pentirue hauermi dato quel uostro capitolo, per questo non mi mouo, per uostre parole a niuna cosa contra la fede ui promisse."

³ "Eglie ritornato qui quel diauolo de Messer Zuanne Colle,"

having had some contests with their ancient rival, desired Tartalea to assist in capturing the ground which Zuanne held as his exclusive property. To this letter Nicolo added in his diary a number of saturnine and mathematical comments, and summed up by writing that he should not choose to send Cardan an answer, because he said "I have no more affection for him than for Messer Zuanne, and therefore I shall leave them to themselves¹."

One of the questions put by the pertinacious Messer Zuanne Tonini da Coi, not soluble at the time by any one, and thought insoluble by some, was the following: "Find me three numbers continually proportional, of which the sum is ten and the product of the second by the first is six." This led to the following troublesome equation: $x^4 + 6x^2 + 36 = 60x$. Cardan worked very industriously at it, and urged his friend and pupil Lodovico Ferrari to do the same. Tartalea, we have seen, declined contemptuously to take the field. An ingenious method of solution was eventually discovered by Ferrari, which consisted in adding to each side of the equation arranged in a certain way quadratic and simple quantities, of a kind calculated to render the extraction of the square root of each possible. By this method of resolving

¹ "Non li uoglio dar altra risposta, perche è non ui ho piu affetione à lui che à Messer Zuanne, e pero li uoglio lassar far tra loro." Tartalea, p. 129.

an equation of the fourth degree, by the reduction of the biquadratic into a cubic, Ferrari secured for himself the right of being honourably named in every history of mathematics.

Honourably named and little more, for he died young, and left no written works behind him. His friend Cardan, through whom he rose, has left a brief sketch of his life and character¹. I have already related how, after the introductory omen of a magpie, young Ferrari had been brought by his uncle to Cardan's house as a servant. Some minute detail connected with that event may now be given. A certain Bartholomew Ferrari, a man of humble fortunes, having been exiled from Milan, settled in Bologna, where he had two sons, Vincent and Alexander. Vincent was Lodovico's uncle, Alexander was his father. Alexander being killed, the boy went to his uncle's house, and lived there. Vincent Ferrari had an unmanageable son named Luke, who, flying one day from his father's anger, went to Milan, and by chance hired himself as famulus into the service of Cardan. After a time he slipped away from his new master, without warning given, and went back to his old home. Jerome applied there for him, and his father Vincent took that opportunity of getting Lodovico off his hands. As a substitute for his son Luke he sent his nephew off to be the doctor's servant, and so it happened that on a day

¹ Opera, Tom. ix. p. 568. I take from it the following details.

before mentioned, Lodovico Ferrari, then fifteen years old, went, poor and uninstructed, into Jerome's service. But he was a boy of very extraordinary natural ability; Cardan soon put him to use as an amanuensis, and accepted him next as a pupil and a friend—not indeed because he was a good boy, for he was nothing of the kind. His temper was so bad that Jerome went near him with caution, and shrunk often from the task of speaking to him. He grew up also irreligious, given to habitual and open scorn of God. The friendship between him and Cardan grew out of their common love of knowledge, out of the problems upon which they had worked together, out of Lodovico's sense of obligation to the man by whose hand he was raised, and out of Jerome's pride at having fairly brought before the world so fine an intellect. Ferrari also was a neat and rosy little fellow, wicked as he may have been, with a bland voice, a cheerful face, and an agreeable short nose, attentive in trifling things, and fond of pleasure. By his manners and his brilliant genius he made way for himself in the world with wonderful rapidity. His worldly career presented, in its early course, a great contrast to that of the unlucky philosopher who taught him Latin, Greek, and mathematics, and upon whose shoulders he knew how to rise.

At the age of eighteen Ferrari began to teach, and excited universal admiration in the town. He was

scarcely twenty years old when he contested publicly with Zuanne da Coi and Tartalea: Tartalea declares in his own book that he, Tartalea, was left the victor: Cardan states that Ferrari overcame them both, and appeals confidently, in support of his assertion, to the public records then extant, and the common understanding in the town. Two years afterwards the brilliant young scholar was held in so much esteem, that the possession of his services was contended for by the great men around him. He was tempted by simultaneous offers from the gay Brissac, from the emperor himself, who desired him as a teacher for his son, and from the Cardinal of Mantua. An offer of court service did not lure Ferrari, who cared less for nominal honour than for actual profit. The Cardinal's brother, Ferrando Gonzaga, then governor at Milan, having given to the flourishing youth the office of surveyor of the province, with a salary of four hundred gold crowns; and the cardinal himself offering largely, Lodovico went into the churchman's train, and was so well rewarded, that in eight years he received nearly four thousand gold crowns, in addition to free entertainment for himself, two servants, and a horse. The cardinal's good living after a time aggravated a fistula with which Ferrari became troubled, and unreasonably angry with his patron because he was unable to escape the consequences of his own too free indulgence in the plea-

tures of the table, the ill-humoured young mathematician quitted abruptly his not very dignified position as a retainer. Then retiring into independence, he built for himself a house, in which he went to live with his sister, Maddalena, orphan and widow, whom he truly loved. We shall meet with him hereafter, teaching mathematics at Bologna ; but it is expedient to complete the sketch of his career by adding in this place, that he died suddenly and prematurely, at the age of thirty-eight, in the first year of his professorship, as it was said by poison. Nearly all sudden deaths did in those days of ignorance prompt rumours about poison ; but in this case there was some colour given to the rumour by the fact that his sister—the one person towards whom his wayward heart had really turned in love—inherited his property, scorned to lament at his funeral, married fifteen days after his death, and at once gave all his money, goods, and chattels, to her husband. That reads like the sequel to a wild story of Italian passion. But the sequel is not there. The sequel is, that Maddalena lived to be repudiated by the man to whom she gave her own soul and her brother's wealth. When Cardan wrote the brief sketch that he has left of the career of his old pupil, she was a miserable old woman, living in the country in a state of abject poverty, unpitied and unaided by the man whom her guilt, as it was suspected, had enriched. Ferrari left no

other fruit of his great genius than the formula which Cardan has referred to him, and in connexion with which his name therefore has remained to us. He wrote no books, and engaged himself during his unhappy life in little other literary labour than the collecting of the dicta left by former authors. He had indeed written some comments upon Cæsar and Vitruvius, and of those his sister's husband took possession, with all other property. He laid them by, as he himself told Cardan, until his son by a first wife was old enough to receive credit for having written them, as he intended them to have then published in his name. In every way the enemy resolved to fatten on Ferrari's substance. That is the story of Ferrari; a story of great powers wasted for the want of guiding energy and principle. He was born on the 2nd of February, 1522, and he died on the 5th of October, in the year 1560.

Cardan, in publishing Ferrari's discovery, attributed it duly to its author; and in that respect he was not less just to Tartalea, though the secret of the latter was made public by a breach of faith which, says Nonius (Nunez), a contemporary Spanish mathematician, made Tartalea so wild, that he was like one who had gone out of his mind. Jerome's breach of faith I shall not justify. It will shortly be seen that there was no palliating circumstance possible in such a case which he was not able to urge to himself fairly; the promise he made was ridicu-

lous, and if the wrong consisted rather in making than in breaking it, Tartalea had not the less cause to complain. Sympathy for Tartalea we cannot indeed feel. The attempt to assert exclusive right to the secret possession of a piece of information, which was the next step in the advancement of a liberal science, the refusal to add it, inscribed with his own name, to the common heap, until he had hoarded it, in hope of some day, when he was at leisure, turning it more largely to his own advantage, could be excused in him only by the fact that he was rudely bred and self-taught, that he was not likely to know better. Any member of a liberal profession who is miserly of knowledge, forfeits the respect of his fraternity. The promise of secrecy which Cardan had no right to make, Tartalea had no right to demand. In respect to three-fourths of the case it was indeed peculiarly absurd; because of the four rules discovered by Tartalea, and communicated to Cardan, he could claim rights of invention over one only, that with which he had turned the tables against Antonio Maria Fior, on the occasion of their contest. The other rule then discovered by him had been known not only to Fior, but even to Scipio Ferreo, at least forty years before Cardan published it; and the other two rules discovered by Tartalea in 1530, had then been for some time known to Zuanne da Coi.

Of the conversations and correspondence between Cardan and Tartalea on this subject we have only, as has been seen, the *ex parte* statement of Tartalea, who gives his own version of the conversations, and does not publish all the letters that passed on the subject. Yet it is evident, even from this hostile account, that Jerome made a promise in good faith, and that Tartalea never seemed to consider that it was sufficiently binding. Tartalea himself proves that Cardan bore gross rudeness very good humouredly, and that though his good faith was doubted and contemned, he did not consider himself entitled to take any advantage of its ungenerous rejection. Tartalea's rule was not put into the Arithmetic, nor was it communicated to the world by Cardan until it had grown, in the good soil of his own mind, out of a seed into a tree. He considered then that it had become so far fairly his own that he was entitled to make public distribution of its fruits, if he gave, as he was quite ready to give, and did give, proper credit to Tartalea for his part in their production. If he was still bound by the letter of his promise, since mathematical facts could be explained only step by step, he, who proved himself to be decidedly the best mathematician of his time, was bound to stand still near the threshold of his science till Tartalea, by moving forward and himself publishing his rule, left the path open for him. Tartalea, however, was in no mood to be hurried, and he actually

died about thirty years after the acquisition of two of his rules, and a quarter of a century after the acquisition of the others, without having either published them or used them—so that it could be known of him that he had done so—as the stepping-stones to higher knowledge. Cardan committed most undoubtedly a breach of faith, and was guilty of an abstract—though not therefore the less real—wrong; practical wrong he did to nobody, for his book on Algebra was a great gain to science, and did no actual injustice to Tartalea, to whom Cardan rendered in it that which was his due. When to the preceding facts we add the reflection that this great algebraic quarrel took place in the most corrupt of European states at one of the corruptest periods of modern history, when the promise of a pope himself was good for nothing, we shall be likely to decide fairly upon the degree in which the details of this controversy should affect our estimate of Cardan's character.

The Book of the Great Art, the Algebra¹, published by Cardan in the year 1545, which was the tenth book of his Arithmetic, was published by Petreius, of Nuremberg, and dedicated to the scholar in that town for whose courtesy he was indebted for his introduction to its presses, Andrew

¹ "De Arte Magnâ, sive de Regulis Algebraicis." It was published in folio, says Naudæus, who appears not to have seen the first edition. I believe it is not in any English public library.

Osiander. To him Jerome dedicated, with a proper sense of gratitude and literary courtesy, his Algebra, as to a man "most learned in Greek, Hebrew, Latin, and Mathematics, but rather," he says, "because it appeared to me that this my work could be dedicated to no man more fitly than to yourself, by whom it may be emended (if my erring hand has ill obeyed the mandates of the mind) and read with enjoyment and understanding, from whom also it can receive authoritative commendation. . . . Accept, therefore, this lasting testimony of my love towards you, and of your kind offices towards me, as well as of your distinguished erudition¹."

Very genuine in Cardan is the feeling that prompts all his dedications. His books are always inscribed in acknowledgment of kindness to the men who had a claim upon his gratitude, never to men whom he hoped thereby to make grateful and liberal towards himself. They were the scholar's courtesies bestowed where they were due; he never carried them to market.

Cardan stated at the beginning of his Algebra that, as his work chiefly went into new ground, he should "decorate with the names" of the discoverer inventions not his own, and that all matter not ascribed to other men would be his own. The whole book was original, in fact, with the exception of those few rules from which he started,

¹ *Ars Magna. Opera, Tom. iv. p. 221.*

and of existing rules the demonstrations were all his with exception of four, said to have been left attached to his four elementary rules by Mahomet ben Musa, and two of which Lodovico Ferrari was the author. Cardan, in his first chapter, ascribes to every man his own; does honour to Pisanus and Fra Luca; then, after coupling the discovery of Scipio Ferreo with a high eulogy of the mathematician and his divine art, Jerome adds: "In emulation of him, Nicolo Tartalea of Brescia, our friend, when in contest with the pupil of Ferreus, Antonia Maria Fior, that he might not be conquered, discovered the same rule, which he made known to me besought by many prayers¹." He is nowhere chary of acknowledgment. In the sixth chapter of this book he ascribes to Tartalea the credit of having taught him in what way to push forward all his algebraical discoveries, owning freely that a hint given by Tartalea led to his use of the method by which all the rules in the work are demonstrated, and all that is new was first discovered. "When I understood," he says, "that the rule taught to me by Nicolo Tartalea had been discovered by him through a geometrical demonstration, I thought to myself—that must be the golden way up to all algebraical discovery²." That golden way, there-

¹ Op. Tom. iv. p. 222.

² Ibid. p. 235. The details that have here been given are further illustrated by a highly characteristic portrait of himself, prefixed by Tartalea to his "Quesiti et Inventiones." A fac-simile of that portrait, reduced in size, will be found upon the title-page of the second volume of the present work.

fore, Cardan prosecuted, and the result was a work of remarkable completeness and originality. In it he laid down rules for all forms and varieties of cubic equations, having all their terms or wanting any of them, and having all possible varieties of signs. Every rule given he demonstrated geometrically. He treated very fully of almost all kinds of transformations of equations, in a manner before wholly unknown. In the same book he for the first time made frequent use of the literal notation, a, b, c, d . He therein gave a rule for biquadratics suiting all their cases, and in the invention of that rule made use of an assumed indeterminate quantity, and afterwards found its value by the arbitrary assumption of a relation between the terms. He therein first applied algebra to the resolution of geometrical problems.

The list could be made more minute, but it would in that case be more technical; the citation of those main points is enough to show the very great importance of Cardan's Book of the Great Art, in which the whole doctrine of cubic equations was first published to the world¹. In that department of algebra, Tartalea had indeed turned the first sod, but it was Cardan who ploughed the field and raised the crop upon it. No algebraical book equal in

¹ In Hutton's Mathematical Dictionary, art. Algebra, there may be seen a list of the chief improvements introduced into the art by Cardan, sixteen in number.

importance to Cardan's was published in his time. The Germans, who were not much read in Italy, had advanced beyond the Italians in mathematics, but Cardan's book published in Germany placed him easily and indisputably at the head of all. One of the best of the German mathematical books, the *Arithmetica Integra* of Michael Stifelius (Englised, Michael Boot), had issued from the press, also of Nuremberg, less than a year before the publication in that town of Cardan's *Ars Magna*. Before I close these details in the life of a primitive algebrist, it may help to suggest to us how truly primitive he was, if we consider that in that book by Stifelius the signs $+$, $-$, and $\sqrt{}$, were for the first time used.

CHAPTER XIV.

THE CONQUEST OF AN ADVERSE WORLD.

TARTALEA could not get on with algebra for twenty years because he was translating Euclid; Cardan in five years had advanced the science by great strides, and was at the same time engaged upon a dozen other works¹. In the year 1543 the separate works written by him amounted to the number of fifty-three, divided into a hundred and fifty-eight books, technically so called²; and from that date the number of them multiplied so rapidly that an attempt to give even the shortest tolerable account of them all would make this narrative unreasonably long.

A very few more notes will enable us to complete in sufficient detail that essential part of Jerome's life which describes the steps by which he worked his way to fame and general acceptance as an author. After the publication of the Book of the Great Art his way was easy, and

¹ "Neque enim mens tandiu intenta uni negotio esse potest." De Libris Prop. (1557) p. 12.

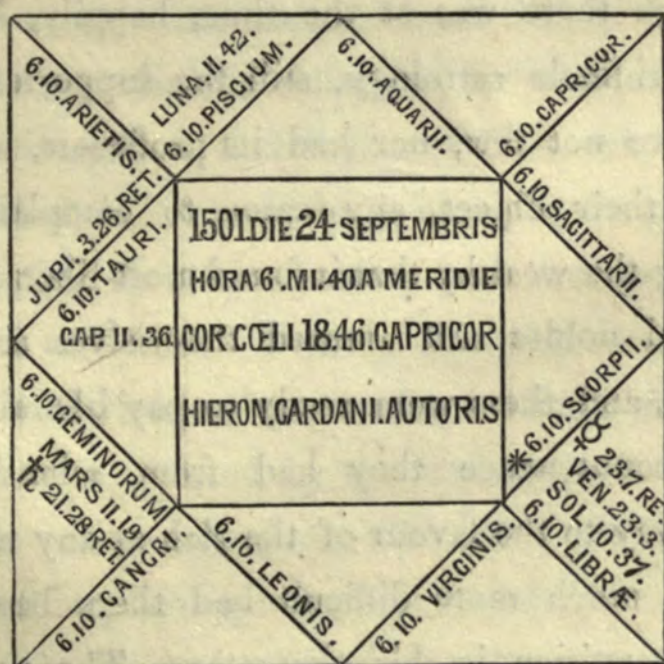
² Ibid. The same authority or reference to the subsequent book De Libris Propriis will justify whatever else is said in this chapter upon the order of publication of Cardan's writings.

there were on all sides publishers willing to buy what he would suffer them to print. He was not idle, and his love of print, rather than his love of money, caused him to degenerate often into a hack writer, to drag all manner of disquisitions into his books for the sole purpose of filling sheets; but even such interpolations and digressions—always carefully retouched and digested—having on them his own stamp of eccentricity and genius, very likely helped to make his works more popular. The publications issued by Cardan between the years 1542 and 1545 contributed to the foundations of his fame, and these, which I left out of sight in order to trace uninterruptedly the history of his most valuable treatise, include the last of his less prominent works that will need special mention.

In the first place there was that astrological book which he sent in reply to the application made from Nuremberg by Osiander and Petreius. Joannes Petreius published it in the year 1543, and it was entitled "Two Tracts by Girolamo Cardano, Physician of Milan. One a Supplement to the Almanac, the other on the Restitution of the Celestial Times and Motions. Also Forty-seven Nativities, remarkable for the Events they Foretel, with an Exposition¹." The book was dedicated gratefully to

¹ "Libelli duo: unus, de Supplemento Almanach. Alter, de Restitutione temporum et motuum cælestium," &c. 4to. Norimb. 1543.

Cardan's Milanese friend and patron, Filippo Archinto. So far as it is a supplement to the almanac, it contains various useful directions, such as how to find the pole, to recognise planets at sight, and so forth, with some useless matter, then accounted precious, of an astrological description. The nativities are very curious. Among them are the horoscopes—each with an exposition—of Petrarca, of Luther, of the Emperor Charles V, and of King Francis I, of Fazio Cardan, of Jerome himself, of his friend Archinto, and his other patrons; of Venice, from the date of its establishment, and, in the same way, of Florence and Bologna. The horoscope of Jerome himself I append for the benefit of any person who is able to understand such mysteries, or may have a desire to see in what fashion these things were drawn.



Minute explanation of the twelve houses of the twelve signs, and of what Mars meant by being in one, and what the Sun and Venus meant by being together in another, while the Moon was in a third, is rendered the less necessary by the fact that the sketch of his own future, drawn by Cardan from this nativity, was emphatically incorrect. What the stars pronounced strongly against did happen, and what did happen the stars did not indicate at all.

Concerning his skill as an astrologer, Cardan said in his dedication that "the ungrateful condition of the times was such that no prayers or rewards would induce him again to exercise his art." A certain bishop at Rome held, he said, unwittingly, the last example of his skill in it.

Although there was at the time, happily, some tendency to ridicule astrology, still the supporters of that science were not few, nor had its professors, when gain only was their object, any reason to complain, for it was among the wealthy that it found most liberal support; princes and nobles still amused themselves as amateur astrologers, and these were ready to pay liberally for the aid and countenance they had from scientific men. Cardan's way to the favour of the rich at any rate might have been much more difficult had there been less to favour superstition in his character. The practice of astrology Jerome abjured as vainly as the toper might

abjure his tankard. He both practised it again and wrote of it again; twice again in successive works he discussed, among others, his own horoscope. In doing so for the last time, when the events of his life lay chiefly in the past, his comment upon it, and upon all nativities by which it was influenced and modified, became so elaborate that it assumed by itself almost the proportions of a book. He returned then thoroughly to his astrology, for how could he forswear it while he believed the science to be true, and there were yet kings to urge that he would exercise his skill in it on their behalf?

In the same year, 1543, Jerome had begun the writing of a life of Galen, which it does not appear that he ever finished. He also laboured at a book on the art of Metoposcopy, illustrated with numerous physiognomical drawings. He wrote other matter, much that he has himself designated as prodigious folly, on the hint of which he expressed his opinion, and that no foolish one, that there is in the mind, as in the body, a necessity for getting rid of waste,—that the active literary man must write things for the fire as well as for the press. Such a work was Cardan's "*Convivium*," or treatise on Example in Love. In the same year, stirred by the restless spirit that would never suffer him to be content with one work at a time, he was engaged in philological research, and wrote a dialogue in his own tongue upon a comparison between the respec-

tive qualities of the Greek, Latin, Italian, and Spanish languages. Spanish armies were so much at home in Italy, and the Spanish language is so easily to be acquired by an Italian, that Jerome's busy mind could not have failed to fasten on it, and to add it to all other acquisitions. Still in the same year, 1543, another of Cardan's domestic occupations was the collection into one manuscript volume of his epigrams and poems. His fervid temperament had often, of course, found relief in verse, but Cardan's poems were not in any set form given to the world. One or two are included in his works, and are so directly illustrative of his life, that in their proper place they will become a part of this biography.

In the succeeding year Jerome issued his *Five Books on Wisdom*¹, from the press of Petreius at Nuremberg, and added in the same volume a revised re-issue of the three books on Consolation, and one book on his own written works. In issuing an account of his own works, he professed only to follow the example set by Galen of old, and in his own time by Erasmus. This volume, containing works on three distinct topics, was supplied with an ample index, and dedicated to that

¹ "De Sapientiâ Libri V. quibus omnis humanæ vitæ cursus vivendique ratio explicatur : item de Consolatione Libri tres et Ephemerus sive libellus de Libellis Propriis." Norimb. 1544. This contains the first book *De Libris Propriis* to which reference has been made in preceding notes, under the title of "*De Sapientiâ*," &c.

patron whose strength had chiefly been of service in removing for him the obstructions offered to his progress by the Milanese College of Physicians. It was dedicated to Francisco Sfondrato, Senator and (when the book was published) Governor of Sienna, who in the dedication was lauded for the splendour and intellectual refinement of his private life, for his public piety, the innocence and extreme prudence and moderation of his conduct as a magistrate, his lenity, and his simplicity of manners.

In the fourth of the five books on Wisdom there occurs the statement concerning supposed cures of consumption, which was destined to affect the current of his after-life. "When we ourselves long laboured in this city against envy, and our income was not so much as our expenses (so much harder is the condition of a merit that is seen than of one that is unknown, and a prophet is of no honour in his own country), we made many attempts to discover new things in our art, for away from the art no step could be made. At length I thought out the cure of phthisis which they call phthoe, despaired of for ages, and I healed many who now survive." So the physician wrote, believing what he stated to be true.

In the same year, Petreius published Cardan's treatise on the Immortality of Souls, which was republished in the succeeding year at Lyons by Sebastian Gryphius. Out of the first fruits of his industry as Professor of Medicine at

Pavia, were furnished the revised sheets of the first book of the Contradictions of Doctors, published by a Scoto at Venice¹. These publications caused a continual increase of reputation, and close upon them followed, in the year 1545, as a grand climax, the Book of the Great Art, already discussed. Jerome became from that time forward one of the most popular among the learned authors of his day. A few more publications caused him to be more widely talked about perhaps than any other scholar of the time who did not take part in the great religious movement, or express any of the passions it aroused.

Prosperity had not come to Cardan, but he had brought it to himself; in spite of everything that had warred against him, he had at length achieved as a philosopher his conquest of the world. Dishonoured by his birth, discredited by his first training as a child, frowned upon as a youth by his university, rejected as a man by the physicians of his own town, with an ill-looking and sickly body, an erratic mind and a rough manner, a man to be disliked at first sight, and shrugged at by all that was dull and respectable; in spite of all, by the force of intellect and by the force of incessant, unrelaxing work, he had at last won ample recognition of his merits. He had

¹ This was republished, with the addition of another book, at Paris, by Jacobus Macæus, in 1546; and by Gryphius, at Lyons, two years later. It was then called "*Contradictentium Medicorum Libri duo, quorum uterque centum et octo contradictiones continet,*" &c.

used no worldly tact. His first published book would have been the last book issued by a prudent man, for it put new determination into the antagonism of his opponents. Nevertheless, he had steadily continued at his work, using a strong mind not as a toy but as a tool, and the result ensued which sooner or later must, in such case, always ensue. Man has but to will and work. The objects of a high ambition are not instantly secured. Cardan had not enough tact to create for himself popularity, but he had talent enough to create for himself fame. To create it for himself, laboriously, by endurance and exertion, because no man who moves at a lounging pace is likely to outmarch his neighbours. Jerome had forced his way up through years of discouragement, against contempt and poverty, in spite of severe bodily infirmities, and at the age of forty-four he was at length a recognised physician, occupying a professor's chair, and renowned through Europe as a man of letters. It should be remembered, however, that he had based his reputation on the writing of more works than there were years in his life, and that of those works none had been published until they had been reconsidered, polished, and rewritten more than once, commonly twice, but among his publications there are many passages that had been written five and even ten times by his pen before they were committed to the printer's types. The whole writings of

Cardan, closely printed, constitute as heavy a load as any one man would desire to carry on his back. Very familiar with the pen, therefore, his hand must have become, for to the last he printed nothing that had not been thus written, rewritten, and again, and perhaps yet again and again, revised¹. "For," said Cardan, "they who write without digestion are like men who eat crude things: for a slight and temporary satisfaction they inflict upon themselves a grave and lasting harm²." Even now we have not a right impression of the whole amount of student's work which Cardan's writings represent, for it remains to be added that his memory was very bad, and for the vast store of facts and illustrations in almost every department of the science of his day which his many books contain, he had to depend almost exclusively on written memoranda³.

This persevering habit of hard work, then, was the root of Cardan's fame, for genius is a sap that will not go far to produce flower and fruit, still less to beget solid timber, if there be not in its due place, hidden from the world's eye, a root like that to keep it fresh and stirring. There were, however, other qualities in Cardan's writings to which we must look for an explanation of the very wide popu-

¹ De Libr. Propr. (1557) p. 74.

² De Vitâ Propriâ, cap. 1.

³ "Quantum potui minus memoriæ reliqui quam scriptis."

larity that they obtained in his own day. He was not too much before his time. His intellect was strong and bold; he dared attempt all themes; and there were few of the world's mysteries on which he did not reason in his books; but while his power and originality of mind commanded universal recognition, learned and unlearned were glad to read the works of a philosopher who shared their weaknesses. He was perhaps loved by many not the less for being in certain respects weaker than themselves. On all the attractive and delusive pseudo-sciences of his own day, on ghosts, dreams, portents, palmistry, signs in the heavens and wonders upon earth, Cardan reasoned with good faith, and displayed in their discussion a profundity that flattered and encouraged shallower believers. Then, too, he wrote upon these and all things not only more profoundly, but more pleasantly than the great body of his neighbours. As a writer he was at once learned and amusing. His quick natural wit made him a brisk narrator even when he was most garrulous: there was pith in what he wrote, and his works always sparkled more or less with those well-considered and well-pointed sayings in which learned and unlearned equally delight. Mysteries of heaven and earth thus written about in a credulous and marvel-loving spirit, made the subject of a curious philosophy, would of course yield matter for attractive books. They were not less attractive because they were, or appeared to be, practical.

Cardan had always a purpose in his writing. Astrology and kindred topics were supposed nearly to concern the daily interests of life; Arithmetic and Algebra concerned them really. "Make a book," said Cardan, in another of his aphorisms¹—"make a book that will fulfil a purpose, use will give it polish; then, but not till then, it will be perfect." Probably his popularity was more advanced by qualities of this kind in his writings than by the great and absolute merit of his discoveries in Algebra, whereupon chiefly his fame must rest. The Book of the Great Art must, however, have assured to Cardan among the most learned men of his day that high respect and consideration which could be secured from the more ignorant by works of less essential value.

There is another element in Cardan's writings by which they were characterised from the first, and by which they were made interesting and amusing to their readers, namely, the tendency to become autobiographical, and to perform self-dissection. We should now very fairly turn from a writer who had the bad taste to obtrude himself in his own writings; but three hundred years ago, when modern literature was in its infancy, it had a right to prattle—the right age for talking properly was yet to come. Now the events of Cardan's life, and more especially those of his

¹ The aphorisms cited in this chapter, with one exception, are all from the fiftieth chapter of the book *De Vitâ Propriâ*.

later years, were of a kind calculated to excite men's sympathies, so that the fragments of self-revelation had always a life and charm in them; they were a pleasant sauce that heightened very much the relish of the reader for the entire book.

Another source of Cardan's popularity was a deficiency of liveliness in other learned writers. There were many isolated pleasant books, but there was no grave utterer of tome upon tome of Latin who had much more than his wisdom to dispose of. The readers of Cardan were sure to be amused with wit and eccentricity, at the same time that they were impressed with the conviction of his being the most learned man of his own time, for there was no other whose philosophy embraced so wide a range of subjects. In this respect, and in the charm of nimbleness and suppleness as a writer, his chief rival, Scaliger, was greatly his inferior.

In the year 1545, then, at which date this narrative now stands, Cardan lectured on medicine in the University of Pavia as he had lectured during the previous year, almost to empty benches. The confusion caused by war in the finances of the university did not check very seriously his career, and the position attained by him was at length a safe one. As a physician of much more than common penetration he was widely sought, and as an author, the series of works ending with his real master-

piece, the Book of the Great Art, had at last won for him an extensive reputation, Europe being then one republic of letters, which was addressed by every man who published books in Latin. The political boundaries of states then circumscribed no man's literary credit, and authors seeking publishers looked about Europe, not about their own town only. So the works of Cardan and of many another learned man were first issued, now from a press in his own country, now by a German publisher, and at another time perhaps in Basle or Paris. It was, as we all know, no mere spirit of pedantry that first prompted the use of Latin as an universal language.

We ought not to turn from these considerations of the source of the fame earned by Jerome among those of his own day without one or two comments, that may save him, and his age also, from too hasty contempt. There are superstitions current among ourselves. Credulity is now in some respects as gross, though not as common, as it was during the sixteenth century. If we have made what we believe to be astounding strides in knowledge, let it be borne in mind that the men of that age moved forward not less rapidly than we are moving now, in spite of the great mixture of error with their wisdom which appears so strange to us wherever it is obsolete. The political movements of rulers, the devastation of lands, the demoralisation and impoverishment of the people, were then

indeed deplorable, and we excel that period in wisdom by the sum of all experience that has been since acquired. Yet we should know that it was then possible to boast not less loudly or less justly than we now boast in our day of railways and electric telegraphs, and to believe that intellect had few more triumphs to achieve. "We should exult¹," said Cardan, writing in this vein—"we should exult in a field covered with blossom. For what is more wonderful than pyrotechny or the thunderbolt aimed by the hands of mortals, which is more devastating than the thunder of celestial beings? Nor will I be silent concerning thee, great magnet, by whom we are led through the vastest seas in the darkness of night, through fearful storms, into strange, unknown regions. Add also the invention of typography, achieved by mortal handicraft and heavenly wit, rival to the divine miracles, and what more is there to be done unless we occupy the heavens?"

Again we should remember, if we would do justice not to his age only, but also to Jerome himself, that the strange combination in one character of high intellectual endowment with superstitions of incredible absurdity—the kind of mixture we have noticed in Cardan—was common among the foremost men of all that time. Kepler himself, like Cardan, cast nativities; Tycho Brahe kept an idiot, whose mouthings he received as revelations from

¹ De Vitâ Propriâ, cap. xlv.

on high ; Melancthon was an interpreter of dreams ; and Luther, who abounded in many superstitions of his day, had so certain a belief in killcrops, or devil's changelings, that having seen a boy at Dessau whom he took for a changeling, he did not scruple to advise his murder. " I told the Prince of Anhalt, that if I were prince of that country, I would venture homicidium thereon, and would throw it into the river Moldau¹."

The self-revelations of Cardan may furnish us with a more vivid picture of such inconsistencies than could be had from others using the subdued tone common among men in intercourse with one another. I do not, however, think that he was in such matters a greater curiosity than many of the learned men about him. His eccentricity consisted perhaps more in the extent of his candour than in his peculiarities of conduct or opinion.

It is not, for example, every writer who is ready to amuse his readers with a chapter upon what he likes to have for breakfast or for supper, and how long he likes to be in bed. When he was old and garrulous, Cardan poured out a rich store of such details, which now serve pleasantly not only in aid of a minute depiction of himself, but also in illustration of the manners of his time².

¹ For these hints I am indebted to Dugald Stewart's preliminary article in the *Encyclopædia Britannica*.

² Authority for all the succeeding details upon food and dress will be found in chaps. vi. viii. and xx. of the book *De Vitâ Propriâ*.

Cardan had a constitution that required to be refreshed with a full measure of sleep. He avoided night-watchings as much as possible; he liked to spend ten hours in bed, during eight of which he slept if his health happened to be pretty good, otherwise he had not more than four or five hours of proper rest. When he was wakeful he was accustomed to get up and walk round his bed counting thousands, with the hope of making himself sleepy. He took but little medicine, being a doctor; but when his sleeplessness grew to be troublesome he abstained very much from food, or put himself upon half diet. The medicinal remedies most used by him to procure sleep were bear's grease, or an ointment of poplar, applied externally in seventeen places. It is an edifying thing for us to figure to ourselves one of the most eminent physicians of the sixteenth century rising at night weary of watching to grope for his little jar of bear's grease, and then patiently sitting down on the edge of the bed to anoint the top of his head and the soles of his feet, his elbows, his heels, his thighs, his temples, his jugulars, the regions of his heart and liver, and his upper lip, according to the formula prescribed, then creeping into bed again to try the value of his remedy.

Two hours after the sun Jerome rose for the day. He was not much troubled with the putting on of clothes, for he was careless about the purchasing of new dress; during

the days of which the story has been thus far told, careless upon compulsion. His private opinion was that four garments ought to suffice for a man, one heavy and one heavier, one light and one lighter. With those he could make fourteen respectable combinations of attire, not counting one that consisted in the wearing of them all at once. He did not quite act up to that theory, but he had not a predilection for new clothes, and was commonly to be found wearing dress of a past fashion, or when he became more of a traveller, wearing out in one country clothes bought in another. Thus, for example, after his return from the Scotch journey, presently to be related, he caused remark among his neighbours by continuing to wear the dress that he had bought in Edinburgh, Edinburgh fashions being foolish in the eyes of Pavia, Milan, and Bologna.

Cardan liked a heavy supper and a light breakfast, supper being his chief meal during the day. The light breakfast consisted in his mature and later life of bread, water, and raisins, tea and coffee being in those days unknown. To his wife and children he was attached very warmly, though Aldo, his youngest son, proved a young scapegrace, and began early to trouble him. His eldest boy, Gian Batista, was good and amiable; trained by Cardan to his own profession, he was simple-minded and of quiet ways; Clara, the daughter too, was a good

girl; and we may suppose that wife and children were not shut out of the philosopher's study. There he worked with his feet naked, dipping his pen into a costly inkstand, and not unwilling to bend his sickly face sometimes over one of the pet animals, whether it were cat, dog, goat, or bird, that was allowed to scratch or hop among his papers. Then he had patients to see, and his lecture to deliver. When his dinner came it was a light one. It was never less, however, than the yolk of an egg, with two or more ounces of bread, and with or without a modicum of wine. On Friday or Sunday he had shellfish, of which he was very fond. There was no solid food—not counting fish as solids—that he liked better than veal, and the way to cook veal to his utmost satisfaction was to stew it in a pot without liquor, after it had been well beaten with the backs of knives. It was then, he considered, moister and richer than meat roasted on a spit. After dinner Cardan liked a little music.

Supper—tea being of course an unknown meal—was the great gastronomic event of Cardan's day. There was always a dish of beet, or else rice with a salad; but he preferred endive. Fish, he tells us, he liked much better than meat; but then it must needs be good and fresh. Fond too of angling, he was glad when he had fish of his own catching. Of all fish he preferred fresh-water shellfish, and of those above all others river mussels, because,

we are told, his mother longed for them before he came into the world; but he had a great partiality for oysters too, and cockles. He is particular to specify his regard for codfish, halibut, and sturgeon, for turbot, mullet, gudgeon, soles, flounders, and others; also for pike and carp; also for land tortoises. He liked tunny in all states; and herrings, whether salt or fresh, but best of all when dried. After all he is not sure whether the best of all eatables is not a well-selected carp, weighing from three to seven pounds. From large fishes he lets us know that he removed the head and belly, but from small fishes only the backbone and tail.

Of flesh meats he preferred veal and pork, roasted or minced. He was particularly fond of chickens' wings, and of the livers of capons and pigeons, and of giblets generally.

He had a partiality for sweets; and records his power of appreciating the delights of honey, of ripe grapes, of melons, figs, cherries, peaches, and the like; he is at the same time particular in stating that none of these things disagreed with him. In oil he delighted beyond measure, whether mixed with salt or with sweet olives. Onions always did him good; and he found rue also of great virtue in preserving him from poisonous influences of all kinds. He derived benefit, also, from the use of Roman worm-wood. He allowed himself at supper about half a pint

of sweet wine, to which he put an equal, or rather more than an equal, quantity of water.

Having in his old age told the world these things, Jerome amused himself with the manufacture of a little burlesque sketch of the philosophy of victuals, which may be taken as a satire upon some of his own graver generalisations. "There are," he says, "seven summa genera of things—air, sleep, exercise, food, drink, medicine, preservatives. And there are fifteen species—air, sleep, exercise, bread, meat, milk, eggs, fish, oil, salt, water, figs, rue, grapes, and onions. There are fifteen preparatives—fire, ashes, the bath, water, pot, fryingpan, spit, gridiron, knife-back and knife-edge, a grater; parsley, rosemary, and laurel." Here, it may be observed, the list, made up at random, wants one article more. "Of exercises, there are the grinding-wheel, walking, riding, the small pestle and mortar, cart, making of cutlery, riding (this item is repeated), the saddle, navigation, cleaning of platters, friction or lotion; fifteen," adds Jerome, suddenly counting them up, though they are but a ragged ten, into conformity with his abstruse system of fifteens. "These things," he adds, writing no doubt after supper, with a twinkle in his eye, "I have reduced to a compendium, after the manner of the theologians, not without exercise of profound thought, and a great display

of reason. There are five things," he goes on to say, "that may be taken freely by all except old men; they are, bread, fish, cheese, wine, and water. Two may be used as medicines, mastix and coriander; sugar is used in many things. Two things are condiments, saffron and salt, which also is an element. Four things are to be taken moderately; they are, meat, yolk of egg, raisins, and oil: the last," he adds, "a latent element, answering in properties, when burnt, to the element of the stars!"

So, considering Cardan as an animal, the day, with its edifications, passed away, and there returned with night the period of sleep and dreams. By dreams, as we have seen already, the philosopher considered himself to be sometimes lifted out of animal existence, and brought into communication with things spiritual. His nights were as eventful as his days. He was beset by portents. He saw one evening a meteor which approached his court-yard, and, bright for a minute or two, was extinguished suddenly. That, we are told, preceded his acquisition of the favour of the Marquis d'Avalos, a profitable honour that was not of long duration. He dreamt one night¹ a strange dream of Alexander the Great, Hephaestion, and a lion, that preceded and portended his admission into the Milanese College of Physicians. Alexander

¹ The dreams here quoted are related in the fourth book *Syneiorum Somniorum* (ed. Bas. 1562), pp. 252, 267.

was d'Avalos or the Cardinal Sfondrato, the lion was the college, and Hephæstion was Luca della Croce. Ghosts of the dead came to the bedside of the excitable and nervous man. In 1537, a year after her death, his mother stood at the foot of his bed in the scarlet dress she used to wear when occupied in household avocations. She came to call him to her. Did she not know that she was dead? he asked. She did, and summoned him to come to her next year. But he had work to do, and did not wish to leave it. An accident, a narrow escape from serious hurt or death, in the succeeding year, was the fulfilment of that warning. There was an old college friend, also, who has been named on a former page, Prosper Marinon, a friend who had died in the flower of years, and with whom Jerome had formerly discoursed of ghostly things, and of the state of the soul after death. Prosper Marinon had come to his bedside, also a year after death, and he too being asked, had said that he knew himself to be dead, and had stooped down over his old friend, and kissed him on the lips. A second time, later in Cardan's life, the ghost of Prosper Marinon visited at night his old companion.

Such visions were a portion of his bodily infirmity. His flesh was tainted from the first with evil humours, and the gout, which appeared soon after he removed to Pavia, was no more than a link in a long chain of maladies produced at one time by the irritable state of his nervous system,

and at another time by the impure condition of his blood. But it is just to balance these considerations of his weakness with a few more suggestions of his strength. By the help of a few aphorisms taken from his works, this can be done very briefly. The first two of the following ideas I quote, not for their truth—they wrong humanity—but because they are at once clever and characteristic of the morbid feelings out of which they sprung; the rest are wisely thought as well as shrewdly uttered:

“To a man saying, ‘I pity you,’ I replied, ‘You have no right to do so.’

I told a youth whom I was warning against evil company, ‘I can show you many an apple that has become rotten through lying with others in a heap, but I can show you no heap that has made a rotten apple sound again.’

I said to a servant from whom I parted, ‘You please me, but I don’t please you; therefore I am obliged to leave you.’

Better omit a hundred things that should be said, than say one thing that ought to be omitted.

If you were without money, children, friends, and had the other gifts of life, you could be happy. Wanting those, and these also, there would remain to you few days for sorrow.

The vulgar admire knowledge that comes of experi-

ence ; the knowledge valued by the learned is that which is obtained by reasoning from the effect up to the cause.

When you mean to wash, first see that you have a towel handy."

Jerome tells us that the occupations in his study served to moderate the great sense of his love for wife and children. We have now traced his career to the conclusion of that long period of struggle with adversity which Lucia had shared with him. She was not to take part in his prosperity. The white-robed maiden who had tempted him to marriage had been a true wife to him for sixteen years. She had left a home in which there was no want, to starve with him in Milan, to struggle with him in Gallarate, to bear with him the scoffs of neighbours, to sustain his spirit in a thousand hours of sorrow. She must have shed her woman's tears over the loss of those jewels and those bits of bridal finery that had paid gambling debts, or been converted into bread. But she had not been weak. She was brave, says her husband, and of indomitable spirit ; gentle, affectionate, and rather good-looking¹. While Jerome laboured with his pen, she had spent anxious days in meditations upon dinner, and in the rearing of her children, when adversity hung as a heavy cloud over the house. But with the cloud she also was

¹ *Geniturarum Exemplar* (ed. Lugd. 1555), p. 113.

to fade away; she did not live to see her husband's utmost hope of fame accomplished. She lived out the long struggle, and (perhaps worn down by the succession of anxieties), just when the years of triumph were at hand, the young wife died. Married in girlhood, she could have been scarcely more than thirty-three years old when Cardan lost her tender ministrations.

Jerome had gone to Pavia with his wife, where, in spite of deserted lecture-rooms, and the great loss of income suffered in war times by the university, he did on the whole maintain his position; but to Lucia the change seemed no success. In the second year of office money was deficient, and in the year 1546, there being no funds at all in the hands of the senate, public salaries could only be regarded as bad debts. The house which had belonged to his mother, and which had fallen down, having in the mean time been rebuilt, Jerome returned with his family to Milan. In the next year the difficulty was removed; that year, however, the failing Lucia did not live to see.

The return to Milan caused a year of forced leisure and care. Cardan had to rely mainly on his pen, and spent six months in writing without intermission. It was then that he amused his anxious mind by writing his *Encomium on Gout*, to whom he was just pledged as a subject; thereto incited, perhaps, by the authority of

Lucian, among whose works there is a dramatic tribute to the might of the same despot, and throughout Cardan's works it is evident that he read Lucian and liked him. At the same time Jerome wrote also an Encomium of Nero; these works being exercises less of satire than of ingenuity. It was an old scholastic manner of amusement to heap up in an uncompromising way all possible arguments in favour of some obvious paradox. So earnestly did Jerome set to work, that we might be misled by his writing into the belief that he did really take Nero for a great and good man, if we did not know that not a doubt had then been cast on the good faith of those by whom he was originally painted as a monster. In the sixteenth century it would have been almost heretical to separate from Nero seriously the ideas of cruelty and wickedness. That Cardan chose Nero for his whitewashing because he was the blackest man of whom he knew, is evident upon referring to another of his works that contained the set of horoscopes recently mentioned. Among them is the horoscope of Nero, properly adapted to a character of superhuman wickedness.

So Jerome was occupied, he being then forty-five years old, when, towards the close of the year 1546, his young wife died¹. He was left in charge of his three motherless children, of whom the eldest, Gianbatista,

¹ De Morte. Opera, Tom. i. p. 676.

was thirteen years old ; the girl Clara was eleven ; and Aldo, the younger boy, was four. Delicate charge for a busy and eccentric student ! Cardan's own mother was dead ; but there remained to the children still their grandmother Bandarini, the Thaddæa before mentioned, who, when her daughter died, had survived by fifteen years her husband Aldobello. She, while she lived, occupied imperfectly the mother's place in Jerome's household¹.

Had Lucia lived on, how different the future might have been ! The terrible calamity that cannot be averted now, might then never have crushed her husband's heart. They might have taken delight together in the great fame of the philosopher, with which during his own lifetime all Europe was to ring, and while the note of triumph was resounding out of doors, there might have been other voices murmuring about the walls of home than the dull echoes of the mourning of a very desolate old man.

¹ De Vitâ Propriâ, cap. xxvii. p. 99.

END OF VOL. I.

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JEROME CARDAN.

THE LIFE

OF

GIROLAMO CARDANO, OF MILAN,
PHYSICIAN.

BY HENRY MORLEY.



IN TWO VOLUMES.

VOL. II.

LONDON:

CHAPMAN AND HALL, 193, PICCADILLY.

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GEROLAMO CARDANO, OF MILAN

PHYSICIAN

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IN TWO VOLUMES

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JEROME CARDAN.

CHAPTER I.

HOW CARDAN, PROSPERING, DENIED HIS SERVICE TO THE POPE AND TO THE KING OF DENMARK.

D'AVALOS dying in the year 1546, Ferrante Gonzaga became governor of Milan. He was a prince, according to Jerome, of the harshest temper, but one who favoured virtue and good men¹.

The governor of Milan was the one particular great man whose friendship Cardan, as a Milanese, having property within the province and desiring quiet, held to be essential. In 1546 the money difficulty with the Barbiani family was brought to a happy issue. Jerome received all that was due to him. In the same year he brought also to a successful end the last of the family lawsuits that had followed on his father's death, that with the heirs of his godfather, Domenico delle Torre². His fame

¹ Dialogus Tetim. Opera, Tom. i. p. 671.

² De Vitâ Propriâ, cap. iv. xxv. xxx.

was great as a physician. He was to suffer no more poverty. He desired to work in peace, and keep all danger at a distance. Throughout his life he abstained wholly from political disputes that were very profitless, a fertile source of trouble, and of risk that he was quite coward enough to shun; they would, moreover, clog his labour for the acquisition of a lasting name. The man behind whom he could shelter himself best against all enemies—who could best cause his property and time and life to be respected—was the governor of the province; his favour, therefore, the philosopher sought, and as he had obtained D'Avalos for a cordial patron, so also he desired the friendship of his less worthy successor. Gonzaga had, indeed, no taste for the society of learned men, but he could be taught to reckon the well-known physician among friendly citizens over whose lives and liberties he would be properly disposed to watch, and in those days of anarchy that was, in Jerome's case, a point worth gaining.

While the Professor of Medicine was writing indefatigably at Milan, during the year of absence from his duties in the university of Pavia, the year of his wife's death, there was a brilliant offer¹ made to him, which he refused. The friendship of the Cardinal Sfondrato had confirmed

¹ Details on this subject are given in *De Vitâ Propr. cap. iv. De Libris Propriis* (1557), p. 23.

and strengthened high respect for Cardan in the mind of the learned Cardinal Morone. Morone was one of the most notable of the great men who had a home in Milan, stood high in the favour of the Pope, and was at that time president of the Council of Trent, with the history of which famous conclave his name is throughout associated intimately.

Morone the elder, father to Jerome's friend, had been one of the shrewdest and most unscrupulous of Italian diplomatists ; he was chancellor to the last Sforzas, and closely, though by no means creditably, mixed up with Milanese public affairs when Jerome was a boy. His career in Milan closed with capture and imprisonment under the custody of Constable Bourbon. That check to his career was trifling. When Bourbon wanted money for his troops, and raised it by ransoms, Hieronimo Morone bought his liberty for twenty thousand florins, and moreover attached himself very adroitly to his late enemy, so that he became his counsellor and secretary. He even played a selfish game so well, that, after the death of Bourbon before the walls of Rome, he kept his own position in the army. This shrewd man had been one of the chief mediators in obtaining the liberty of the Pope Clement VII, and, in gratitude for that service, his son Giovanni received, at the age of twenty, and just

before his father's death, in the year 1529, the bishopric of Modena.

Giovanni Morone, who was both able and liberal, prospered in the Church. He after a time resigned his see, and was engaged in the negotiations preceding the establishment of the Tridentine Council ; then he was made a cardinal, appointed the Pope's legate in his second capital, Bologna, and was selected, in 1545, to preside over the Council of Trent, then opened. Such was his rank and standing in the world in the year 1546. In later years his liberal dislike of the new Roman Inquisition exposed him to the enmity of one bigoted Pope, and even to imprisonment. The shadow, however, quickly passed over his life, and in his last years he was again to be found effectively using his ability and moderation to promote the peace and real well-being of the Church. Once he was almost elected Pope, having received twenty-eight votes in the conclave. This Cardinal Morone then, who was eight years younger than Cardan, made to the philosopher, in the year 1546, a brilliant offer. There was a fine opening in Rome if he would go and practise there; entering into the service of the Pontiff, who would liberally pension him.

The Pope Paul III. was he who, as cardinal, had begun the building in Rome of the splendid Farnese Palace. In his habits he was magnificent and liberal, an easy man,

who, although worldly, was beloved of many, and was always an encourager of learning. When it was proposed to Cardan to go into his service, this Pope, Alexander Farnese, had for twelve years occupied St. Peter's chair, and was seventy-nine years old. He was a scholarly and courteous old man, who discoursed in a low tone of voice, and in a prolix way, picking his words deliberately, because, whether he spoke Italian, Greek, or Latin, he would be careful to use no expression that did not become the refinement of a learned man. His speech was also civilly ambiguous; he went through an intricate political career, getting promises and giving none, in great as in small affairs always avoiding the simplicities of yes and no. By this Pope, Jerome would have been appreciated. His infallibility was wholly subject to the influence of stars, and dreams, and omens. He entered upon no undertaking or matter of common business without proper astrological or other safe authority. An union with France, most earnestly desired, was very long delayed by him, because he could not get a right accord between a couple of nativities. How great a treasure would Cardan, therefore, have been to that old man!

Jerome declined the Cardinal Morone's offer, though it involved conditions not to be despised. The Pope, he said, is decrepid; he is but a crumbling wall; and shall I quit a certain for an insecure position? He did not then,

he tells us, fully understand the probity of Morone, or the splendour of the Farnese house. The new governor, Gonzaga, was as hostile to the Pope as the old governor, D'Avalos, had been friendly, and out of Rome his Holiness was more freely known as a man immersed in political business speculations, than by his home character as a kind and liberal old gentleman. The year 1546, too, was, indeed, the beginning of his end. He had laboured, upon public grounds, to effect peace between France and Spain, to subjugate the Turks and Protestants, and had worked even more zealously for the aggrandisement of his own family. After the Turkish war, he had obtained Camarino from the hands of a woman by an act resembling robbery, and given it to his grandson Ottavio. He had got Novara with its territories for his son Pier Luigi. He worked up domestic alliances with France and Spain, and nearly obtained for his grandson Ottavio, who had married the emperor's illegitimate daughter, Margaret, the whole duchy of Milan. For your imperial highness, said the Pope to Charles, had better not keep the duchy; you should not think of being a count, duke, or prince, but should be only emperor. You have not prospered since you became Duke of Milan. When you hold such titles men distrust you, for they fear that you desire to enrich yourself by the possession of such towns. You will do well, therefore, to give up Milan to some other person.

But to whom? Surely not to your French rival. I see nothing better than that you should give it to my grandson, your son-in-law; give it to him, with his wife, Margaret. This idea the Pope carried so far, that he prevailed upon his friend the Marquis d'Avalos¹, who was rather credulous, to perfume himself and go to court as governor of Milan, with a prettily turned speech, there to do homage to Margaret, and to propose that he should bring her home to Milan as his future mistress. It may be that this visible participation in the projects of the Pope made it not difficult for the enemies of the Marquis to perplex his last days with imperial disfavour.

Covered or open there was almost always a breach between the Pope and Emperor. The disaffected throughout Italy looked upon his Holiness as their most powerful protector. The imperialists—men like Gonzaga—hated, or at least distrusted the whole family of the Farnese, of which the younger members were assuredly concerned in a great deal of plotting. Chief mover among them was the Pope's son, Pier Luigi. He was the working spider that had charge of the whole cobweb of Farnese diplomacy. It is not necessary here to tell how, by the removal of the council of Trent to Bologna, and the withdrawal of his

¹ In Ranke's History of the Popes, to which I owe some of these particulars, I find stated in a note, that the MS. life of D'Avalos, referred to in a previous page (156), is in the Chigi library at Rome. It is said to contain amusing matter, and must merit publication.

troops in the autumn of the year 1546, the Pope wilfully, and through jealousy, checked the emperor in the full stream of his success against the Protestants. It is enough to add, that his son and family manager, Pier Luigi, was assassinated, chiefly at the instigation of Ferrante Gonzaga; and that he himself being compelled into a policy that for a time was hostile to the interests of his immediate family, the family that he had laboured all his days to aggrandise, his own blood turned against him. After an angry interview with the Cardinal Alessandro Farnese, in which he had been enraged greatly at his selfishness, the old man died. There were found, it was said, three drops of coagulated blood in his heart, a fatal distillation caused by the sharp throbs of anger. That is a cause of death that may be questioned, but of the effects of anger, it is certain that the old man died a little more than three years after Cardan had declined to pass into his service.

On the whole, then, there can be little doubt that the physician, in refusing the Pope's offer, decided prudently. Had he gone to Rome he would have been drawn into the current of political affairs, and have identified himself with one of two contending parties. The Pope, with all his liberality and splendour, was, indeed, no better than a crumbling wall for a philosopher to lean upon.

Jerome desired, also, to retain the position that he held as a professor in the University of Pavia. It suited his

habits as a student, it enabled him to renew with energy, under the best conditions, that study of his profession which he had suffered to become lax at Milan, and a far more important advantage attached to it was, that it placed him in the best position for the education of his eldest son; Gianbatista then was of an age to study medicine, and a young relative, Gaspar Cardan, worked with him under Jerome's supervision. His love for his studies and his love for his son, alike bound the new professor to the lecture-table¹. He had quitted Pavia only for a time while trouble made the university a bankrupt, but he did not remain absent longer than a year. In 1547 he returned to the duties of his professorship, and in that year was tempted by another dazzling offer².

Jerome had gone to Pavia with great honour, accompanied and lauded by his former teacher, Curtius, whose fame he was already surpassing. It was probably at Pavia that he had the opportunity of establishing a friendship with a very famous teacher, the bold founder of modern anatomy, Andreas Vesalius. Vesalius was thriving rapidly. He had defied the prejudices of his age, and based the study of the human frame on actual dissection of the divine image. He had contra-

¹ De Lib. Prop. Lib. ult. Opera, Tom. i. p. 131.

² Authority for the details of the succeeding offer, and the reasons given for its refusal, will be found in chapter iv. De Vitâ Propriâ, and in the last book of De Libris Propriis. Opera, Tom. i.

dicted Galen on a thousand points, to the disgust and alarm of the whole body of rule of thumb physicians, who, with Sylvius of Paris at their head, attacked him furiously. Vesalius had studied under Sylvius, an easy-going and most eminent professor of the old school, who, in teaching Galen to his pupils, skipped all the hard passages, and illustrated his doctrine by demonstrating from limbs of dogs dissected out for him by an assistant. He became so angry, that he absolutely raved at the presumption of Vesalius, who was not thirty years old when he overthrew the ancient system by the publication of his book upon the Fabric of the Human Body. Around Vesalius, however, the young men of the profession gathered; curiosity and admiration brought throngs to his lecture-rooms, and he was sought as a star by rival universities. He was Professor of Anatomy in three or four Italian towns at once, giving a short winter-course at each one in succession. In that way he came to Pavia¹, but although the friendship established between himself and Cardan was very intimate, it seems to have been maintained exclusively by written intercourse, for Cardan says that, friends as they were, they never met². There

¹ Details concerning Vesalius are drawn from the life prefixed by Boerhaave and Albinus to his *Corporis Humani Fabrica*, and from his own treatise *De Radice Chinâ*, which is full of autobiographical matter. A sketch of his career, founded upon that and other authority, was given (by me) in *Fraser's Magazine* for November, 1853.

² De Lib. Prop. Lib. ult. Op. Tom. i. p. 138.

was every reason why two such men should be friends. They were both famous: one eminent in mathematics, the other in anatomy; both physicians, yet with no clashing of interests to make them disagree. They both loved pleasure; and although Vesalius indolently wasted at the court of Madrid the mature years of his life, that time was in the future; when he taught at Pavia, his taste for luxury had not yet marred the polish or the keenness of his wit. Again, they had both triumphed in a battle with the world. Vesalius was a man thirteen years his junior, whom Jerome knew how to respect. On the other hand, the young anatomist, over whom old practitioners were groaning, who was compelled by the prejudices of society to plunder churchyards, and to keep dead bodies concealed sometimes even in his bed, probably would like Jerome all the better for the persecutions he, too, had experienced, and for his bold carelessness about conventional respectability. Certainly the professors of anatomy and medicine were friends; to that fact one testifies by statements and allusions scattered through his works, and to that fact the other also testified on the occasion that has caused his name to appear in the present narrative.

Christian III, King of Denmark, wished to secure long life for himself by attaching to his court some very eminent physician. Since, however, Christian had behaved in but a heathenish way towards the Roman

Church, it was not likely that his patronage would be desired by any but a bold man who was not afraid of venturing upon complicity with heretics. Christian's accession having been heartily opposed by the bishops, and the beginning of his reign having been much confused with civil war, his majesty, when he had been three years upon the throne, in defiance of his pledged faith, seized by force every bishop in his dominions, and abolished totally the Roman Catholic form of worship. The bishops after a time were liberated, on condition that they would submit to the new order of things. One only preferred to die in prison. This act of perfidy or piety had been committed about ten years before Christian wished for an Italian physician to his household. His dominions during his reign had been at no time free from intestine strife; and though he had been so good as to assassinate Danish Catholicism, he had not proved an enlightened ruler. He had bribed his nobles by securing to them every just and unjust privilege; and among others, power of life and death over their vassals. All that he had done the public only dimly knew in Italy, for news from Denmark must have found its way only in the shape of strange rumours and legends to the people of the south of Europe, at a time when it was not even easy for a man in Milan to know accurately what was being done in Venice.

The offer of the King of Denmark was made through his ambassador in the first instance to Vesalius, a physician, who was at the same time eminent and bold. He was habitually acting in defiance of Church bigotry, and was therefore perhaps not likely to object on theological grounds to a royal patient. Vesalius, however, had a different career before him. He already possessed good private means, had several lucrative professorships, and a large practice; his father also was apothecary to the emperor, and held out to him just expectations of advancement at Madrid. He therefore, of course, declined the King of Denmark's offers. Being requested then to name some other illustrious physician whom he would advise the ambassador to seek on the part of his master, he named Jerome Cardan.

The ambassador went therefore to Cardan, whom it had taken fifteen years in the beginning of his career to acquire the art of hoping for nothing, and upon whom society had then at last begun to shower its pecuniary blessings. He had achieved at last his conquest of the world; that done, he had only to receive homage and collect his tribute. On the part of the King of Denmark, there was offered to the prospering philosopher a yearly stipend of three hundred and six Hungarian gold crowns, in plain cash, and a share in the revenue accruing from a tax on furs, which would probably be less punctually

received, and the amount of which would fluctuate, but which might be said to make, together with the other sum, an income of eight hundred crowns. There was offered to him, in addition to this salary, free maintenance for himself and a household of five, together with allowance for three horses. That he would have from the king, and more he might receive as a physician, from the courtiers or other Danes who came to him for counsel.

Jerome was not to be tempted. He remained at Pavia. The climate of Denmark, he said, was cold and moist, and would not suit his sickly constitution. The people of Denmark he considered to be almost barbarous, a race of turbulent men, not more congenial to his mind than their soil would be to his body. In Denmark he seems to have felt that he would have been almost banished from that republic of letters in which he had always hoped to become a laurelled citizen. He urged strongly the heresy of the Danes, that they used rites and precepts very different from those of Rome, and that he should be compelled either to give up the religion of his country, which he certainly would never do, or to live openly at variance with those about him, and estranged from the consolations of his Church. He took no part in the quarrel between Catholic and Protestant, and he philosophised upon eternal things with a surprising boldness ; but though he ran the risk of being called by his own Church an impious

man or an atheist, still Cardan held with the whole force of his superstition to its mystical pretensions. By the dark side of his own fancy he clung firmly to the dark side of his Church's faith. Church and philosopher so joined were never to be parted. His opinion of the Protestant cause he incidentally expressed in comments on the horoscope of Luther. The heresy so widely propagated would, he said—and the stars said—fall to pieces of itself; for “it would rear up an infinite number of heads, so that, if nothing else convicted it of falsehood, yet by that very multitude of opinions it would be shown that, since truth is one only, in plurality there must be error¹.”

Another reason, urged by him with equal emphasis, against acceptance of the Danish offer, was his duty to his children. His eldest son was of an age to require university education; Jerome was proud of him, and loved him with a beautiful devotion. While he was teaching medicine at Pavia, he could most readily secure for him all requisite advantages. His other children, too, were recently left motherless. He would remain at home. Neither for Pope nor heretic would he move out of his appointed path.

¹ “. . . . solvitur in seipso—infinitaque reddit capita, ut si nihil aliud errorem convincat, multitudo ista opinionum ostendere tamen possit, eum Veritas una tantum sit, plurimos necessario aberrare.” De Exemplis centum geniturarum. Op. Tom. v. p. 465.

CHAPTER II.

LIFE AS A PROFESSOR IN PAVIA—CARDAN'S COUNSEL TO HIS CHILDREN.

THE stipend attached to the professorship at Pavia was liberal. It consisted in the first year of two hundred and forty, and in the year 1547 was increased to four hundred gold crowns¹. Pavia was the same university which Cardan had first entered as a neglected youth, when at the age of nineteen he escaped from bondage in his father's house. The honours that were at last paid to him there, the profitable medical reputation that accrued to him from his prominent position as a teacher of his art, and the wide difference between the actual salary he was receiving, and the few crowns paid to him as a Plat lecturer upon arithmetic, made up a sum of worldly good fortune, so unexpected, that Jerome felt for a time, he says, as though it had been all a dream!

Vesalius was perhaps the only medical teacher in Italy who was then able to fill his lecture-room. He had a stimulating subject. His dissections of real human bodies attracted the curious as much as the inquiring. He was a

¹ De Lib. Prop. Lib. ult. Op. Tom. i. p. 108. Geniturarum Exemplar (ed. Lugd. 1555), p. 80.

man of the world too, strong-willed, and perhaps overbearing in his temper, but of courteous habits ; young, handsome, well-dressed, affable, and a fluent speaker, master of an admirable style. Jerome Cardan had nothing in his body calculated to win for his learned expositions of Hippocrates the accident of popularity. He was a sickly man, rather small of stature, thin-armed, narrow-chested, lean, and gouty. His teeth were beginning already to fall out. He was a fair-complexioned man, with yellow hair, having bald protuberant temples, and a luxuriant beard under the chin. The massive temples, indicating as we now say Ideality, indicated as he then said the influence of Taurus at his birth. He had an ugly scar upon his forehead, small grey-blue, weak, short-sighted eyes—his left eye, since the first attack of gout, watered habitually,—and a pendulous lower lip. He was not trim of dress or suave of manner. He had a harsh, abrupt voice, and a slight stutter in his speech ; he stooped when he walked, and was ungainly in his gesture. Furthermore, his whole skin had been subject to an eruption since he was twenty-four years old, and did not become sound again till he was fifty-one¹.

¹ This personal description of Cardan is taken partly from the chapter *De Vitâ Propriâ*, and chiefly from the account of himself in the third and longest dissertation on his own horoscope. *Geniturarum Exemplar* (ed. Lugd. 1555), pp. 57—140.

On the other hand, he was renowned for learning; he was very earnest; students would like his eccentricities, and he worked indefatigably in his calling. For he devoted himself exclusively at Pavia to the study of his profession, because he was determined to work down the old belief that he was properly versed only in mathematics and astrology¹. His public teaching in the university is partly represented by the written Commentaries on Hippocrates, at which he laboured with the heartiest good-will. Into them he endeavoured to put the whole pith of Hippocrates and Galen, adding such free comments and elucidations as should cause the complete work to represent also the whole pith of the medical science of his time.

Whoever may desire to ascertain what sort of teaching was contained in the lectures delivered on the Principles and Practice of Medicine by a first-rate professor in the middle of the sixteenth century, should turn to Cardan's Commentaries on Hippocrates. In the opinion of their writer they excelled his other works. They were written, he said, in the years of his complete maturity, when he had also the advantage of full leisure. Though treating of his art generally, they embraced all that was in it. They were filled with the divine opinions of Hippocrates, and

¹ De Libris Propriis (ed. 1557), pp. 56, *et seq.*, for this fact and succeeding details concerning literary work done while Cardan was at Pavia.

they were written, he added, with the noblest purpose—namely, to increase health among men.

Upon that work, and upon three others, Jerome, towards the close of life, rested his assurance of immortal fame. The other three were : first, the Arithmetic (including the tenth book—that on the Great Art) already discussed in these pages ; next, a book on Astrology; and finally, a systematic work on Music. He claims to have been the first among moderns by whom an attempt was made to restore the art of music to its true position as a science. To those four books he was disposed to add his work on Physiognomy. His other writings, he said, might become more popular, as they were more attractive to the multitude, but those were the firm pillars to the temple of his fame.

Of them, too, the Commentaries on Hippocrates were most to be relied upon, because they would be most widely read. The art of healing, he said, concerns all men ; the name of its great author, therefore, will be in eternal honour, and his doctrine sought by thousands. For his other great works, Jerome expected a much more restricted circle of appreciating readers. His mathematical writings could be comprehended only by the learned. Astrology was falling into undeserved discredit, and the study of it was confined to a small number of men,—great lords or princes, and philosophers. Then, as for music,

they who did not practice it would scarcely care to read about its rules and principles, while they who did, had not the wit to comprehend them. Still, for their originality, and because they advanced four sciences, Cardan believed that the four treatises here named—all, except that upon Arithmetic and Algebra, written at Pavia—would be known and esteemed by future generations—be “eternal as the human race¹.”

Physicians now no longer quote Hippocrates. Astrology has given place to an exact science of Astronomy. Music has attained in all its forms a new development, and few musicians send their thoughts back to Cardan. Only the mathematicians, occupying ground that has long been highly cultivated, look back to him in their traditions as a famous pioneer.

For his ingenuity, Jerome was called by his friend Alciat a man of inventions. The works just named, and the treatise upon Subtle Things, belong, with a few others, to a distinct period of his literary life, which commenced when he removed to Pavia, and ended in the year 1552. Upon his writings during that period more will be said presently.

Andrea Alzate, Latinised Andreas Alciatus, the great jurist of his age, was another of the professors in the University of Pavia when Cardan was summoned thither,

¹ De Libris Propriis (ed. 1557), p. 70.

and he was not less ready than Vesalius to recognise the greatness of the Milanese physician and philosopher. Jerome, on his part, seems to have admired Alciat—who was eight years his senior—more than any other of his literary friends; he was even moved to write a brief sketch of his life¹. Alciat, the only son of a noble family, was born in a village of the Milanese from which he took his name—Alzate, near Como. He studied at Pavia and Bologna. He became doctor of laws, and having noble birth and a rich patrimony, as well as very great ability and eloquence, his talents were acknowledged early. Already at the age of twenty-two he was a professor at Pavia, where he wrote his *Legal Paradoxes*—"Paradoxa Juris." That was a work which created uproar among all old-fashioned commentators upon jurisprudence; it expounded with new vigour the best principles of Roman law, and laid the strong foundations of its author's fame. Alciat in Italy, and Zase in Germany, are indeed still remembered as the first liberal exponents of the Roman jurisprudence. At the beginning of his practice, this shrewd jurist had made himself remarkable when, as advocate in a certain witch-process, he opposed with all his energy the barbarous custom of extracting con-

¹ Vita Andreae Alciati. Opera, Tom. ix. pp. 569, 570. In the sketch of Alciat given above, the personal details are all taken from the notes left by Cardan. Whatever is there said more than Cardan tells, will be found in Ersch und Grüber's Allgemeine Encyclopädie.

fessions by torture from presumed witches. All that such people assert about themselves he declared to be nothing but fantastical invention. He set himself also against astrology, and declared later in life, when his opinion was heard with respect by every prince in Europe, that men practising astrology should be severely punished. Cardan took his opinion on that head very good-humouredly, and retaliated upon his friend by calculating his nativity, and printing it in a small book of horoscopes, cheerfully pointing out at the same time the liberty he took.

From Pavia the law professor was induced by the offer of high pay to remove to Avignon. A proposed reduction of his salary caused him to leave Avignon when he was twenty-nine years old, and go to Milan, where he practised and acquired great fame and profit. He was placed in charge of the provisioning of the town during the following years of distress and famine. From Milan, Alciat was called to Bourges, where Francis I. gave him a salary of twelve hundred ducats, and honoured his lectures sometimes even by personal attendance. The dauphin, before one lecture, made him a present of four hundred ducats. Students came from foreign lands to hear his brilliant and profound expositions of the laws, and his renown increased so much that he was to a certain extent contended for by rival princes. A man profoundly versed in law, and an acute counsellor whose wit was marketable—for he loved money as much as fame, and both inordi-

nately—could prompt and aid very substantially any king in quarrel with his neighbours. At the same time, he could give still more important aid in the establishment of a sound system of home polity, if any king then reigning should desire so much. Francesco Sforza, Duke of Milan, knowing these things, used his power over Alciat as territorial lord, and commanded him, on pain of forfeiting his patrimony and all property belonging to him in the Milanese, to leave the King of France, and teach again at Pavia. He was not to receive less there than was paid to him at Bourges. The lawyer went again, therefore, to Pavia.

Disturbed in his teaching by the wars, he removed, in 1537, from Pavia to Bologna. Home troubles abating, and the duchy of Milan having been bequeathed to Charles V, Charles also used his influence, as Duke of Milan, in compelling Alciat to teach at Pavia, with a salary of one thousand two hundred ducats. Renewed disturbances impoverished that university, and the purchasable jurist was enticed to Ferrara by Duke Hercules II, with the promise of thirteen hundred and fifty ducats yearly. In 1547 he was again fetched back to Pavia, where Cardan also, recently a widower, was lecturing; there finally Alciat lived and lectured—maintaining at the same time another house at Milan—until he died, in 1550, fifty-eight years old, and to the last unmarried. Jerome had been forewarned of his friend's death in a dream.

All the compulsions put upon Alciat had been profitable to him. The Emperor had made him a Count Palatine ; the Pope would have created him a Cardinal, but that honour being incompatible with the continued practice of his very lucrative profession, he did not at all see why he should hurt his income by accepting it. He became, therefore, an apostolic protonotary instead.

In 1547, when Cardan was at Pavia with two such men as Alciat and Vesalius for friends and colleagues, the jurist was arranging a complete edition of his works. He had come to the end of those wanderings which he had himself boastfully compared to the travels of the sun, who traverses all parts to light and warm them. He was tormented with gout, not the result, as in Cardan, of a bad constitution, but the price of his great dinners, for he was a mighty eater. The two gouty professors could condole together. Alciat suffered most. He was at last wholly unable to walk, and was afflicted in his hands as well as feet ; but the immediate cause of his death was a fever.

If he had not been tortured by the gout, Jerome thinks that his friend must have been the happiest of men. He surpassed in his calling all predecessors, and was entitled to Cicero's praise of Scævola as the best orator among lawyers, the best lawyer among orators ; that praise, too, the physician observes, was not only true, but also undisputed. Apart from the gout, his felicity was without equal ; he had incomparable erudition, stores

of books, universal fame in his own lifetime, influence with every prince in Europe, troops of attendants on his lectures, large salaries, great wealth, and an eloquence so singular, that men when he spoke might believe they were hearing a new Cicero.

Alciat cultivated friendships ; he was smooth, cheerful, even gay in his manners—perhaps that is one reason why he passed through life unenvied and unopposed—he often laughed while he spoke : a practice which, says Cardan, is detestable in most men, but in him had a certain grace. He was of middle stature and broad-chested, with large features, great eyes, nose, lips, and ears, so that, adds Jerome, he was, as one might say, bull-faced, but in such a way that even all those who did not know who he was, when they saw him freely gave him their respect.

Jerome was engaged at Pavia not only in the writing of books, the delivery of lectures, the cultivation of friendships, and the practice of his profession—in 1547 he cured, among others, the wife of his friend Annibale della Croce¹, who had long suffered from a diseased hip—but he had the education of his eldest son and of his young relative Gaspardo Cardan² to superintend. A pupil who had lately attended him at Milan, Giovanni Battista Boscano³, does not seem to have followed him to Pavia.

¹ De Ut. ex Adv. Cap. Lib. iii. cap. 2.

² De Vitâ Propriâ, cap. xxxv. p. 156.

³ Ibid. p. 157.

The young Gaspar had been entrusted to him by another Cardan of the same name, one of the relations who remembered him in his prosperity. Jerome had a great many relations on his father's side, for the Cardans, as before said, were long-lived and moderately prolific. There was even a second Jerome Cardan¹, also a physician, who, when Jerome the philosopher was at Pavia, had established for himself a low practice in Milan, where he curried favour with the druggists, and became a thriving man. He will not again be mentioned in these pages.

Gian Battista, Jerome's eldest son², was studious and quiet, but he had, like his father, some strong passions, and was aided less by example than by precept in the regulation of his mind. Clara was a good girl, of strong constitution; she had not been without maternal training, and after her mother's death was guided by her grandmother Thaddæa. Her father's oddities lay quite out of her sphere; she was a good daughter, and when she became marriageable, married. In her whole life she gave no trouble to her father more than belonged to the payment of her dowry; that he gave ungrudgingly as a home debt, to the payment of which,

¹ Synesiorum Somniorum (ed. Bas. 1562), p. 262.

² The account here given of Jerome's children is taken from statements made by him in his last essay on his own horoscope and the horoscopes of his household, in the *Geniturarum Exemplar*.

by her good conduct, she had become justly entitled. Aldo Urbano, the last born, who had come into the world under a most flattering configuration of the planets, to whom the stars promised lavishly talents and all their most glittering rewards, grew up a clever child, but a decided scapegrace. By his mother he had been known only as an object of solicitude. He had been born on the 25th of May, in the year 1543, three years before Lucia's death, and during those three years he had been afflicted, first with convulsions, then with dysentery, then with what his father called an abscess in the brain; also with six months of fever. He was three years old before he learned to walk. He grew, however, into better health, and under irregular training in a house not free from the rattle of dice, and too much visited by men of low intellect and morals, whom Jerome himself despised while he took pleasure in their voices, the quick boy learnt evil ways. Cardan confesses and deplors the hurt that he did to his children by the bad example that he set in his own house¹. They felt none of the toils from which the hard-working philosopher came for relaxation to the dice-table, or to that refreshment of music which could then hardly be attained except in company with men who were, for all other faculties that they possessed, to be despised and shunned. To the children, Jerome's hours in the study

¹ De Vitâ Propriâ, p. 62.

were the hours during which they had no father to watch over them; for, as Cardan has properly said, the man who writes and is intent upon his writing, is for the time being unable to see beyond his table; blind, therefore, and also deaf and dumb¹.

But the philosopher was not neglectful of his charge. In 1547 he was called to see a patient in Genoa², and after his return from that journey made some amends to his children for his absence by the composition of a little Book of Precepts³ for their use. Into it he put in a condensed form what he took to be the elements of wisdom, wording it in proverbs, among which are some taken, like the chief part of the learning of the time, from the ancients, as from Cicero, Seneca, or Publius Syrus; some were Italian proverbs current in his day, but the greater number were his own, for he was apt at writing pithy sentences, and freely scattered them about his works. Where they have been taken from others they were not unfrequently adapted to his use before they were adopted by him.

The little Book of Precepts to his children is important to this history of Cardan's life, because it is in the highest degree characteristic of the writer. If we keep in mind

¹ De Subtilitate. Lib. xiv.

² De Libris Propriis. Lib. ult. Op. Tom. i. p. 109.

³ Hieronymi Cardani Medici Mediolanensis Libellus Præceptorum Filiis.

the events of his career thus far detailed, in order that we may put the right construction upon some of his half-wise, half-bitter words, that otherwise can easily be misinterpreted, we shall receive a very distinct notion of Jerome's personal character—we shall see that he was at heart a gentleman as well as a philosopher, and a man of the world according to the temper of the day in which he lived. They will help us also to form a just measure of the quality of his mature intellect, obviously much riper when he wrote them than it was when he wrote the books on Consolation and on Wisdom. Incidentally, also, they serve to illustrate, sometimes in a very striking way, the temper of the days in which he lived; the chapter upon travelling, for example, is in that respect extremely curious. The following selection from these precepts contains about one-fourth of the whole. I have retained the original form of the tract, and have endeavoured to retain also its exact spirit, at the same time preserving a fair balance between the trivial and the weighty matters discussed in it. The Preface and Conclusion have not been abbreviated. Comment upon these precepts would be impertinent; but I have, for the convenience of the reader, prefixed asterisks to those sayings which illustrate most effectively either the life of Cardan or his times.

CARDAN'S COUNSEL TO HIS CHILDREN.

"PREFACE.

Many, my sons, think that the chief part of happiness depends on fortune; know that they are deceived; for although fortune does contribute something to it, yet the chief part of it lies in ourselves.

Chapter the First.—ON THE WORSHIP OF GOD.

Give thanks to God daily, if you can. You will become better by doing so. Speak of Him seldom, using His name only in reverence.

* Never swear to keep a secret, if, being free, you would not become slaves.

When human efforts are of no avail, seek help from God.

It is temerity to beg that God will do for us what we can do ourselves.

Whoever would be taught of God, must keep his spirit free from vice, his body free from grossness.

* Do not labour at interpretations of the sacred page, for they are manifold, and there is danger in that work.

Receive, as from God, all good that happens to you.

* Do not believe that demons speak to you, or that you see the dead; but never seek experience upon the matter: for many things lie hidden from our sight.

Chapter the Second.—ON THE OBSERVANCE DUE TO PRINCES.

Next to God, you must take thought of princes that you give them no offence.

Be gentle before them, or be silent.

Passionate or jealous princes do not serve, and do not live within their reach. Power joined to anger or suspicion, begets lightning.

Do not wilfully court princes or governors; such practice is suspicious. He who is pleased with more than ought to please him, wants more than he ought to want.

* Do not resist princes, or men in great power, or the populace, even though you are on the side of justice.

* Never do what will displease a prince. If you have done it, never fancy that you are forgiven.

* Time governs princes, princes govern men. Look for the end to time.

Chapter the Third.—ON LIFE.

After these two, study most your way of life, for that lies at the beginning of all.

Sleep should precede labour, labour should precede food, food should precede drink and exceed it.

Be content with food of one kind at a time, lest you become gluttonous.

Prefer water to wine; and among wines prefer the white.

Avoid war, plague, and famine, for they spare few and slay many.

Do not eat mushrooms, snakes, or frogs, or anything that grates upon the teeth; and do not drink two kinds of wine.

Eat only twice a day, and only once of meat.

* Never take choice morsels from strangers, or without knowing whence they come.

* When you are invited to a feast, if you must go, take heed of the faith of those who bring the cup to you.

Never sleep on feathers.

Dismiss all careful thoughts when you retire to bed.

* Hold hyacinth¹ in your hand to promote sleep and protect you against plague and lightning.

Chapter the Fourth.—ON JOURNEYS.

* Never leave the public road except of necessity, for safety or for any useful purpose.

* Never spend much time in a lonely inn, or ride into it at night.

* Avoid travelling alone, or walking through a town, for many things may happen to you.

* When you are on the road, think of the road and nothing else.

* Never walk under the eaves of houses; acting upon

¹ Or jacinth—the mineral, a gem of a fine purple red, the original of Milton's "hyacinthine locks."

this rule, I have twice escaped being killed by falling tiles.

* Do not cross unexplored water on horseback, or stormy water in a boat.

* Do not run your horse into deep water unless you are obliged.

* Never associate with a stranger on the public road.

* Stand out of the way of running men, or of wild animals. The mad dogs always go straight forward,

Chapter the Fifth.—ON THE VIRTUES, AND FIRST ON FORTITUDE.

All virtues are fair and honest, only by fortitude we become like the immortal gods, and happy.

Know that a good humour in an ill event bears half the weight of ill.

Live joyously when you are able ; men are worn down by cares.

What cannot be altered trouble yourself not about.

Be firm always ; obstinate never.

Chapter the Sixth.—ON PRUDENCE IN GENERAL.

Next to fortitude, nothing secures happiness so much as prudence.

Though nothing hinders you from knowing what cannot concern you, do not seek to know it.

* Do not put faith in dreams ; but do not scorn them, especially because they are peculiar in our family.

Predict nothing uselessly.

Four good mothers have begotten four bad sons :
Truth—Hatred ; Joy—Mourning ; Security—Danger ;
Familiarity—Contempt.

* It is more prudent to spend money usefully than to lay it by, for more results come of the use of money, which is action, than of the preservation of it, which is rest.

When the mind is perturbed, never deliberate.

Say little ; among many words some are imprudent.

* Never giggle ; laughter abounds in the mouth of fools.

Great prudence and little wit is better than great wit and little prudence.

Fortune is more easily to be found than got ; more easily to be got than kept.

* There is no necromancy ; it is better for you that you put no faith in alchemy : avoid what is in bad repute.

Do not talk to other people of yourselves, your children, or your wife.

Let your dress be clean and elegant, but never costly.

You will know wise men by their works, not by their words ; you may know fools by both.

* When you talk with a bad or dishonest man, look at his hand, not at his face.

Chapter the Seventh.—ON PRUDENCE WITH REGARD
TO MEMBERS OF A HOUSEHOLD.

* Remember that a family is held together, not by fear or by love, but by mutual respect.

* Love children, honour brothers; parents and every member of the family love or turn out of doors.

Chapter the Eighth.—ON PRUDENCE WITH REGARD TO
A WIFE.

The care of a wife is before the care for wealth. A bad wife makes the rich man wretched, but a good wife makes the poor man happy.

Do not marry a woman without moderate possessions.

A woman loves or hates; she has no middle humour.

Never irritate a wife, but give her counsel.

Do not marry one who is quarrelsome, she will not obey you once.

Take no wife from a witless family, or one infected by a constitutional disease; you perpetuate sorrow by so doing.

Before other people, neither flatter your wife nor slight her.

* A woman left by herself thinks; too much caressed, suspects : therefore take heed.

Chapter the Ninth.—ON PRUDENCE TOWARDS
CHILDREN.

Children chiefly follow the nature and constitution of their mother.

* Never let your children have a stepmother ; if you do, never put faith in her as their accuser.

* Educate a bastard as if he were legitimate, for he is your own blood.

* Trust schoolmasters to teach your children, not to feed them.

* You owe to your children agreeable names, knowledge of a useful art, good manners, instruction in music, arithmetic, and writing.

Chapter the Tenth.—ON PRUDENCE WITH REGARD TO
WEALTH.

Wealth comes by inheritance, by favour of princes, by the laborious exercise for payment of a difficult art.

* He who wishes to grow rich should undertake no journeys except for certainty of gain.

Do not waste or despise wealth : it is the instrument of all good.

Never display money or jewels.

Know how to be mastered and to lose ; sometimes that is profitable.

Count your gold twice, weigh it, and ring it.

* Little gold is got in a long time and with much labour. Much gold is got with little time and trouble.

* Never complain of a father who has left his children poor, if he has left them victuals and the knowledge of a trade."

Chapter the Eleventh is on Prudence concerning Honours ; Chapter the Twelfth on Prudence in Business ; from which it will suffice to quote one precept :

" Deeds are masculine and words are feminine. Letters are of the neuter gender.

Chapter the Thirteenth.—ON PRUDENCE TOWARDS
PARENTS, BROTHERS, AND RELATIONS.

Love a just parent. If he is unjust, bear with him or quit him.

Be the best friends among yourselves, but before others quarrel.

Chapter the Fourteenth.—ON PRUDENCE TOWARDS
FRIENDS.

Have as many good friends and neighbours as you can ; they strengthen reputation, and give comfort.

* If necessary, slip out of the tie of friendship, never break it.

Never desert a friend at the bidding of a relative or flatterer.

Speak only on compulsion of a friend's crime, never of an enemy's misfortune.

Chapter the Fifteenth.—ON PRUDENCE TOWARDS
ENEMIES.

Never talk about your enemies.

Speak fairly to enemies who hide their designs, even though you may intend to be revenged upon them.

If you hate a man, though only in secret, never trust him, because hate is hardly to be hidden.

* With enemies do not speak personally, but through messengers.

Chapter the Sixteenth.—ON PRUDENCE IN SOCIETY.

Avoid those who are wicked, envious, foolish, talkative, passionate, proud, given to laugh at others, or ungrateful.

Do not be querulous, meddlesome, morose, or too inquisitive.

* Put no trust in a red Lombard, a black German, a blinking Tuscan, a lame Venetian, a tall, thin Spaniard, a bearded woman, a curly-pated man, or a Greek.

Avoid nothing so much as men who speak well and act wickedly.

* It is a part of happiness to mingle with the happy; diligently avoid, therefore, the company of the unfortunate.

* Whoever calls you gambler, calls you a sink of vices.

Contemn no man for a bodily deformity; the mind is the whole man.

Delay is the handle to denial.

Visit nobody while he is eating, or while he is in bed.

The misfortunes of others, if they do not tell you of them, do not seem to know."

Then follows a short chapter on Wisdom, and then a chapter entitled "What Books are to be Read." It is remarkable that from this chapter he omits some of his own favourites, but he is putting down his precept, not his practice.

"* These authors only are worthy to be read, because the life of man is long enough to read them in ; but, if more be taken, some of these have to be left, and so there is made an exchange of gold for brass.

In Poetry : Homer, Virgil, Horace.

In Grammar : Priscian.

In Rhetoric : Cicero, Quintilian.

In History : Xenophon's Anabasis, the Catiline of Sallust, Suetonius, Argentonius, Voyages to the Indies, Plutarch's Lives, and Cario's Compendium.

In Mathematics : Euclid, Apollonius, Archimedes, Vitruvius, Ptolemy.

In Medicine : Hippocrates, Galen, Avicenna, Rhases for his copiousness; Dioscorides, Pierre Bellon, Gesner, Vesalius.

In Physics : Aristotle, Theophrastus, Plotinus, Plutarch.

Miscellaneous: Pausanias, Pliny, Athenæus; works of Pierre Bellon, Hieroglyphics of Pierius, Mythology of Natalis, Coelius Rhodiginus, Coelius Calcagninus, Stories of Boccacio, Polyphilus, Thesaurus of the Latin language.

Beyond these you should not go; by using them you will economise your time, become richer in information than you could otherwise be, save much cost of book-buying, and want nothing in the way of solid learning, elegant composition, or amusement."

Chapters the nineteenth to the thirty-sixth and last, are very short, some of them containing in the original not more than a line or two. The following are some of the remaining sentences:

"Take care that you are better than you seem.

Envy is to probity as shadow to the flesh; so do not fear it.

* Be more ready to help friends than to hurt foes.

* Play for relaxation, not for money.

* Never lie, but circumvent.

* A liar either is a fool, or else he differs little from a thief and traitor.

* Take heed that you never weaken a true cause with falsehoods.

* To avoid falsehood wear truth as a habit, occupy yourself only on worthy things, and do not argue.

Have no horse, or a good one. Never leave him loose upon the road.

* Do not spend upon animals more than a thousandth part of your income."

How much Jerome himself had spent on them we ought not to inquire: many of the precepts here cited have been manifestly warnings to his children against doing that which he himself had done. Having ended his compendium of precepts, he appends to them the following

"CONCLUSION.

Observation of all these rules is not necessary to happiness, but he will be happy who observes them.

It is, however, much easier to know these things than to do them."

CHAPTER III.

FATHERLY AND HOUSEHOLD CARES—MARVELS OF SCIENCE—THE
PROFESSORSHIP RESIGNED.

THERE is no fault in the parent, said Cardan, that we may not hope to see amended in the child. "What may we not hope of children? We are old and they are young; we sick, they sound; we weak, poor, despised, they robust, rich, and of much esteem; we bearing envy and enmity, exiles, they grateful among friends and in their home. There is nothing that the parent suffers of which he may not hope that it will not be suffered by his child¹."

The first joy of the parent², said the philosopher, than whom no father ever was more fond, the first joy of the parent is when a child is to be born. Then let the mother be well cared for, let her eat this and not eat that, and let

¹ De Utilitate ex Adversis Capiendâ (ed. cit.), p. 248.

² Ibid. pp. 975—983, for the account of the six joys of parents in their children, and for the succeeding details, where no other reference has been appended.

her never lift her arms over her head. The second joy is when the child appears. At once let it have some fine honey, with a few grains of powdered hyacinth or emerald. It may be weaned when the first teeth appear, but long lactation is a good thing; Plotinus is said to have been suckled until he was seven years old.

But it is when infants first begin to use their feet that "they first become delightful, and this is the third joy of parents. As the joy increases, greater still becomes the fear: for they are both one feeling. And as the fear increases, greater still becomes the solicitude and watchful care. If they become frightened, let them at once be steadied by the helping nurse." Surely we have here an insight into Jerome's heart!

Let the young child, he further says, be shut out from the sight or hearing of all ill. When he is about seven years old, let him be taught elements of geometry to cultivate his memory and his imagination. With syllogisms cultivate his reason. Let him be taught music, and especially to play upon stringed instruments; let him be instructed in arithmetic and painting, so that he may acquire a taste for them, but not be led to immerse himself in such pursuits. He should be taught also a good handwriting, astrology, and when he is older, Greek and Latin¹.

¹ The preceding summary is taken from Cardan's *Proxenata*, seu

It is the fourth joy of parents to see the mind expand within the growing child. He should be placed under a master who is a married man¹, and who, if it can be afforded, should have charge only of a single family. The discipline should be severe. If children are to become well trained, and firm in virtue, Jerome, in one place, says that they should be entrusted to a severe and even cruel teacher, who would train them up in familiarity with blows, with hunger, toil, the strictest temperance, and subject them to a sharp despotism outside the doors of home². That, however, he gives as one strong expression of a general faith in the importance of rough training for a boy. Elsewhere, in many passages, his creed assumes a milder aspect. Home discipline must not be too severe, the father must not be lost in the master; and it is one use, Jerome thinks, of a schoolmaster, that the necessary whippings may come only from his hand, and the hatred of the children fall only upon his head. He would encourage in boys the use of the most laborious games, and teach them to regard nothing as more atrocious than the use of dice, that render the rich man of the morning the beggar of the night.

de Prudentiâ Civili—Liber recens in lucem protractus: vel e tenebris erutus.—Ludg. Bat.—Elzevir. 1627, p. 695.

¹ De Ut. ex Adv. Cap. p. 981.

² Proxenata, pp. 691—694, for these and the next details.

Again, advises the philosopher, choose those men for masters who both know how to teach and really wish to do it¹; for great are the weariness and labour that attend the task. Flatter not the pupils; above all, flatter not the teacher; do not flatter, but reward him solidly². The expense of a good teacher is not light, but there is nothing better than to incur it if you would train up good youths, and sound. Children should be trained to take written notes of what is taught them, and to answer questions instantly. The manner of teaching should be pleasant, mixed with jests that must not pass the bounds of decency. All things may be taught merrily, says Jerome, except Greek and Latin³. And, after all, he inclines most to believe that kindness in the teacher will do more than force, and that in using force blows are to be avoided. For, he says, though by the aid of these the children may be made to learn, yet, the brain being filled with lacrymal matter, they are apt to turn out fools or rascals⁴.

It is evident that he sways curiously between two opinions. By nature, Cardan was very kind, and shrank

¹ "Eos eligas qui sciant docere, et qui hoc velint: magnus enim labor, tædiumque majus." Loc. cit.

² "Absint denique blanditiæ omnes, et maxime ab educatoribus. Eorum loco perpetua sint benefacta."

³ De Ut. Adv. Cap. p. 251. Proxena, p. 695.

⁴ Proxena, p. 696. "Meliores sunt in universum blanditiæ vi, et in vi fugere oportet verbera: nam etsi perficiant ex his, ubi defecerit ætas, impleto cerebro lacrymali materiâ, stulti aut improbi evadunt."

from cruelty¹; but his age had faith in the rod, and his reason succumbed to the opinions of Solomon. Fear, he knew to be wholesome, and hunger useful to a boy, by keeping down his passions and begetting sober ways; confinement, also, is good, but not unless coupled with low diet². All these constraints were to be put upon a son in love, for he must be watched over with anxious tenderness; and, "whenever doubts arise," says the father, "we must risk all wealth, though it were of a hundred thousand Spanish crowns, rather than risk the safety of our children³."

When the son has attained the age of twenty comes the fifth joy of his parents, for then they may see him governing his own actions while he remains obedient to themselves. After the age of twenty, but not sooner, give daughters in marriage. When a child marries, the sixth joy of the parents is complete, and dear to them is the hope that they will see their race continued. Such thoughts disclose to us the vulnerable spot in the strong heart of the philosopher.

With these fatherly reflections some astute sayings are mingled. His own children he meant to train as students, but he advised fathers, who had sons to put out in the

¹ "A crudelitate fui semper alienus." *Geniturarum Exemplar* (ed. 1555), p. 87.

² *Proxenata*, p. 696.

³ *Ibid.* p. 691.

world, that those who were courteous and able should be put with princes, those who were active and laborious with rich merchants, those who were ingenious with great artificers, those who had ingratiating ways, and even tempers, with the sons of rich men, as fellow-pupils, with people hating their kindred and the like, with old men especially, and misers¹.

There were fatherly dreams also. One night, in the year 1547, Jerome, whose wife had not then long been dead, dreamt that there remained to him but a single son. In the morning he went out thinking of this, and was pursued by the nurse, who told him that his son, Aldo, was convulsed, that his eyes were distorted, and that she believed him to be dying. The vision of the night had warned him of necessity for energetic measures, if he would preserve his child. He ran home, therefore, without delay, to watch over him. He administered a powder composed of pearl and gems. It acted as an emetic. He administered another. It was kept upon the stomach. The boy slept, perspired, and in three days was well².

Another dream³ was yet more curiously ominous, and really seemed like a shadow thrown before by the calamity, of which a portent had appeared at Gianbattista's birth. In the year 1550, Cardan being then at Milan,

¹ Proxenata, p. 694.

² De Vitâ Propriâ, cap. xxxvi.

³ Synesiorum Somniorum Lib. p. 264.

one day in May, between the hours of three and five in the afternoon, when he had dropped asleep, because it happened to be Sunday, he dreamt that he had married a second wife, and was reproaching Lucia with the fact that his new wife was quieter than she had been. Lucia, who stood by, replied to him only with sad looks and silence. The new wife soon disappeared, Lucia remaining.—That phantom was the only second wife taken by the philosopher, who held stepmothers in dread, and frequently warned fathers against them, quoting even, in one place, the harsh line—

Lurida terribiles miscent aconita novercæ.

He did not marry again in the flesh.—The second wife of his dream having disappeared speedily, and Lucia remaining, whom he knew to be dead, she asked him for five masses; then she touched him, willing to be touched, and having touched him, fastened a label on his forehead, which he bore unwillingly, because he feared its import, and it soon fell off. Then it appeared to him that his mother came to them, and although she also was dead, and had died, indeed, ten years before his wife, he thought her to be living. And lo! between the two dead women stood his eldest son! They had between them Gianbattista, not as he then was, a youth of sixteen, but as he had been when he was a child of seven years old. Jerome feared that Lucia would take her son away with her into the

shades, and he entreated, therefore, of Clara, whom he thought to be alive, that she would hold him by the hand. She did not. Then he turned to Lucia and besought her not to touch the child. She bade him be of good cheer. At last they departed, and the boy was forced away from his father by one of the women over a small bridge.

Two or three facts may be here set down out of a large mass of detail concerning household economy¹ contained in Cardan's works. He gives minute directions for the management of servants. Boys—who are to be preferred—may be corrected by the stick, but when they have grown up, they must not be struck or treated as if they were slaves. A man's nurse is to be regarded with as much respect as a superior. A bad servant may be at once known by his carrying of fire. There is nothing needing so much care in a household as fire, nothing that will grow so immoderately when it is not wanted, or fall into ashes so perversely when it is required. A servant who carries it behind him is to be dismissed at once. If he hold it at his side, occasionally looking at it as he goes, he is to be regarded with distrust. The good servant carries fire in a straight line before him. Great watch is to be kept over

¹ These domestic details are chiefly taken from chapters xxxviii. and xxxix. of *Proxenata* (pp. 155—199), entitled respectively, *Res Domestica et ejus Conservatio: Œconomica distributio et Præcepta*. A few facts among them are extracted from the fourth book *De Ut. ex Adv. Cap.*

servants. The practice usual in cardinals' houses of locking them in from the outside after dark, is inconvenient, because, if one should be ill in the night, none can go out for assistance, or in case of accident, escape is difficult. Jerome recommends systems of dissimulation and espial, by the adoption of which any man suspected of secret ill-doing may be tricked into betrayal of himself. Has anything been stolen, call the household together suddenly, and let each take a tremendous oath, involving death upon himself within twelve months, if he be guilty. Make a sign upon each man's breast, as he swears, in consecration of his vow; in so doing, the thief will be detected by the movement of his heart. It is well, if one has three or four good servants, to let some one watch while they are eating, not to stint them, but to prevent theft. It is a common thing for servants, when their food is given out, to simulate an extraordinary appetite, and, after eating for two or three days a very large allowance, to make good their claim, set by what is given to them in excess, and sell it out of doors, or take it to their sweethearts. The usual daily allowance for a servant is two pounds of bread, four measures of flat wine, and for other victual seventeen farthings.

Frangible vessels in a household must be left to princes, but there is need to take care that the vessels used do not corrupt the food that is put into them. There should be

two wine-cellars, and everything should be kept locked, there being to each lock a duplicate key. Jerome invented a lock that would betray any one who opened it by stealth, and also a contrivance, of which he gives a picture, for the more effectual securing of a bedroom door. Since it is very customary to steal linen at the wash, he recommends that it be marked very distinctly in one corner, and since that mark may by chance be obliterated, and a false accusation might thereupon be brought against the laundress, he advises the addition of two small and apparently accidental marks upon some other portion of each piece. The practice of marking linen probably was then not general, for Jerome gives a diagram in explanation of his meaning. There are—as it may be guessed from the character of these examples—few facts connected with the social history of Italy in the sixteenth century of which illustrations are not to be found in Cardan's works.

It was thought prudent by Jerome that men should keep not only their own papers, but all writings addressed to them, even sheets of empty words and begging letters. Use might arise. He had in his study four locked cupboards—one for literary papers, one for bills and papers touching upon money affairs, one for the courtesies and compliments of life, and one for waste.

Now, therefore, we have come back to the physician's

study, and there arises a fit opportunity for giving some additional account of the pen work done by him during these years of his professorship at Pavia.

7 Some of the works not yet specified as having been written between the years 1546 and 1552 may be mentioned briefly¹. After his return from Genoa it has been said that he wrote the little book of Precepts, but on his return he had brought home with him a work that had been written on his journey to and fro, namely, four books on the Preservation of Health—first, in the case of young and healthy people ; secondly, in the case of old people ; thirdly, in the case of diseased people ; and, fourthly, in particular trades. Afterwards he wrote also ten books of explained problems upon all sorts of subjects, classified, and an Italian popular treatise meant to be both instructive and amusing, “*De le Burle Calde*.”

Of the Commentaries on Hippocrates and Galen, it is enough to say that they form about an eighth part of the whole mass of Cardan's published writings, and would fill about twenty-five volumes of the magnitude of that now in the reader's hand. They are as much extinct as the megatherium, although the author himself rested his hope of fame chiefly upon them. In his day they were valuable, and they still have a kind of fossil value, but as they con-

¹ *De Libris Propriis*. Lib. ult. Opera, Tom. i. pp. 71, 72, is the authority until another reference occurs.

tain little matter that has any biographical interest, it is not requisite to speak more of them here. It is enough to state their bulk. The work on Music was divided into five books. The first treated of general rules and principles; the second of ancient music, rhythms, hymns, choruses, and dances; the third of the music of the writer's own time; the fourth of the mode of composing songs and counterpoint; the fifth was on the structure and use of instruments, being an account of the various musical instruments then commonly in use. This, too, was at the time a valuable work, and in many respects original; it may be said also that there were one or two Italian tracts on music left among his writings. Of the works hitherto undescribed, the one concerning which Cardan himself would most wish a biographer to speak fully, is that upon Metoposcopy¹, a kind of physiognomy invented by himself, or rather amplified so largely from a few existing hints, as to rank practically as a new invention. Melampodius had written upon the mysteries of warts upon the face; the study of them is a part of Metoposcopy, but that science is concerned chiefly with the lines—not the furrows—upon the forehead. There are fine lines upon

¹ "Hieronimi Cardani Medici Mediolanensis Metoposcopia, Libris xiii. et octingentis faciei humanæ eiconibus complexa. Lutetia Parisiorum. Apud Thomam Jolly, 1658." That was the first published edition of the book; from it are taken the succeeding statements.

the forehead as there are upon the hand ; Jerome applied Astrology in a minute and systematic way to the elucidation of them.

This important work was written at Milan in the year 1550. Until that year all had gone well in Pavia, but then the professor's salary of two hundred and forty gold crowns being again stopped by the troubles, he remained in Milan¹. In the succeeding year he resumed his lectures. During the vacation year 1550, then, Cardan wrote thirteen books of Metoposcopy, illustrated with a great number of plates; but it was not until one hundred and eight years afterward that they were first partially made public by a bookseller in Paris.

A few words will explain the nature of the science. Of lines upon the forehead, it is necessary for the metoposcopist to observe the position, the direction, length, and colour, and the observation is to be taken at a proper time; that is to say, in the morning, when the subject of it has not broken fast². The forehead was mapped out by Cardan as an astrologer, much as the head has been since mapped out by Gall as a phrenologist. Seven lines drawn at equal distances, one above another, horizontally across the whole forehead, beginning close over the eyes, indicate respectively the regions of the Moon, Mercury, Venus, the Sun, Mars, Jupiter, Saturn. The signification of

¹ De Vitâ Propriâ, cap. iv.

² Metoposcopia, p. 6.

each planet is always the same, and forehead reading is thus philosophically allied to the science of palmistry, already discussed. Jerome presents head after head, marked upon the forehead with every combination of lines that had occurred to him, and under each writes the character and fortune which, by his system, he discovers such a combination to betray. Thus, if a woman has a straight line running horizontally across the forehead, just above the middle—in the region of Mars—she will be fortunate in life, and get the better of her husband¹; but if the same line be crooked, it betokens that she is to die by violence². A waving line, like Hogarth's line of beauty, over one eye—in the region of the Moon—assures to the possessor good fortune upon water and in merchandise; women with this line will be fortunate in marriage and in all their undertakings³. It is also excellent for a man to have a perpendicular line running from the nose half-way up to form a T, with a line not quite horizontal, but running obliquely, so that it begins in the region of Mars, on the left, and ends on the right hand, in the region of the Sun. He will be brave, strenuous, and noble—victor in all his undertakings; and a woman with such lines will be generous and fortunate⁴. Configurations that by no means flatter their possessor form

¹ Metoposcopia, p. 34. ² Ibid. p. 37. ³ Ibid. p. 11. ⁴ Ibid. p. 33.

the majority, but I cite none of these; let it be enough to add concerning warts, that a woman who has a wart at the root of the nose, between the eyes, is a most atrocious monster, guilty or capable of the worst crimes that a foul imagination can conceive, and that she is destined to a wretched end¹. A woman with a wart upon her left cheek, a little to the left of where the dimple is or should be, will be eventually poisoned by her husband.

The published work is but a fragment of the entire treatise, which in other books was made to explain on the same principles the meaning of lines upon the knee, arm, navel, and foot, they being discussed and illustrated as minutely as the lines upon the forehead². Such was the result obtained by building one false science on another. Astrology based upon astronomical observations—error based upon truth—had in it some tangible matter; but Metoposcopy based upon Astrology—error based upon error—is one of the most unsubstantial speculations that was ever built up by a scientific man.

The books on Subtilty occupied Cardan during three years at Pavia, and were, in part, first published at Nuremberg; shortly afterwards, more fully, at Paris, in the year 1551³. They acquired great popularity, and

¹ Metoposcopia, p. 188.

² De Libris Propriis (ed. 1557).

³ "Hieronimi Cardani Medici Mediolanensis De Subtilitate, Libri xxi.

were soon reprinted at Lyons and at Basle. These books, we are told, were first suggested to their author in a dream, wherein it appeared to him that he saw a book in twenty-one parts, containing various treatises, and about the middle a little geometry, written in the most delightful style, not without some agreeable obscurity, wherein there were revealed all the secrets of the world about him. In it was made clear whatever was dark in all the sciences, and he derived such pleasure from the contemplation of this book, that when he was awake the delight abided with him, and he remembered even its form and plan.

There is something within us, he says, commenting on such a dream, something besides ourselves¹.

Then there arose in him a great desire to write such a book, though it was larger and more ambitious than any that he had yet attempted, and he could not hope to make a mortal work so perfect as the one of which he dreamed. He began then to write it, and for three years, not only was writing it by day among his other labours,

Ad Illustrem Principem Ferrandum Gonzagam Mediolanensis Provinciæ Præfectum. Parisiis. Apud Jacobum Dupuys, 1551." Dupuys had for his emblem and sign "The Samaritan Woman," that Scripture subject being chosen because it introduced the image of a well, and the idea of his own name. This is the edition cited in succeeding references.

¹ *De Subtilitate*, Lib. xviii. p. 299, for this account of the first conception of the work, compared with statements in *De Lib. Prop. Lib. ult. Op. Tom. i. p. 71.*

but also often reading it, and seeing it in dreams by night. He saw in dreams its title, the number of the books, and the order of their contents. He dreamt that it was printed, and that there were two or three copies in town—an admirable work, larger than his own, and by another author. When it really was first printed at Nuremberg he never dreamt of it again. The treatise on Subtilty was followed up in the same vein by another upon the Variety of Things¹. Dreams had stimulated him to the production of that treatise also. The object of both was the same, and the two together very perfectly fulfilled his purpose, which was to take a comprehensive and philosophical survey of nature—according, of course, to the philosophy of his own century; to point out, as well as he could, the subtle truths which underlie the wonderful variety of things which fill the universe; to describe the circle of the sciences, and (expressing each by those of its facts which were most difficult of comprehension) to apply his wit, or his acquired knowledge as a philosopher, to the elucidation of them. With these works Jerome took great pains; that on the Variety of Things cost him more trouble than anything he ever undertook. It was repeatedly rewritten and remodelled, and many parts of it were transferred into the books on Subtilty. The books

¹ “De Varietate Rerum, eorumque Usu.” It was published five or six years later.

on Subtilty were so exact in their method as to exclude very many topics for which there was room found in the other treatise, which is to be taken as the sequel or appendix to it¹.

These productions attained great popularity, and contain many isolated specimens of ingenuity, applications of knowledge to common life, as to the raising of sunken vessels, the cure of smoky chimneys, the manufacture of writing ink and such matters; for, as the reader may have perceived, Jerome's quick wit was ready to apply itself to any topic ranging between speculation on the Cosmos and the management of washerwomen. His generalisations upon nature do not, however, rise above the level of the knowledge current in his time among philosophers. He and his neighbours taught what they had learnt from Aristotle, Pliny, and Theophrastus; where they differed from such guides, it was not often to good purpose. The poor potter, Bernard Palissy, of whom the world then knew nothing, and who, at the crisis of his fate, was building his own furnace at Saintes with bleeding hands, while Cardan wrote upon subtilty at Pavia, Palissy knew more truth about those ways of nature that he had observed than had been perceived by Aristotle, or than was taught by all the learned of that century—I might almost add of the next. Cardan's fame as an author was

¹ De Libris Propriis. Lib. ult. Opera, Tom. i. p. 74.

at its height when his work on Subtilty appeared at Paris; whatever he wrote was sought eagerly; it was in the hands of all men, and was so much quoted and copied, that he says: "I do not know whether I was most read in my own works, or in the works of other people¹." A copy of it was obtained by Bernard Palissy², and another fell into the hands of Julius Cæsar Scaliger. All the world witnessed Scaliger's attack upon it, in a thick book, weak, scholastic, trivial, of which, and of the resulting controversy, we shall hereafter be compelled to speak. Cardan himself, probably, never heard of Palissy, or saw the few sentences written in nervous French, which not only pointed out the incorrectness of his theory concerning mountains and the structure of the globe, but for the first time promulgated, upon such subjects, true and philosophical opinions.

In the work on Subtilty, Cardan at the outset defines subtle things as those which are sensible by the senses, or intelligible by the intellect, but with difficulty comprehended³. Then he treats of matter which he supposed—as we suppose now—to be composed of ultimate parts, minute,

¹ "Cum primum in publicum prodire, statim in omnium manibus esse cœperunt: et tot eruditorum testimonio comprobari: ut nesciam an in propriis an in alienis libris nostra magis leguntur." *De Lib. Prop.* p. 79.

² See the Life of Bernard Palissy of Saintes, vol. ii. pp. 173, *et seq.*

³ "Est Subtilitas ratio quædam, qua sensibilia a sensibus intelligibilia ab intellectu difficile comprehenduntur."

hard and eternal, out of which things have been created according to their form and nature. In their creation the Divine Being has produced, he says, the best combination that was possible of an existing material, eternal like Himself¹. Having discussed matter and first principles, cold and heat, dryness and moisture, the book passes on to the description of a few mechanical contrivances—of a wonderful lamp, pumps, siphons, Jerome's contrivance for the raising of sunk vessels, levers, scales. He teaches that there are but three elements, air, earth, and water; fire he excludes, because nothing is produced out of it. He treats further of fire, of lightning, of artillery, shows how to know those cannons that will burst, as one burst at Pavia during the All-Saints' procession, and destroyed six men. He endeavours to explain why fire can be struck out of a stone, why a string will not burn when it is tied round an egg, why heat breeds putridity, and so forth. He treats of air, of the cause of plague, of tides, of the origin of rivers; they have, he says, many sources, but the chief is air converted into water. The true theory of springs, as of most other processes of nature, was unknown to him. Its first discoverer was Bernard Palissy.

Of the earth, in that part of Cardan's work to which

¹ Compare the statements in book i. with the dictum in book xi. "Divina igitur sapientia in unoquoque fecit optimum quod ex tali materiâ poterat excogitari."

Palissy directly alludes, we find it stated, that "the earth is entirely stable, round and in the middle of the world: these things are demonstrated by mathematics. For the whole earth is no more able to stir from its place than the heavens are able to stand still¹." And of mountains, he says, "their origin is threefold. Either the earth swells, being agitated by frequent movements, and gives birth to mountains as to pimples rising from a body, which is the case with a mountain called La Nova, near the lake Averno, in the Terra di Lavoro; or their soil is heaped up by the winds, which is often the case in Africa; or, what is most natural and common, they are the stones left after the material of the earth has been washed away by running water, for the water of a stream descends into the valley, and the stony mountain itself rises from the valley, whence it happens that all mountains are more or less composed of stones. Their height above the surrounding soil is because the fields are daily eaten down by the rains, and the earth itself decays; but stones, besides that they do not decay, also for the most part grow, as we shall show hereafter²." The notion that earth taken from stone leaves mountain, that a Salisbury Plain would be a Mount Salisbury, if all the soil were taken out of it, and only the

¹ De Subtil. Lib. ii. p. 60. "Terra toto stabilis est, rotunda atque medio mundi: hæc autem a mathematicis demonstrantur. Nec enim plus tota terra loco moveri potest, quam cælum quiescere."

² Ibid. p. 59.

stones left, was so far curious, but as it was the orthodox belief, it passed into Cardan's mind, with other science of the same kind, as learning that was not to be disturbed. He had no taste at all for revolutionary work, except in medicine. In other sciences he took all that was taught with a few quiet modifications, and that formed the body of his learning. No man of his time knew so much that had been taught about so many things. From the points at which his learning ended in each separate direction he endeavoured to go on. In mathematics he was left with his face turned in the right direction, and he made a great and real advance; in the natural sciences he was placed by his learning commonly with his face turned in the wrong direction, and he went on into Metoposcopy and other nonsense.

The philosopher having discussed the subject of mountains, proceeded to consider why the earth is higher than the sea. There were seven reasons then current, one of them being that the earth was lifted and held up by the stars. Of the heavens, and the stars, and light, the work next treated, giving a right reason for the twinkling of the fixed stars, inquiring into the composition of stars, the soul of the universe, comets, rainbows, parhelia; discussing burning glasses, mirrors in which future or distant objects are revealed, shadows; inquiring why it is that, when we travel, moon and stars seem to go with us. The

book upon Light is, on the whole, more than usually accurate in its philosophy. Jerome's father had, it may be remembered, studied the subject, and been the first editor of Archbishop Peckham's *Perspective*¹. There was a good deal of correct knowledge then afloat concerning optical laws, and by its aid Jerome was ready to correct some popular errors, such as the belief that trees emit sweet odour when the end of a rainbow rests upon them. He knew that rainbows belong to the eye, and have not out of the eye a substantial, separate existence.

The treatise next passes to substances compounded of the elements, to metallic substances, earths and gems, inquiring, among other things, why amber attracts straws and other light substances, of course without any idea of electricity. He attributes the phenomenon to the fatness and warmth inherent in the constitution of the amber. He then, in his sixth book, treats in detail of the seven metals, and in the seventh book of stones and gems, pointing out how to tell those that are false, and using some of the knowledge that he formerly obtained from his friend the jeweller, Guerini. He treats also of the properties of gems, and describes three remarkable agates in his own possession. One of them, which he had found to display great virtue in promoting sleep, had incorporated in its substance a profile nearly resembling that of the Emperor

¹ Vol. i. p. 4.

Galba¹. He gives a fac-simile thereof, which is here reproduced.



The eighth book is botanical, the ninth treats of the animals generated from putridity, and of their propagation; how from the putrid matter of oxen we get bees, from that of horses wasps, and hornets out of mules. In this book, treating of the power of warmth as a principle of life, Cardan quotes Joannes Leo, who related that in Egypt the executioner cuts criminals in half, and that the upper half being then placed upon a hearth, over which quicklime has been scattered, will understand and answer questions for a quarter of an hour. The next book treats of perfect animals, and in this is contained, under the head of sheep, the praise of English wool, not less renowned than was the Milesian in the days of Virgil. "Now, therefore," says Jerome, "is Britannia famous for her wool. No wonder, when there is no poisonous animal in the country, and it is infested now only by the fox, and by

¹ The figure was added in a subsequent edition, and recopied into the works. Tom. iii. p. 466.

the wolf formerly; but even the wolves now being exterminated, all the flocks wander in safety." Then he goes on to state how the sheep in England slake their thirst upon the dews of heaven, and are deprived of every other kind of drink, because the waters of the land are deadly to them¹. He adds that the moist grass of England is quite full of worms, and assigns that as the reason why the air is full of crows that feed upon them. There are no serpents on account of "the immense cold."

From other animals the philosopher rises in the next book to man and the creation of him. There are three kinds of men, he says—the divine, which neither deceive nor are deceived; the human, which deceive but are not deceived; and the belluine, which cannot deceive but are deceived. Men who deceive and are deceived belong to a compound sort; they are part human and part belluine. The same book treats of man's religion, of his form, shows how, if you would have black-eyed children, you must entrust them to a black-eyed nurse; treats of education, and the proportion between different parts of the human body. The nature and temper of man is discussed in the next book. Cardan inquires why chil-

¹ De Subtilitate. Lib. x. p. 192. "Ergo nunc Britannia inclyta vellere est. Nec mirum cum nullum animal venenatum mittat, imo nec infestum præter vulpem olim et lupum, nunc vero exterminatis etiam lupis, tutò pecus vagatur; rore cœli sitim sedant greges, ab omni alio potu arcentur, quod aquæ ibi ovibus sint exitiales," &c.

dren resemble parents, why the drinking of potable gold procures long life, touches upon the admiration of beauty among other things, and in the next book—upon the Senses—proceeds to inquire what beauty is, and for what reason we delight in it. The sense of hearing suggests a discussion upon hydraulic organs and upon music. The sense of smell suggests the question, why is it that men who smell well rarely are far-sighted and are more ingenious than other people? In this chapter is also explained why people who have sharp eyes are slow to fall in love, and by a just connexion with the main subject there is also room found for an inquiry why thorns grow with roses, and for instructions how to catch birds and fish, and how to keep flies from horses.

From the senses of man the theme rises to a consideration of his soul and intellect, to a survey of his wisdom and his passions and his faculties, including an artificial and a passive memory. Here we meet with a few shrewd definitions, as that Bashfulness consists of Hope and Fear;—Envy is a thin Hate;—Suspicion is a little Fear, just as Audacity is a vast Hope¹. It needs not to be said that through all former chapters of the work good sayings have been scattered, as for instance, that the shadow of princes is the cap of fools, a proverb taken, perhaps, from the verse: *“Verecundia ex spe constat et timore.”*—*“Invidia vero odium tenue est.”*—*“Suspicio vero timor est parvus, velut audacia spes maxima.”* De Subtil. p. 246.

nacular, and that it needs more courage and impudence to deny a falsehood attested by a great number of witnesses, than to sustain a truth against which so many witnesses declare that it is false,—a very nice but very just distinction.

The fifteenth book upon Subtily discusses miscellaneous curiosities. The sixteenth is upon Sciences, especially geometry and music, and includes an exposition of the signs of the weather. The next book is upon Arts and Mechanical Contrivances, in which book are explained a method of writing in cipher, a method of fortifying a town, and a method of telegraphing and of talking by the use of torches. It contains, also, scientific expositions upon pulleys, wheels, and screws. The next book is upon Marvels; one of them is rope-dancing. Here occurs the consideration why is it that the eye of a black dog held in a man's hand hinders all dogs in his neighbourhood from barking, and how useful such an eye must be to thieves. Here is a place also for the narration of dreams. The nineteenth book is upon Demons, and their truth; charms are discussed, and one for headache given, which the author has found useful. There is a special inquiry into the Telchinnes, subterranean demons, who vexed treasure-hunters. The next book treats of Angels and Intelligences,—giving their names. The twenty-first and last, of the Universe and the Divine Being, who is in-

voked thus by the philosopher in his concluding sentences: "Thou, therefore, Most High God, from whom all good things flow, by whose nod all things are moved, whose empire has no bounds, infinite clearness, who alone affordest the true light, complete in Thyself, known to Thyself only, whose wisdom exceeds all thought, one and incomparable, out of whom there is nothing, who hast led me as a worm of the earth under the shadow of knowledge, to whom I owe all truth that is here written: pardon in me the errors which my ambition and my rashness and my haste have bred, and by illuminating my mind out of Thine unwearied goodness, guide me to better things. And though Thou needest nothing, and I can add nothing to the voice of Heaven, and all heavenly powers, the sea and earth, and all the corners of the world¹, I pay to Thee incessant thanks for the innumerable benefits that I have received at Thy hands."

The work described in this brief summary was in its

¹ "Tu igitur altissime Deus, a quo omnia bona profluunt, cujus nutu cuncta moventur, cujus imperium nullis finitur limitibus, claritas infinita, qui solus lumen verum præbes, solus vere æternus, totus in teipso, tibi soli notus, cujus sapientia omnem excedit cogitationem, unus atque incomparabilis, extra quem nihil est, qui me velut terræ vermem in umbra scientiæ direxisti, cui quicquid veri hic scriptum est debeo: errores, ambitio mea, temeritasque ac celeritas pepererunt, ignosce mihi, mentemque meam illuminando, pro tuâ indefessâ liberalitate ad meliora dirige. Cum vero tu nullis indigeas, nec quicquam addere possim, quod cæli, cælorumque potestates, quod maria terraque faciunt, universæque ipsius mundi partes, gratias perpetuas pro innumeris erga me beneficiis ago."

time regarded as a monument of wisdom, and being very entertaining, was extremely popular. Jerome himself did not count it among the works upon which he relied most for immortality; it was of a kind, he said, to please the public, but there were other of his writings more likely to satisfy the wise¹. These Twenty-one Books upon Subtilty were dedicated by the prudent citizen to the governor of his province, Ferrante Gonzaga, whom he praises most for a late negotiation which he had conducted, and which had justified some hope of peace.

The hope was not fulfilled. In 1550, Jerome, as before said, stayed away from Pavia because the university was unable to pay his salary. In the succeeding year he again lectured there, but a cat of the most placid character² having been left at home one day, dragged out upon the tiles some of his written lectures (written after delivery, he taught extemporaneously³), and tore them upon the house-top. The book upon Fate, which lay more ready to her claws, she had not touched. Who can doubt what followed? At the end of the year, quite unexpectedly, his lectures ceased, and his professorship was not assumed again for eight whole years.

His reason for retirement⁴ was again the turmoil in the

¹ De Libris Propr. Lib. ult. Tom. i. p. 72.

² De Vitâ Propriâ, cap. xxxvii., for this story of the cat's conduct and its consequences.

³ Ibid. cap. xii.

⁴ De Libris Propriis. Lib. ult. Op. Tom. i. p. 81. "Gallo rege

district. The King of France was pressing with war; Italy, Switzerland, and Turkey were convulsed; and while all men were awaiting ruin, he abandoned his professorship, thinking it better so to do, and safer. It proved to be well that he did so, for Pavia was in the midst of perils; there were no salaries paid in the year after he left, and moreover, there died out of the senate two presidents—one of them the Cardinal Sfondrato—who had been friendly to Cardan, and who had been accustomed to watch over his interests.

Of the Cardinal Sfondrato, to whose friendship Jerome had been much indebted for the recognition that he obtained from the Milanese physicians, and who had assisted in securing for him the professorship at Pavia, Jerome has left a sketch in an essay on his horoscope¹. The substance of it is here stated. He had begun life as a private man, had been professor of civil law in Pavia at the age of thirty, and after a few years had been called to the senate by Francisco Sforza, Duke of Milan. He had married, and become the father of two eight-month boys, whose lives were preserved with difficulty. It was by care of one of them that Cardan earned his friendship. They did, after all, together with four girls, survive their father. (One of the boys became a pope.) When *urgente commota est Italia, Elvetii, Turcæ. Omnibus ergo ad interitum spectantibus deserui legendi munus, melius esse ratus, quod etiam tutius esset.*" The other considerations connected with the same subject form the continuation of the passage.

¹ Geniturarum Exemplar, p. 50.

Charles V. became Duke of Milan, Sfondrato had been made a member of the secret council. In the year 1541 his wife died, and he was appointed, as we have seen, governor of Sienna. There he remained eighteen months, and obtained from the townspeople a good-will that had not been earned by others in the same position. In the year 1544 he went to Rome and was ordained a bishop; directly afterwards he became archbishop and cardinal. When Pope Paul III. died at the end of the year 1549, he was almost elected his successor. He was then fifty-six years old, and he died in the summer following of a weary disease, that some, of course, attributed to poison. He was a big man, tall, frank-looking, fat and rubicund, genial, elegant, joyously disposed, not without wisdom and erudition. In business he was cautious, prudent, prompt and successful. He delighted in gambling, and that, too, for large sums. He was passionate and somewhat prejudiced. He believed in fate, and in the *Sortes Virgilianæ*, of which he testified that he had often found them true.

In addition to the motives that have been assigned, Cardan had other reasons for retiring from his post at Pavia. He considered that he had attained his end as a professor; he had recalled his mind thoroughly to the pursuit of medicine, had written a great body of professional matter, and had obtained fame as a physician. He had also completed the university edu-

cation of his eldest son, and of the young relative, Gaspar, who studied with him. Gaspar having obtained his degree, finally went to Rome and practised physic. Gian Battista had only to go through the requisite formalities which should obtain for him admission into the profession. Cardan, therefore, by retiring from a profitless and dangerous post, hoped to indulge himself with what seemed to be at that stage of his life the most desirable thing—literary leisure, and to increase and yet more firmly to establish his great fame by assiduity in writing.

With these hopes, Jerome, at the end of the year 1551, abandoned his professorship in Pavia and went to Milan, not intending to remain there. It is probable that he was coward enough to desire a quiet and safe place in which to enjoy the literary leisure upon which his heart was set, and as the King of France sent war out into other countries, there was chance that he had none at home. There might be peace for him in Paris, and, perhaps, prosperity. He may have desired at any rate to go to France and try the ground there. I do not know from his own telling that he was actuated by these motives. He himself says no more than that, after quitting Pavia, he had meant to go to France, even if he had no business to take him thither¹. Having that design, then, he went back to Milan.

¹ De Vitâ Propriâ, p. 18.

CHAPTER IV.

CARDAN'S JOURNEY TO PARIS.

By the end of November in the same year a letter¹ reached Cardan through the hands of merchants. It had been about two months upon the road, the messenger by whom it was despatched having been hindered in his progress through a country thoroughly confused with war. This epistle contained matters of importance, and came from a brother physician, who talked in a most edifying way the science of his time, and seems to have been a perfect master of the ponderous scholastic style. I have not space here, and no reader would have patience, for the whole of Dr. Cassanate's composition; shortened, however, by the omission of a few masses of surplus verbiage, it must now form a portion of this narrative. How great would be the consternation of an active literary man

¹ De Libris Propriis (1557). The letter itself is given in the same work, and extends there from page 159 to page 175.

or hard-working physician in our own day who should receive a business letter such as this!

"Health to you.

"Since it is important in all new conjunctions of events, most learned man, to understand how they arose, and by what recommendation friendship comes to us from strangers, I think it right to give the reason of this letter to you from me, a man unknown to you indeed, but by whom you have been diligently studied.

"To many the source of the most delightful friendship is a certain sympathy and a similitude of disposition. To others, that friendship seems to contribute not little to the pleasantness of life, which is induced by a similitude of studies. For nothing excites more desire than likeness to oneself, and there is no claimant more ready than nature. Nevertheless it happens easily that the web of friendship of this kind is broken. Especially when together with education, language, and commerce, customs also vary, similarity of study may then easily be changed into a cause of difference. I think with Cicero, that the best basis of friendship is a faith in character; because it is the property of virtue to conciliate to itself the minds of men, and to unite them in its service and in friendship with each other. For in her lies the fitness of things, in her lies their stability, in her is constancy, and when she goes abroad, and extends her light, and has seen and recognised the same light in another, she enters to it, and in turn receives into herself that which was in another, whence there arises between them love or friendship. Whence we see that there is nothing more to be loved than virtue, nothing that more attracts men into friendship.

So that on account of their virtue and probity we even love those whom we have not seen, and so great is virtue's force, that (what is more) we even love her in an enemy.

“Wherefore, by as much as we despise those men who are useless to themselves or others, in whom there is no work, no industry, no care,—so it is our common usage in life to extol to the skies with fame and good-will those who have excelled in benefiting their own race. We elevate and bring our highest praise to those in whom we think that we perceive excellent and rare virtues, those by whom life is evidently spent on honourable and great matters, and in doing service to the State, whose virtue and whose studies are fruitful to others, but to themselves laborious, or dangerous, or by them freely given. In which respect you have as much surpassed the multitude by your very great fame, and not less great genius and erudition, as you have bound to yourself students of many arts by your unwearied zeal in writing. So much even he well knows who has admired but the least of your many monuments and labours, for I estimate the lion by his claw.

“I, out of the so numerous and important writings, the result of immense labour, of which you have edited a catalogue in your book ‘*De Libris Propriis*,’ have seen only the Books on Wisdom and upon Subtilty, with those upon Consolation, which were published with the books on Wisdom. The last were given to me in the year 1549, when I practised medicine at Toulouse, by a legal friend, very studious of the humaner letters; but the books on Subtilty were given to me by the same friend in this year 1551, in Scotland, where I am now practising. These alone out of so many are in my possession; from the reading of which there has proceeded so great a desire for the reading of the rest, that if I did not

hope some day, and that soon, to enjoy them, the want of them would be felt far more seriously than it is. For while I think it worthy of the highest praise and glory to write books that are worth reading and useful to the human race, it is my utmost pleasure to enjoy the fruit of the vigils and the literary toils of others; so that when I regret having been without your works, and grieve at it and think it my hurt, I console myself with the expectation of hereafter reading them. For your copiousness in writing, your variety, your multifarious reading, your observation of things, the ornate gravity of your sentences, your pure and chaste method of narration, make it necessary that whoever comprehends the unfathomable depths of memory, the most practised industry and the extreme acuteness of judgment in your existing monuments, will praise you, honour you, and venerate you.

“But that which has delighted me most is, that in reading your fifth book upon Wisdom, I saw that you cited just experience, when, among other things, you wrote as follows:—
‘But what if the art itself yield not a livelihood, and there be no passage to another calling, a new invention has to be struck out (for the novelty of a thing always begets favour) that in some particular shall be of certain use. When we ourselves long laboured in this city against envy, and our income was not so much as our expenses (so much harder is the condition of a merit that is seen than of one that is unknown, and there is no prophet of honour in his own country), we made many attempts to discover new things in our art; for away from the art no step could be made. At length I thought out the cure of Phthisis, which they call Phthoe, despaired of for ages, and I healed many, who now survive. I discovered, also, the method of curing aqua intercutis,

healing many. But reason should lead to invention, and experiment is a master and a cause of work in others. In experimenting, if there be danger, it should be attempted gently, and by degrees.' Now, by these two discoveries of yours, you have bound men to you not less than you have enriched our science. For if it is not a light thing to adorn an art with illustrious and magnificent works, and to add to it, with the course of time, increments of knowledge to which no wit or patience of those living before had penetrated, how much more in the art which is above all, and which is destined for the safety of the whole human race, is it of immense utility to fetch out something abstruse and recondite, remote from the vulgar method of philosophising and from popular ideas. Not a few are deceived in believing that the art of healing, discovered by the labour of the ancients, has been brought to perfection, and can make no further progress. They would have all posterity marching, as it were, in one file, and stepping in the same track, from which it shall be nefarious to diverge (as they say) by a nail's breadth.

* * * *

So, as I said to M. Fernel, the famous physician of Paris, they err as much who contend that all things have been thoroughly investigated and comprehended by the ancients, as they who deny to them the first knowledge of things, and reject them as old-fashioned in their practice. But perhaps I am more prolix than is needful in a letter destined to another kind of business. I, to return to the matter in hand, have felt myself so addicted and bound to you by your erudition, virtue, and wisdom, in the use of which you do not cease with assiduity of study to make yourself of value to all students of letters, that for a long time I have desired nothing more than that there might be offered to me an occa-

sion of showing how grateful my mind is towards you. And this has happened, although later than I could have wished; but now that a happy opportunity has offered itself, permit me not lightly to felicitate yourself and me. Myself on account of my reverend lord archbishop and patron's expectation of and petition for health from your aid only, as the one *Æsculapius* able to assist, and therefore, on account of the mutual, and by me, much desired enjoyment of intercourse between us to which I can now look forward. You, however, I felicitate, because this affair, I hope, will be of no little use to you, and will bring you a great increase of praise, the love of which (when glory follows virtue) is innate in generous minds as a spur always to greater deeds. Wherefore I am far from thinking that this matter will be unwelcome to you, I believe rather that it will meet your best desires. For of things to be desired, as Cicero testifies in his second on Invention, there are three kinds."—[Here the writer again gets into deep water.] * * *

"These three, admirable man, you may possess altogether in the present case without trouble, and with the greatest pleasure. For through this there will be a celebration of your virtue and wisdom even at the uttermost parts of the earth; through this there will be no mean addition to your household means; through this you will acquire the friendship of good men, and rise into incredible esteem. By which considerations it is fair to suppose that you will be moved—especially as we all seek the useful and grasp at it—nor can we possibly do otherwise, as is observed in Cicero's Offices. For who is he who shuns what is useful, or who would not prefer diligently to pursue it, most particularly when it is joined with dignities and honour?

"But to what all this tends, now hear. The brother of

the most humane prince, the regent of the kingdom of Scotland, the most illustrious Archbishop of St. Andrew's, whose physician I have been for about four years, was vexed, at the age of about thirty, ten years ago, with a periodic asthma." [The medical account of the case I must abbreviate a little, but the old theory of periodic asthma is too curious to be omitted.] "The first accession of the disease was a distillation from the brains into the lungs, associated at that time with hoarseness, which, by the help of the physician then present, was for the time removed, but there was a bad temperature left in the brain; it was too cold and moist, so that an unnatural matter was collected in the head, which was retained there for a short time, because the brain could neither properly digest its own aliment (especially since it was nourished with pituitous blood), nor had it power to resolve the vapours brought into it from the parts below. Things being left in this state by a preceding attack, it happens that, whenever the whole body is filled with a matter which as a substance vapour or quality, invades the brain, there is a fresh accession of the complaint, that is to say, there is a flow of the same humour down into the lungs. This periodical distillation, the signs of which I will pass over, is best known by the fact that it happens from an obvious cause, suddenly, to the patient apparently in good health, except for the signs accompanying properly the fever and the actual distillation. And this accession agrees almost accurately with the conjunctions and oppositions of the moon. Medical aid having been slighted, or at least not assiduously sought (so does the strength of the disease seem able, in course of time, to destroy the strength of the body), there is now danger, especially as there is now a constant flow, and most at night. The lungs are thus not slightly weakened.

The matter flowing down into the lungs is serous, limpid, watery, pituitous, and sweet or insipid. If it were acrid or salt, the lungs would ulcerate, and the disease would become tabes, or what the Greeks called phthoe. Thin at first and in small quantity it is expelled by violent coughing. Stirred by the cough, broken and divided by the expired air, the matter flows back into the lungs, afterwards digested and somewhat thickened—half thick, as it were—it is expectorated copiously by stronger efforts of the chest with gentler coughing. Being again reduced to a small quantity, if it is thick and got rid of slowly it is expelled only by the most violent efforts, because the too tenacious humour adheres to the lungs and does not even reach the throat. The consequence is dyspnœa, or difficulty of breathing, with stertor. Afterwards, when the obstruction has been overcome by which the respiration is made unusually great and vehement, and frequent (which is the cause of increased heat), there is a hot and burning breath out of the mouth, which causes the air to be rarer than is proper for health, and insufficient even when the chest is very much dilated. The arterial pulse is soft, small at the beginning of the attack, frequent and irregular, showing the constriction and pain in the respiratory parts, and the increase of the body's heat, for the air drawn in, on account of the narrowness of the road left for it, is not enough to cool the heart and lungs." [This is the main theory; then are added a few medical signs, and the writer states that the archbishop is so much reduced as to desire for himself some strong help against so serious a disorder.]

"You have here the whole theory of the disease, which hitherto I have laboured to assuage, and hinder from passing into worse. What remedies, what labour and industry I

have used, you shall hereafter learn, if it please Heaven. For I have neither expected at any time his complete cure, nor do I think that the most effectual help will ever bring it about, partly because of the moistness of the air (which partakes somewhat of the saltiness of the sea) and the strength of the winds, partly also because of his distractions with incessant labours in state affairs, which hang wholly upon him, as it were upon a thread; he is so worried night and day, that in the midst of his vast responsibilities he can hardly breathe, still less pay that attention to the care of health which our good Hippocrates highly desired at the hands of sick men and others, as well as of physicians.

“Now, however, leaving the great tumult of his cares and undertakings, he is about to visit Paris—a city flourishing as the seat of studies of all kinds, and especially of medicine—entirely bent upon attending to his health. But since he has frequently been informed by me of your eminent virtue, your singular erudition and most abundant experience as a practising physician, the archbishop most eagerly desires your help as the most valid protection that he can obtain against his malady (which faith is seen to conduce not a little to recovery); so that he is persuaded that he will be healed by you as if by the hands of a favouring Apollo. Therefore he desires in this affair not only to receive your advice, but he is so eager to profit by your presence with him, that he would spare no cost that would attract you before some fixed day to Paris. Therefore contrive, I beseech you, that Lutetia (Paris), the nurse of so many great philosophers, may behold you at least once, that you may be surrounded and admired by so many scholars; that they may receive, cherish, and venerate with fresh honour a man whose writings have already had from them a worshipful reception. For whatever time you wish to occupy upon the journey,

whatever escort you would have, or charge you would be at, take the necessary money from the hands of him who will deliver this. If the season and your health permit, and you are willing, means shall not be wanting to enable you to travel post; and if there be need of it, you shall have the safe conduct of the princes on the road, and the public faith of each country pledged to you.

“This one thing, lastly, be assured of, that you deal here with a most humane and liberal prince, from whom you may fairly expect not less advantage to yourself than he is expecting, on the other hand, from you. He expects gain to his body; you will receive gain of fortune: due not to fortune but rather the just reward of your labour, and of your singular learning and virtue.

“But if the season, your home studies, household, press of time, business, or the tie of friends, or anything else, make it impossible for you to go so far as Paris, at least travel to Lyons, which is less distant from you, and a famous town. This we entreat of you to do out of your humanity; we wish it for honour’s sake, and for the sake of no mean good; for by so doing you will not only be serviceable to one most excellent prince, but rather put an entire state and kingdom under obligation to you. If, again (as we do not expect), you concede neither of our requests, then I beseech that you will send us, at full, your advice as to the opposing of the disease I have described (that is ready to pass over into Phthisis, or worse, which Heaven forbid), omitting nothing that you think may be done for its subjection, and take what you think proper as a fee. That all this will be done by you in good faith I do not doubt. * * *

“But now as I write the last words of this letter, there occur to me two passages published in your eighteenth book on Subtilty, which is concerning marvels. In one of them

you bear testimony to a remarkable means of causing men to become fat ; in the other, you assert that you have discovered a wonderful mode of relieving those who are without breath, or breathing painfully. We have succeeded in attaining neither of these ends, though either invention would be in no small degree convenient to our purpose. As for ocimum¹ and its qualities, Dioscorides, Galen, and Pliny, differ so much that I can in no way reconcile their statements.

“ But enough has been said.

“ Finally, the most illustrious lord archbishop has commanded me to fix the month of January as that in which, on some appointed day, you may be seen in Paris. I fear, indeed, that the winter may oppose some delay against your coming, or deprive you of the willingness to come. But need, according to the precept of Hippocrates, begets urgency. Farewell, most excellent man. May the Lord of all men long preserve you, and increase daily your genius as a writer, so that you may long aid the study of medicine, and all that is good in literature, in that way earning an immortal name.—Edinburgh, the 28th of September, 1551. WILLIAM CASSANATE, Physician.”

Cardan replied to this letter that he would go to Paris—that, indeed, precisely suited with his previous humour,—and he required two hundred crowns as travelling expenses for the journey thither, which were paid to him in Milan.

The lord archbishop, on behalf of whom this letter had been sent by his body physician, William Cassanate,

¹ Ocimum has not been identified with any modern herb. Pliny states that it grew best when sown with cursing and railing.

was John Hamilton, Archbishop of St. Andrew's,—called in Cardan's Latin *Amultho*;—Hamilton who was hung. Cassanate¹ was the son of a Spaniard, settled at Besançon in Burgundy. He was fourteen years younger than Jerome, having been born at six o'clock in the morning of the 5th of October, 1515,—one is exact in dates when there is a horoscope to draw upon for information. Concerning this Cassanate, who has left behind him nothing by which he is retained, however slightly, in the memory of scholars or physicians, it would, indeed, be difficult to give any particulars, if Cardan had not discussed his character in calculating his nativity². He was the only survivor of six brothers; a man very careful of his own interests, time-serving, and most happy in the atmosphere of courts. He could change opinions as the exigencies of the day required, and profit by political confusion. He had a decided taste for the admixture of court business, as a meddler or negotiator, with his professional cares, and in that way may have rendered himself, by the use of a little tact, very agreeable to the archbishop. He was fond of the external good things

¹ Cardan spells the name Casanate, but the usual spelling is adopted in the text. There have been several obscure scholars of this name.

² His is one of the twelve horoscopes which illustrated Cardan's commentaries on Ptolemy. It is included in a little book entitled "*Hier. Card. Medic. Mediol. Geniturarum Exemplar. Præterea et multa quæ ad Interrogationes et electiones pertinent superaddita. Et exemplum eclipsis quam consecuta est gravissima pestis. Lugduni. Apud Theobaldum Paganum*" (who has a Pagan or Saracen on horseback for his emblem), "1555."

of life ; delighted in elegant company, in gaiety, and pleasure; and spent much of the great wealth that he knew how to scrape together, in expensive entertainments. He had a wife and one daughter when Jerome knew him, but the stars were promising him a considerable family. Cassanate had left his father, who was still living at Besançon, to settle in Scotland—a land rarely accepted as a home by strangers from the south; and there he had been, when he wrote to Cardan, attached for four years to the household of Archbishop Hamilton. He was then thirty-six years old.

The archbishop, who was so distracted by incessant labours in state affairs “that he could scarcely find time to breathe,” since he is to become now a foremost person in this narrative, must be recalled in a few words to the memory. He was an actor in some of the most familiar scenes of our domestic history—the troubles that surrounded Mary Queen of Scots. Mary, who herself became one of Cardan’s patrons, was only nine years old when that famous physician set out to meet John Hamilton at Paris.

It will be remembered that Mary’s father, James V, having made no provision for the administration of his kingdom, left the office of regent open to be battled for after his death. The Roman Catholic party advocated the claim of Cardinal Beaton to that dignity; to him there was opposed the brother of our archbishop, James Hamilton, Earl of Arran, who was next heir to the

queen. James Hamilton was declared regent by the choice of Scotland. Mary was not many months old when Henry VIII. demanded her as the future wife of his son Edward, with a view to the extension of his own rule over the Scots. The new regent agreed, on behalf of Scotland, that the queen, when she became ten years old, should be sent to London, and that six persons of the first rank should at once go to the English court, and there reside as hostages. This happened in 1543. Cardinal Beatoun then seeing his opportunity, made the best of it, dilated on the regent's weakness, and stirred up a host of passions. The Scottish barons declared against the alliance with England, and the cardinal then seized the persons of the Queen Mary and her mother.

John Hamilton, at that time Abbot of Paisley, was natural brother to the regent, and had a great influence over his mind, which he began then very actively to exert. The abbot was a warm partisan of the interests of France, and a zealous defender of the established faith. He was a man of strong will and great energy, one whom it was not easy to overreach or intimidate; and, though taxed by his contemporaries with various irregularities in his private life, he displayed for a long time, in the fulfilment of his duties as a churchman, admirable temper and great prudence. It was not until about six years after Cardan's connexion with him ceased, that he acquired the temper of the religious persecutor. John Hamilton,

Abbot of Paisley, used then his influence over his weaker brother so effectually, that James, on the 25th of August, ratified the treaty with King Henry, and declared the cardinal an enemy to his country, and on the 3rd of September following, met the cardinal at Calender, and declared for the interests of France; he even went so far as to abjure the Church of the Reformers in the Franciscan church at Stirling.

Then followed changes of leaders, wars, peace, and the murder of Beatoun. After the death of Henry VIII. in 1547, the Abbot of Paisley became Archbishop of St. Andrew's. Scotland was soon afterwards invaded by the Earl of Somerset, protector of the young King Edward and of England. The Scots turned to France for help; and by the advice of Mary of Guise, the queen-mother, offered their little queen in marriage to the dauphin, and agreed also to send her to the French court for education. The offer was made by the nobles assembled at Stirling, and hastily confirmed in a camp-parliament. In June, 1548, the child-queen, six years old, was, in fact, carried to France by a fleet which had brought over to Scotland six thousand French soldiers. There she was living when Cardan visited Paris. There followed at home the decline of Somerset's power, and the general peace obtained by France from the Earl of Warwick in March of the year 1550.

The queen-mother, Mary of Guise, was ambitious, and aspired to the regency. James Hamilton, alone, was no match for her arts. He depended for the retaining of his position, and for advice in all emergencies, upon the strong mind of his brother, the archbishop. In addition to his own ecclesiastical affairs, John Hamilton had virtually to manage all that was difficult in the affairs of Scotland, and to bring them into accordance with the right sustainment of the interests of his own family. The archbishop's health, however, failed from month to month, and at the end of the year 1551 the attacks of asthma, which recurred every eight days, and lasted on each occasion twenty-four hours, had brought him nearly to the point of death. The regent then, missing the support of his strong arm, promised to give up to the queen-mother his difficult position. So stood the affairs of the Hamiltons when the archbishop's medical adviser recommended that, as they had already sought advice from the physicians in attendance on the Emperor Charles V. and on the King of France, recourse should be had in the next place to Cardan. When Cassanate wrote to Milan, James Hamilton had not committed himself to a promise that he would resign the regency. Before the year was at an end, however, he had made that promise, and it was for the archbishop, if he could regain strength, to prevent him from fulfilling it. In such a crisis it was unsafe for John

Hamilton to trust his brother out of reach, and it became, therefore, impossible for him to go to France.

Jerome, having replied to Cassanate's letter, heard again from Scotland on the 12th of February; and receiving then the money asked for to defray his travelling expenses, he set out on the 23rd of the same month for Lyons, where it was understood that his journey possibly might end¹. There it was possible that he might meet the archbishop; but if not, he was, at any rate, there to be met by the archbishop's physician, with a fresh remittance, in discharge of the cost of his journey on to Paris. He travelled by way of Domo d'Ossolo and the Simplon Pass, through Sion and Geneva, then from the Lake of Geneva straight to Lyons, reaching that town after a journey of not quite three weeks². There he found neither archbishop nor archbishop's physician, and remained thirty-eight days without any further tidings of his patient. The illustrious Cardan, in Lyons, was not, however, suffered to be idle; patients flocked to him, he prescribed for many noblemen, and earned much

¹ See his own horoscope. *Geniturarum Exemplar*, p. 129.

² *De Vitâ Propriâ*, pp. 19, 20, and for the next facts. He says there, that he remained in Lyons forty-six days; but a correction of this and of some other slight inaccuracies of date has been made by reference to the *Geniturarum Exemplar* (written just after his return), where, in discussing his own horoscope under the head of Journeys, he is particular about all dates, and calculates the stars by which his incomings and outgoings were ruled.

money. Louis Birague, commander of the King's infantry, whose good-will once, when he was at Milan, had been sought for Jerome by young Brissac, as before narrated, happened to be then in Lyons, and received the great physician as a friend, offering him a stipend of a thousand crowns a year, on the part of Marshal Brissac, if he would consent to be attached to him, as his physician. Brissac's friends desired the presence of the skilled physician; Brissac thought only¹ of the aid he might have from his ingenuity in mathematics and mechanics. That offer, however, was declined. Here, too, we must name Guillaume Choul², a nobleman of Lyons, king's counsellor and judge in Dauphiné, with whom Jerome established an enduring friendship. M. Choul was one of the most painstaking antiquaries of his time, and wrote on medals, castrametation, baths, and other Greek and Roman matters—works which have had the honour of translation into Spanish.

At length Cassanate came, the bearer of a letter from the archbishop himself, by which his physician was introduced formally, and in which his exact errand was stated. The letter—written, of course, like all such documents, in Latin—spoke of “serious, urgent, and inevitable business” that detained the archbishop at home, and its main object was to persuade Jerome, if possible, to travel on to

¹ De Vitâ Propriâ, cap. xxxii.

² Ibid. cap. xv.

Scotland. Cassanate was the bearer of three hundred crowns, payable to him for his travelling expenses between Lyons and Edinburgh, if he could be prevailed upon so far to extend his journey. Thus Hamilton wrote¹: an oscillation in his style, between the familiar first person singular and the formal first person plural, has been left unaltered. The tone of the letter shows that the archbishop was a man of business:

“Your letter, written on the 23rd of November, was received three days ago by our physician, and read through by me. Inasmuch as you have therein, most learned Cardanus, equalled our opinion of your singularly recondite erudition and perfect virtue, you have also increased our expectation that the restoration of our health will proceed chiefly and certainly from you. Urged to that opinion already by the persuasions of our physician, I had thought that I must have recourse to you as to the *Æsculapius* most propitious and suitable for the quelling of my disease; not that I distrusted the help I received from the learned doctors, but that from your aid I promised to myself more. But though I myself, some months ago—as you have been very abundantly informed in the letter of our physician—had determined for that special reason to go to Paris, nevertheless, hindered by most serious and urgent and inevitable business, I was compelled to desist from my intention.

“Wherefore, because I wish to adopt the next best course, I have conceived the desire to send to you the man who is

¹ This letter is given by Cardan in his second book *De Libris Propriis* (ed. 1557).

the bearer of these, for the four last years my physician, one who is most studious of you, and who begot in us the opinion of you before expressed, that he, armed and equipped with your most prudent and (we expect, if God dispense it so) most healthful counsel, for which he has always thirsted, may inquire out the remedies against the disease, bring and administer them. He has written to you fully enough, at my command, upon my temperament, the origin and progress of the malady, and has set before you almost the whole manner of it, in my opinion, as plainly as if it were before your eyes. But since even this did not seem to himself sufficient, in order that we may do whatever belongs to the affair in hand with greater ease, correctness, and success, we have sent to you the said studious and faithful minister to our health, from whose discourse and from your mutual conversation, I hope that you will become so plainly acquainted with the whole theory of my disease, that afterwards you can fairly desire nothing to complete your absolute acquaintance with it.

“ Nevertheless, because, as the poet says—

*Nec retinent patulæ commissa fidelius ‘ aures,
Quam quæ sunt oculis subjecta,’*

and what are seen are known more certainly than what are heard, and discoveries (as you most prudently say) succeed marvellously in the hands of their inventors, this one thing I seek out of your singular humanity and the good-will you have conceived towards us, that inasmuch as you were willing, according to the terms of your letter, to come as far as Paris, you will consent to come for once to Scotland also, upon any conditions that you please. The bearer of this will give you a safe conduct, and provide, also, for cost and attendance ;

and will give, if there be any arrangement entered into between him and you, the guarantee of P. Francisco Resta, or any other banker in Milan.

"This only, finally, I will promise you, best and most learned Cardanus, with a true heart, that you shall incur no waste of time and labour, for there shall accrue to you no moderate increase of means, and the greatest harvest of fame and esteem. I would have you, therefore, to persuade yourself that I both wish and am able to do more things than I promise. Which, without doubt, if you will take upon yourself so much trouble for our sake, you shall in very deed and by experience discover.

"Farewell, most learned Cardanus, and visit our Lares to find us not so much of Scythians as you perhaps suppose.—Edinburgh, Feb. 4, 1552.

"Upon all matters not mentioned in this letter, confide in William Cassanate, who delivers it."

A journey into frosty Scotland had by no means formed part of Jerome's plan, and Cassanate used various persuasions, and held out many attractions, before the philosopher could be prevailed upon to go so far from home. He believed that the archbishop had enticed him into France, meaning that he should go to Edinburgh, but well knowing that the proposal of a journey into Scotland would have been refused, if sent to him at Milan¹. Nei-

¹ Geniturarum Exemplar, p. 129. "Advocabant me in Gallias, credo consulto veriti quod et futurum erat, me nullis conditionibus in Scotiam, si eo me advocassent, deduci posse." The text shows, however, that the account given by historians of Hamilton's affairs fits so

ther Cassanate, he says, nor the money that he offered, nor the hope of other profit, nor the wish to see new countries, persuaded him; but the fear lest, when he got back among his own people, some scandal, with a look of truth about it, might be invented to explain his quick return; lest he might be disgraced and bespattered by the gossip of his tattle-loving city. Therefore, having received the additional three hundred crowns, Jerome consented to go on, and on the 18th of April the two physicians set out, using the river Loire¹ for their highway as far as possible, upon the road to Paris. Just before quitting Lyons, on the last day of preparation for departure, advice was sought from the great Italian by a certain schoolmaster, afflicted with a serious disease. He brought money in his hand; but Cardan declined to undertake the case at such a time. The man said then that he could show the way to a boy able to see demons in a pitcher. By that offer Jerome was tempted; he went therefore, but found nothing worthy of a grave attention. In the mean time, he and his new patient had been talking of the mirror of Orontius, which kindles fire, and which the

well into Cardan's narrative as perfectly to explain the real emergency by which the archbishop was detained in Scotland. The next citation is from the same authority (p. 130).

¹ De Vitâ Propriâ, p. 19; and for the succeeding anecdote, the same authority compared with the fuller account given in the last book De Libris Propriis.

scholar says, "I knew to have been one of the discoveries of Archimedes; he was led thus to show me a printed copy of Archimedes, as translated by Antonius Gogava into Latin. Then, as I looked over the volume, I saw that there were bound into it Ptolemy's Books on Astrological Judgments. I asked whether they were to be bought; he urged me to accept them, and I accepted them at length, for it was a saint's day, upon which it is not lawful to buy." Taking this book with him, then, to shorten his journey, he wrote commentaries upon it on the way to Paris, down the river Loire. These commentaries, forming a considerable work, were committed to a French printer, who gave Jerome occasion to declare that, of all printers, the French were the most dilatory. They were first printed, with the addition of twelve illustrative horoscopes, in 1555.

At Paris there was the heartiest reception ready for the Milanese physician. The only surly man among the *savants* seems to have been the Orontius just mentioned, in whom Jerome felt interest, and whom he says that he saw, but who refused to visit him¹. M. Fine, who trans-

¹ De Vitâ Propriâ. "Ubi Orontium videre contigit, sed ille ad nos venire recusavit." A very brief account of his visit to the church of St. Dionysius, and of his dinner with the king's physicians, follows in the same place. The general narrative of these incidents given in the text is amplified by reference to other mention of them in *De Libris Propriis* (ed. 1557), p. 138, and especially in the *Geniturarum Exemplar*.

lated his name into Greek, and was Oronce for literary purposes, certainly was a famous man, but he would have been more honoured than honouring in an exchange of courtesies with Jerome, for his fame had but an unsubstantial basis. When Cardan said that the glass of Orontius was taken from Archimedes, he touched upon a weak point in M. Fine. He was not an original man, though he did, indeed—labouring under a mistake—give out that he had squared the circle. He obtained much of his knowledge from the works of a heretical contemporary, Sebastian Munster. M. Fine, who was seven years older than Jerome, had gone very early to Paris from his native town of Briançon, in the Dauphiné, where he distinguished himself by mathematical tastes and a mechanical turn, making with his own hands several instruments that had not been seen before. He published works, at first translations, and taught mathematics, at first privately, then publicly in the College de Gervais. When Francis I. established a new college in Paris, Orontius was made royal professor of mathematics, and attracted many students. He wrote a Description of the World and a Description of France, and assumed a prominent position as a practical geographer. He was therefore sought and patronised by foreign princes who were in want of maps or charts. Sebastian Munster, a little man, robust, laborious, and wonderfully simple-minded, lay at the root of the reputa-

tion of Orontius. Munster died of plague at Basle while Cardan was sailing down the Loire to Paris. He had been teaching Hebrew and heretical theology in that town for twenty-three years—in fact, ever since he gave up the Cordelier's robe and became a Lutheran. He wrote an admirable *Cosmography*, besides an *Organum Uranicum*, and a great deal of Hebrew. A scholar of Basle delivered a Hebrew oration over him when he was dead, but in the world he had not due honour. Orontius was far more widely celebrated. Concerning Orontius, it should be added, that he had once been imprisoned for discovering bad omens for France among the stars, but that, with that exception, fortune favoured him abundantly. He did not rightly use her gifts, for, though he had worked for princes and been largely paid, he died in debt—three years after Cardan's visit to Paris—and left a large family of children destitute.

Orontius, then, in whom Jerome as a mechanist and mathematician felt much interest, declined to become acquainted with the new guest of the learned in the town. Everywhere else, however, he was made to feel the greatness of his reputation. At court he was flattered by the desire of the king himself that he should kiss hands and accept court service in France, with a considerable pension; but he was unwilling to offend the emperor, whom he considered as his master, and who was at war with

France. He was called to attend the half-brother of Mary Queen of Scots (probably the young Duke de Longueville), and in the hope of service that he might render an immense stipend was offered—but in too vague a way—if he would become physician to her majesty. Afterwards, when his treatment had been found successful (the duke, however, if he was the patient, died about that time), the offers were repeated, but they were not determinate enough, and were, at any rate, refused¹. Considering how beggarly a country Scotland was in his opinion, Jerome took some pains to show how it was that the queen could afford to make a lavish offer, and attributed her means to wealth accruing from the royal guardianship of estates, when the succession fell on minors.

It was not until they reached Paris that Jerome discussed terms with Cassanate ; but there was an agreement then drawn up, which was afterwards destroyed as being an instrument not necessary between a physician and an honourable patient. Cardan was to have his travelling

¹ “Oblatas majores conditiones renui, unam Regis Gallorum, metui Cæsaria nos offendere, cum inter eos principes desævirent bella: aliam paulo post cum rediissem . . . : aliam ante hanc locupletiore sed nimis dissitam, cum Scotorum Reginâ, cujus levirum curaveram; et tamen spe sanitatis adipiscendæ. Post, cum sanassem, experimento et gratiâ inductum” De Vitâ Prop. cap. iv. The reference of the Queen of Scotland’s wealth to the abuses of wardship, occurs in cap. xxxii. of the same book.

expenses paid, and to receive ten gold crowns a day while in personal attendance upon the archbishop.

Hamilton's case having already been laid before the physicians of the King of France, Cassanate took the stranger to consult with them. Brasavolus he did not see. Brasavolus was a famous physician of Ferrara settled at the French court, and named Musa by the suggestion of King Francis. He is said to have been so devoted to his calling, that one day, when word was brought to him in the lecture-room that his house was on fire, he would not quit his class till he had finished his prelection. He then was absent from the gathering, but Jerome and Cassanate dined with Pharnelius and Sylvius, —that is to say, with Jean Fernel and Jacques de la Boë.

Jacques de la Boë was the Parisian professor of anatomy, and Jerome describes him as a merry little old man of seventy, quite bald, quite little, and full of jokes. He was the professor of the old school, who worshipped Galen, taught anatomy from small fragments of dog, and omitted from his teaching whatever was at all difficult even in the authority he worshipped. Sylvius, who was furiously endeavouring to hunt down his old pupil Vesalius, as an impious confuter of the word of Galen, followed him to Madrid with his hate, and sought to bribe the Madrid state physicians with the promise of a baby's skeleton if they would join the chase. Persecution of Vesalius had

become the topmost thought of his old age, and he could not, of course, dine with a strange doctor without mounting on his hobby. "He was breathing animosity against Vesalius," says Jerome, "arising from I know not what cause. He professed, indeed, that it was for wrongs done to Galen; and he demanded a most iniquitous thing, that I too should become his enemy."

Fernel¹, the other member of the little dinner-party, was a man entirely different in character. He was professor of medicine in the university, and the first court physician, in spite of his undisguised contempt for court society. His age Jerome considered to be fifty-five, but it

¹ The information about these learned men whose fame has departed, I have generally got from Zedler's Universal Lexicon. I have referred sometimes for it to the excellent Encyclopædia of Ersch and Grüber, and have had some aid, but not much, from Jöcher's Gelehrten Lexicon. I have also, of course, been helped by Tiraboschi when the question has been of an obscure Italian author. The *Biographie Universelle* I have been unable to trust, and owe to it, I believe, nothing but a part of the sketch of Orontius. English biographical dictionaries, or the biographical part of English encyclopædias, I have found much reason to avoid. The Germans are the best encyclopædists. They study a man before they write even a few paragraphs about him. They are both accurate and full. The French are full, but much too careless about accuracy. The English are both inaccurate and meagre, wherever they have to put down any results of out-of-the-way reading. When, therefore, I have in this work had to rely, not on my own reading but on that of other men, I have preferred looking for information to the Germans. Even them, however, I have not trusted without comparing two or three accounts of the same thing by independent writers, and if I found on any point any discrepancy, have sought to ascertain what was the truth by reference to the original authorities.

was, in fact, not more than forty-six; he was a pale, lean man, who loved his study and his wife. He had come to Paris, when he was past the heyday of his youth, from Clermont in Picardy, to study rhetoric and philosophy. After two years he was offered a professorship of logic, but he desired to learn and not to teach. He gave up all the pleasures of the capital, and withdrew himself entirely from mere complimentary society to study Cicero, Pliny, and Aristotle, and to perfect himself in mathematics. He was then teaching philosophy in the College of St. Barbe. By the time he had attained great skill in mathematics he had so much weakened his health that it became necessary for him to retire into the country. With restored health he returned to town, received fresh lessons in oratory, and resumed the study of elegant literature and of mathematics. He was by that time married, and his wife, objecting to the cost incurred for instruments by reason of his mathematical pursuits, he gave them up, good husband as he was, and undertook to earn money instead of spending it. He devoted himself then to medicine, and in that also, by the power and the fineness of his mind, he attained rapidly to eminence. Patients flocked to him, and in his leisure hours he explained Hippocrates and Galen. He was obliged soon, by the great increase of his private practice, to abandon public teaching, but as he found leisure even then to write on Physiology, the students forced him by

affectionate compulsion to expound that to them. A tract of his own on Venesection he was also perforce lecturing about, when he was interrupted by the command of Henry II, then dauphin, that he would attend on a great lady, whom he favoured, or who favoured him, in a case of considerable urgency. His effective aid secured to Fernel the dauphin's gratitude. The prince made him his chief physician, and the courtiers flocked about him, but he contemned a court life, and turned back to study : he refused to live at court. Nevertheless, the grateful prince did not withdraw from him the appointment or its salary. Again, in Paris, he was hindered from his studies and his duties as a teacher by the press of patients, for he never winnowed out the poor from among those to whom he gave time and attention. No poor sick man asked help of him and failed to get it. When, at last, Henry II. became king, Fernel was compelled, in spite of himself, to officiate as the first court physician. Among other incidents of his life, one of the most notable was the acquisition of the friendship of Catherine of Medicis, who believed that his skill had saved her from a state of childlessness, and on the birth of her first child gave him ten thousand dollars for his fee, at the same time ordering a like fee to be paid to him at the birth of every succeeding son or daughter. Fernel's pure student character will not be held in the less tender recollection

for the fact, that while still far from the extreme term of life, six years after his dinner with Cardan, he died of sorrow for the loss of the wife whom he had loved better than his studies. He pined after her death, and in a few months was buried by her side.

The two French physicians, De la Boë and Fernel, with Cassanate and Cardan, formed the party assembled to discuss the case of the archbishop. Jerome took great pains not to commit himself. When the archbishop's disease was talked about, he listened and said nothing. He was asked at once, before dinner, for his opinion, but declined to speak before the king's physicians, and objected, also, that he was quite unacquainted with the patient. The matter was talked over also during dinner ; but Cardan, when in courtesy he might have spoken, and it was, perhaps, slightly discourteous to maintain reserve, still abstained from committing himself formally to an opinion.

Jerome saw sights also at Paris. To one of them he was introduced by another of the king's physicians, Nicolas Legrand, who has left little more than his name behind him, and who is barbarously Latinised, I do not know whether by his own hand or by that of his friend, into Magnienus¹. He was an excellent man, says Cardan, studious

¹ Eloy's *Dictionnaire Historique de la Médecine*, not mentioned in the preceding note, has helped me now and then, and coming to the

of mathematics, and a bustling man. He came to see me daily. He, being physician to the monks of St. Dionysius, took us to their noble church, distant about three miles from Paris, and famed throughout the whole world. There, when we had seen the sepulchres of kings, statues, and other marble ornaments, I studied carefully the horn of an unicorn that was suspended in the church¹. He handled it and measured it, and he describes it carefully. More than once he refers to it. In another passage he records that, among the king's treasures in the church of St. Dionysius, there was nothing that appeared to him so precious as that rare and perfect horn.

Aimar de Ranconet was another of the eminent men in Paris by whom Cardan was particularly welcomed, and with him Jerome had correspondence after his departure. He was a lawyer by profession, but remarkably well versed in polite literature, philosophy, and mathematics. He was President of the Fourth Chamber of Accounts in the Parliament of Paris, and a student with a system. After a light supper, he would sleep for a few hours, and rising in the night at about the time when the monks' prayer bell was sounding,

rescue here when other help all failed, told me the real name of this gentleman. The barbarous Latinising of the names of persons and places, as of Hamilton into Amultho, Fernel into Pharnelius, the Simplon into Mons Sempronius, Duomo d'Ossolo into Dondosola, when any obscure person or place is the subject of it, makes a riddle.

¹ De Varietate Rerum (ed. Bas. 1557), p. 672.

put on a studying dress, not unlike a monastic robe, and go to work. So he studied for four hours, profiting by the silence of the night, and a stomach loaded, he said, with no greater excess of humidity than could be spat away out of his mouth. Then he returned to bed and worked again after the second waking. A few scholarly and liberal words spoken in parliament not very long after Cardan's departure caused Ranconet to be shut up in the Bastile on a foul and absurd charge : there he died. His daughter, it is said, died on a dunghill, his son was hung, and his wife struck by lightning.

Of all the men that he saw in Paris, President Ranconet¹ was the one who won most on Cardan's affections. He admired the immense store of his books, but he dwells most on the acuteness and the liberality of his character; he would despise none for poverty, condemn none for rude speech, but judged them wisely and humanely by their dispositions. "Then, said I to myself," Jerome observes, "here is a rare bird, who looks into a thing perfectly, and is deceived by no false show of right." Having it in his mind to illustrate his lately written commentary upon Ptolemy with a dozen horoscopes of eminent men, he proposed to do homage to Ranconet, by placing him and lauding him among the number. Ranconet begged urgently that his horoscope might not be printed, but

¹ Geniturarum Exemplar, p. 42, for the following facts.

Jerome says that he refused him his request, because he thought it unjust that the opportunity should be passed over of celebrating the name of a man whose equal he had not known in Italy, and for whose friendship alone it had been worth while to visit France. The horoscope was published therefore. It prophesied to him difficulty in all affairs ; assigned to him a wife and children of illustrious character, some of whom would die by violence. The melancholy fate of Ranconet fast followed the publication of these prophecies, and Cardan seems afterwards to have wished that he had complied with his friend's entreaty, for he writes sadly when reviewing his past life : " I injured those whom I proposed to praise, among them the president at Paris, the most learned Aimar Ranconet¹.

Leaving good friends behind, the travellers proceeded on their journey. Cardan carried away with him no pleasant thoughts of Paris as a town. Its general construction had reminded him of Milan, but the streets he had found always full of dirt, emitting stench, and the air unwholesome, the population being at the same time dense. Perhaps, he suggests, it is because of the dirt (*lutum*) that the town has been called *Lutetia*, though, he admits, there may be other derivations².

¹ De Vitâ Propriâ, p. 61.

² De Varietate Rerum (ed. Bas. 1557), p. 667. In the same chapter of that work—"On Cities"—he characterises Rouen and Rome.

Again a river was the most convenient road, and the two physicians travelled down the Seine to Rouen, which town Cardan admired so much, that at the end of all his travels there was none of which he spoke with like enthusiasm. Out of Rome, the Queen of Cities, he knew no town so well built, so wholesome, and so handsome. Of this journey through France into Scotland, Cardan relates that it was not without peril, because there was the most urgent danger then from war and piracy. For a serious war was at that time raging between the emperor and the King of France; all things were being destroyed with fire and sword; infants, women were being slain. "My journey through France was made without the knowledge of the emperor, even without any guarantee of public faith; yet so far was I from suffering any harm, that I was received in the best spirit by the nobles. So much was thought due to learning and good name by the French nobility; and truly it is splendid, liberal, generous, and worthy of all praise, for in my utmost need and fear of surrounding enemies, I was protected by it from the soldiers of the emperor. Marvellous chance, in truth; the enemy protects an alien lest he perish miserably in the hands of his own people¹."

¹ Geniturarum Exemplar, p. 131. The same authority covers the next fact, but the date of Cardan's arrival is said to be the 3rd of July. That is irreconcilable with the context, and falsifies the whole chronology of the subsequent journey, as given by Cardan in three or four

For such protection, the governor of the coast provinces, when Cardan and his suite came to Boulogne, caused them to be attended by an escort of fourteen horse and twenty foot soldiers to Calais. From that point they took ship for England, and reached London on the 3rd of June.

separate works. By assuming July to have been misprinted for June, and allowing to the travellers a three days' rest in London, the accounts given are all made straight. Misprints abound in books of the sixteenth century, and they unluckily always abound most among names and dates.

CHAPTER V.

CARDAN IN EDINBURGH.

AFTER a rest in London of about three days, Cardan and his companions were conducted northward by Cassanate. The philosopher, journeying then in summer weather through the provinces of England, had an opportunity of acquiring a more accurate notion of this remote land than he before possessed. He did not, as he thought he should, see our sheep watered upon morning dew, nor did he find our sky very much darkened with crows¹; what he did see, however, and think worth remembering concerning Britain, it will be more proper to relate when we approach the close of his experience among us. From London to Edinburgh was a journey of twenty-three days², and on the 29th of June the Milanese physician greeted personally his Scotch patient.

Cardan remained with the archbishop until nearly the

¹ *Ante*, vol. ii. p. 66.

² *Geniturarum Exemplar*, p. 131.

middle of September. He at first allowed Cassanate to act in obedience to the advice taken at Paris, and gave diligent trial to the remedial course suggested at the consultation held over the dinner-table with Fernel and De la Boë¹. From this course no deviation was made during forty days, although his study of the case soon led him to form a view of it extremely different from that on which its first treatment was founded. Cassanate had placed at the base of the disease a cold brain; Jerome traced all evil to a hot one, and differed—with much courtesy—from his friends in other essential respects.

At the end of forty days John Hamilton became impatient, and by that time also Jerome was becoming much troubled by the five Italians who had accompanied him on his journey. One of them caused great scandal by his conduct in the town: he was a greedy, envious, lawless man; another, named Paolo Paladino, being very anxious to get back to Milan, urged his chief to take at once some active steps. The archbishop, who during all this time wasted in body, had become extremely restless and dissatisfied. Cardan then, at last, felt that it was proper to explain to the reverend lord his own professional position, to point out the fact that he himself dissented from the course of treatment hitherto pursued by Cassa-

¹ *Consilia Medica*. Opera, Tom. ix. p. 124; and for the succeeding facts, *De Vitâ Propriâ*, p. 193.

nate under the advice of the Parisians, and to suggest what he took to be the true theory of the disorder, and the proper way of trying for its cure. The consequence of this explanation was, of course, that the archbishop (an irascible man) was indignant at the body physician, and the body physician was indignant at Cardan. Cassanate, too, feared Jerome as a tale-teller, and the archbishop reproached him for the time he had lost before coming to a right understanding, being not the less annoyed at such delay when the new system of cure was found to give relief.

The whole opinion of Cardan upon his case was written out for the archbishop at great length, as a help to those doctors who might afterwards attend upon him. It is included in a volume of professional opinions, carefully drawn up after the manner of the time, whereof Jerome kept copies, and which were subsequently given to the world. A few notes from this document will not only be found amusing, but will suggest, I think, a very clear notion of the state of medical science in the sixteenth century, and of the kind of practice in which the philosopher, whose life we are here tracing, was engaged¹.

In the first place it should be stated, that in conversa-

¹ The following are notes from the fifty-second opinion in the *Consilia Medica*, which occupies twenty-four double-columned folio pages in the ninth volume of Cardan's works, pp. 124—148.

tions with Cassanate, on the way to Edinburgh, Cardan had learnt, in addition to the facts mentioned by him in his letter, one or two particulars. These were, that the archbishop's periodical attacks did not agree always, but only generally, with the changes of the moon; that sometimes, when he took care of himself, he might get through fifteen or twenty days without them. That the duration of each attack seldom exceeded twenty-four hours, but that sometimes it remained upon him twice as long. That his grace slept well, but that, on account of the urgency of his affairs, he never took the quantity of sleep requisite to free himself from crudities, especially since he was a great eater and drinker. That he was irascible enough, had a skin that exhaled freely, a chest of fair size, and rather a thin neck.

Upon the case, after he had personally studied it, Cardan's opinion resembles a long clinical lecture. It is a very acutely reasoned study of asthma, based upon principles laid down by Galen. Wonderfully absurd seems now its medical philosophy, but in the year 2154 what will be said even of our physic? Let us be modest in our treatment of the physic of Cardan. He did not believe with Cassanate that the matter finally expectorated had remained in his grace's brain as it collected there during the intervals between the attacks. If so, he thought that the operations of the intellect must be impeded, and that the

lord archbishop would not have, as he had, the red complexion of a healthy man; moreover, the matter so collecting and long standing in the head would turn corrupt¹. He believed that the thin fluid discharged was partly serous humour, partly condensed vapour, which descended from the brain into the lungs, not through the cavity of the windpipe,—for if so, it would be coughed out during its downward passage,—but through its coats, as water soaks through linen. This thin humour and vapour he supposed to be originally drawn into the brain by the increased rarity in the substance of that organ, caused by undue heat. Heat makes all things rare; and rarefaction in one part of the body, to express the idea roughly, produces suction from another. The thick expectorated matter was formed, Cardan thought, from the food².

These notes, though they do not contain the whole of Cardan's diagnosis, are enough to indicate the kind of reasoning he used. He reasoned in the manner of the faculty, but he excelled other physicians of his time in shrewdness; and although perfectly obedient to authority, he used a skilled obedience, and was very willing to receive instruction from experience that he acquired. He

¹ Cons. Med. p. 128.

² A century later medical science was but little more advanced. This is the kind of reasoning that Molière burlesqued. The comments of Cassanate and Cardan on Hamilton's case illustrate perfectly Sganarelle's theory of Lucinde's muteness in the *Médecin Malgré Lui*. Act ii. sc. 6.

watched his cases very closely; and since, as we have before seen, he knew the harm that may be done by medicine, and had freed himself from many dangerous absurdities of practice, since he also dreaded misuse of the lancet, and relates candidly how in his early days he lost patients by bleeding them¹, there can be no doubt that he was in his day, what he was believed to be, one of the safest advisers to whom a sick man could apply for help.

Applying theory to practice, the basis of the archbishop's cure, in as far as diet was concerned, Cardan said must depend on the use of a food as much as possible cold-natured and humid. The cold-natured food would resist the attraction of the brain, for it is the nature chiefly of warm things to exhale and to ascend. Humidity, he said, would obstruct the soaking down of matter from the brain through the coats of the windpipe, so compelling it to descend by the main channel, whence it could be coughed out during its downward passage.

It was his opinion that the chief object of the cure by medicine should be to attack the root of the disease, namely, the unhealthy temperature of the brain. With that view the head should be purged, and before that was done, there should, of course, come purgation of the body. Purgation of the head, he explained, was to be effected

¹ De Vitâ Propriâ, cap. xxxiii.

through the palate, the nose, and the sutures of the skull, especially the coronal suture.

Applications to the palate he did not much like, as approaching too near to the seat of the disease.

An admirable prescription which he would recommend for the procuring of a good discharge by the nose was the following:—Take of goat's or cow's milk and of water, of each half a pint, mix and dissolve in them two grains of elaterium ; let this be drawn through the nostrils when the patient has an empty stomach.

As a valuable application over the coronal suture, which itself had cured an asthma of seven years' standing, the physician recommended an ointment to be applied over the shaven crown composed of Greek pitch and ship's tar, white mustard, euphorbium, and honey of anathardus, which might be sharpened, if requisite, by the addition of blister fly. This cerate, he said, sometimes fetches out two pints of water in the four-and-twenty hours, and sometimes only three or four ounces. It was no easy nightcap to suggest to an archbishop. Another remedy that he would recommend, was water from the baths of Lucca, freely drank for eight days, and on the eighth day dropped upon the head for half an hour, over the coronal suture.

¹ Elaterium is a sediment from pulp yielded by a plant called the Squirting Cucumber. It surpasses all drugs in its power of producing watery discharge from the mucous membranes. Two grains of elaterium, as prepared carefully in these days, would be a fearful overdose.

He advised also the use of the shower-bath, as he was himself in the habit of employing it, upon the hint of Celsus. In a well warmed bedroom, first wash the head over with hot water, containing a few ashes, then let a pail full of water, quite cold from the well, be dashed upon it suddenly—the beginner can rise gradually from the pitcher to the pail—then, after a brief pause, begin to rub the head with cool, dry cloths, and go on rubbing until there remains not a trace of moisture. Remain in the warm chamber for two hours before going out into the air. By this habit, says Cardan, the brain is kept to a natural temperature, and its substance rendered firm and dense.

As applications useful—but less useful—he suggests also the dropping, from a height, of certain warm medicated waters over the coronal suture.

Next to the correction of the brain, the most important care of the physician, in a case like that of the archbishop, must be to prevent the generation in the body of the peccant matter. With this view, it was advised that pains should be taken to promote good digestion, and to give food that would not pass into thin humour and vapour. Vapoury winds and moist air would be injurious; his grace should walk under the shade in tranquil weather, and be careful never to go out in rain or night-air. He should make use of a perfume-ball, because perfumes are drying; but among perfumes used by him he should not

include roses, for by the scent of roses some brains are made warmer. The reverend lord should not sleep upon feathers, but upon unspun silk¹, and be particular upon that point. The heating of the spine and vena cava on a feather bed would cause matter straightway to ascend into the head. If one silk mattress proved too hard a couch, several might be placed upon each other. The patient, too, should lie never on his back, but on his face or side; by lying on the face, it was to be remembered that he might obtain relief, from a loss, during the night, of water by the mouth. The pillow should be of dry straw, finely chopped, and if that seemed to his grace too hard, it might be stuffed with well dried sea-weed; by no means with feather.

In matters of hygiène, whatever may be said of Cardan's theory, his practice was, on the whole, extremely sensible. His just hatred of feather beds, and his vigorous use of the shower-bath, may have done much to lengthen out the later years of his own life, in spite of all the ineradicable evils of his constitution.

The great physician further advised that the archbishop's pillow-case should be of linen, not of leather, and should be sprinkled at night with a drying perfume, made to the prescription which he gave. His grace was not to go to bed immediately after eating, but to wait at

¹ "Stupa serici." Cons. Med. p. 134.

least an hour and a half. Having retired, he was to sleep with his hand upon his stomach; for, added Jerome, whose words I now quote, "that helps much to good digestion; let the sleep be for from seven hours to ten, and let the reverend lord believe that there is nothing better than a stretch of sleep; let him, therefore, take time from his business and give it to his bed; or, if that be impossible, let him subtract it from his studies: for that should be the chief care of his life, without which happy life is quite impossible¹."

Upon rising, if his body chanced to be irregular in action, it was advised that his grace should take a compound of conserve of peaches and sugar of violets, waiting afterwards five hours for breakfast, and then breakfasting lightly. He was to avoid purgatives, since they hurt all people who have any tendency towards consumption, and by disordering the stomach, injure the digestive power. Instead of them, if necessary, he was directed to drink from two to four pints of new ass's milk in the morning, at one dose, or in several doses, but the whole quantity taken never was to be divided into draughts with intervals of more than an hour between them. That,

¹ Cons. Med. p. 135, where the reverend prelate is also admonished "de venere, ubi contingat necessitas debet uti ea inter duos somnos, scilicet post mediam noctem, et melius est exercere eam ter in sex diebus, pro exemplo ita ut singulis duobus diebus semel, quam bis in unâ die."

said Cardan, would serve his purpose, nourish his body and his lungs, allay the excess of heat, be grateful to the palate, and help also to avert consumption. When taking this, the patient should not at the same time eat much, especially should eat nothing very corruptible, as fish or fruit, should use very gentle exercise, and keep his mind as quiet as he could. The ass, whose milk he was to use, should be well fed, and provided with mild herbs, such as mallow, beet, and the blossoms of roses. She should eat corn and barley, have foaled recently, and it might be better if the foal were not a male. Ass and foal should live in freedom, and run daily together in the meadows.

His grace, having performed his first morning duties, ought next to comb his head with an ivory comb, by which the brain is comforted, rub well his extremities, anoint his spine and chest with oil of sweet almonds, and, being fully dressed, walk for a short time in some pleasant spot, not sunny.

He should avoid all immoderate excess and repletion, taking care also not to be immoderate in abstinence. In discussing whether breakfast or supper should be the chief meal, Cardan, having first decided that in every man's case an established custom ought not to be interfered with, proceeded to give a long series of curious, minute directions upon food and cookery. He prescribed many articles of diet as particularly proper to be used by the

archbishop, and added his advice upon the preparation of such things as would tend especially to make those fat who eat or drink them. Chief on this list is tortoise or turtle soup (what say the aldermen of London?); tortoises were to be preferred, the largest being the best. The whole animal, except the shell, was to be stewed down with water till he was as nearly as possible dissolved, and the flesh being eaten, and the juice being drank, no other food or drink being used, for about twenty days, great fatness would follow.

Another excellent thing, of the efficacy of which Cardan had personal experience, was the water distilled from the blood of a young full-grown pig and coltsfoot leaves. Two ounces a day of this distilled water, taken with a little sugar for about fifteen days, would fatten a man rapidly, and he found able sometimes to bring back a hectic person from the gates of death.

He advised also distilled snails; but when there were so many pleasant things that might be used, he wondered who would employ frogs as they had been employed by some in Italy, though he confessed that even they might find a place in the kitchens of the Britons, cut off as that people is from the whole world. Having said so much, he begged pardon for jesting, and proceeded to name more provocatives of fatness. Among others, he gave the receipt for a capital thing, with which, at the outset of his career, he

had dieted and cured the Prior Gaddi, who was afflicted with a skin disease. This was a mixture of thick barley-water with chicken-broth, flavoured with wine and a little cinnamon or ginger. It is easily digested, fattens, and dilates the chest¹.

Cardan sought also to moderate the emotions of his patient's mind. He suggested methods of shutting him up, when in-doors, from the air of which he was afraid. He advised strongly the use of the bath. He added a great number of medical prescriptions, to be used habitually or on various emergencies, closing the list with the recommendation of an issue under each knee, to be established only as a last resource, if other remedies should fail. Finally, he added to his own elaborate advice a selection of prescriptions suited to the case, culled from the chief authorities in medicine, Greek, Roman, and Arabian.

The strictness of Cardan's regimen, if not the efficacy of his medicine, the strong check that he put upon the archbishop's appetites and passions, the despotic limitation of his hours of business, the lengthened period of rest, the wholesome bed, the weekly shower-bath, the daily exercise, strict fast enjoined during the whole period of an attack, and other such reforms in the archbishop's mode of life, soon told upon his health. It improved very decidedly, and his lordship, who was recovering his flesh,

¹ Cons. Med. p. 141.

was by no means content to part with his good friend and helper. Jerome remained in Edinburgh thirty-five days after the commencing of his own treatment of John Hamilton; but his fame as a practitioner was near its topmost height, and his skill was not bestowed on the archbishop only. Scottish nobles flocked to him, and paid so liberally for his advice, that, as he tells us, he made out of two of his prescriptions only, nineteen gold crowns in one day¹. His chief patient, also, was a princely paymaster. Then there came to Cardan letters from Ranconet to tell of nobles whom his fame had brought to Paris. Many were coming in from the provinces that they might have the good fortune to be in the capital and obtain advice from the illustrious physician as he passed through to Milan. There were forty nobles who arrived in Paris on that errand, and there was a prince there offering a thousand gold crowns as his consultation fee, rather than lose the chance of profiting by Cardan's counsel. So Jerome was told afterwards; but all the tempting report sent to him by Ranconet was sent in vain. He had despatched Gaspar Cardan to France, and Gaspar, who had himself fallen among thieves, sent an ill report of the condition of the country. It was overrun by bands of robbers, bred out

¹ De Libris Propriis (1557), p. 181, for what follows, except the specification of the presents, for which see the last book De Libris Opera, Tom i. p. 137.

of the war, by one of which, a foreign traveller in France, known to have much money with him, might fairly expect to be attacked. Jerome determined, therefore, not to seek the wealth awaiting him in Paris, but to travel home through the Low Countries.

There had come to him also an invitation to the court of London. The young King Edward VI, weakened by measles and small-pox, laboured under an affection of the lungs which baffled his physicians. It was for his reputed skill in treating such diseases that Cardan had been at great cost brought to Edinburgh, where he had confirmed his reputation. John Hamilton seemed to have been raised from a death-bed. It was most desirable, therefore, that the Italian physician should be persuaded to go home through London and see the king.

Jerome returned more suddenly than the archbishop desired. It was painful to him to be absent from his children¹. By the first leaves that fell he was reminded that he should not like to face the rigours of a Scottish winter. Cassanate plagued him with his jealousy. The conduct of his one lawless follower also distressed him. Early in

¹ Some of the following considerations are recorded in the *Geniturarum Exemplar*, p. 106. For the day of leaving Edinburgh, see the same book, p. 131. It tallies with the statement, several times made, that he remained there 75 days; once he wrote, or it was printed, 68. If he had not reached London till the 3rd of July, all this part of the story would be wrong. The correction of July into June, giving three days for a rest in town, 23, as we are told, for the journey to Edinburgh, and 75 for the stay there, brings us to the 12th of September very exactly.

September, therefore, he begged for permission to depart. The archbishop—who had lent some of his renewed strength already to his brother, and got from him a retraction of his promise to resign the regency—the archbishop said that he was relieved, not cured, and lamented that his help should fail just when he had begun to feel its value. Cardan's stay, he reminded him, was short, in proportion to the great length of the journey he had undertaken. Nor was it then a safe time for departure; war was everywhere. Finally, the archbishop pleaded, that if his physician would wait with him six months more,—until April,—he should be detained no longer. Gold had no power of temptation. “The love of my sons,” Jerome says, “urged me.” With difficulty, therefore, the consent of the archbishop was obtained, and on the 12th of September, Cardan and his followers quitted Edinburgh to retrace their way to London.

On the night before his departure, Jerome supped with his reverend patron, and received many gifts from the archbishop and his friends. His grace paid him for his visit eighteen hundred gold crowns, of which fourteen hundred went to Cardan himself, the rest to his attendants. This payment was much in excess of the stipulated ten gold crowns a day. There was presented to Cardan, also, a gold chain worth a hundred and twenty-five crowns; and, among other gifts, was the welcome one of an ambling horse, upon which he could set out comfortably for

his ride through England. His attendants also received gifts.

In return for all this liberality, the physician, at his departure, left in the archbishop's hands a document distinct from the long written opinion already mentioned ; it was a careful and elaborate paper of directions for his lordship's private use. This has been published among Cardan's works¹. It gave careful and minute directions for the patient's management of himself, laid down a regimen, in which changes of season and other accidents were not left out of sight, and was meant as a substitute for his own presence in Edinburgh. No contingency could arise that had not been foreseen and provided for in one or other of the documents. The directions left with the archbishop tallied, of course, with the contents of the professional opinion to which reference has already been made ; they omitted scientific details, and gave practical results in the form of precise directions. It will be enough to show how Jerome in this paper planned out the archbishop's day, taking an average day, and omitting reference to the contingencies of state of health, season, and weather.

He was to begin every eighth day with the shower-bath already described. When he came out of his chamber in the morning, prepared after the manner recom-

¹ It is inserted also among the *Consilia Medica*. Opera, Tom ix. pp. 225, *et seq.*

mended in the other document, he was to proceed to his quiet and shady promenade with a couple of tears of mastic between his teeth, chewing them to promote a beneficial flow of water from the mouth.

At nine o'clock he was to breakfast ; he was to eat first the liver of a fowl, with two or three grains of ginger ; after that, take some bread soaked in gravy, and squeezed free from excess of moisture ; then about two ounces of white wine. Next, he might proceed to eat more at his discretion chicken roasted or stewed, and he might drink wine four or five times, but he ought not to drink in all more than ten ounces. After breakfast he was to rest and amuse himself.

The four hours after twelve o'clock were recommended as his lordship's hours of business, during which, however, he was to write no letters with his own hand, and was to avoid as much as possible all trouble.

At four o'clock he was to go out for an hour's ride on horseback. Having returned, he was to sit, also to recline now and then upon his bed, while he gave audience to those who desired speech with him. He was by no means to be out of doors at twilight.

Having left a space of nine or ten hours between the two meals, towards seven o'clock his lordship was to sup. His supper should be like his breakfast, only lighter, and should be commenced by the taking of a spoonful of pure

honey. It would be well if he would sup often on bread and goat's milk. There was a cardinal in Milan advanced in years who derived much benefit from two goats that he kept. Ass's milk, however, would do as well, or even better. At eight or half-past eight his lordship was advised to go to bed. The nature of the bed he was to use has been described already. In it he was to secure to himself ten hours of continued sleep.

For the better assurance of punctuality in the carrying out of the system thus laid down, Jerome suggested to his grace the usefulness of a good clock. He therefore recommended him to get such a thing; it was but respectable; "for," he said, "every Italian prince has many, and good ones¹."

All the advice left by Cardan, Archbishop Hamilton resolved to follow, and promised that at the end of two years—when the new system should have had a full and perfect trial—he would send a report of its results to Milan.

¹ *Consilia Medica. Opera, Tom. ix. p. 228.*

CHAPTER VI.

CARDAN IN LONDON.

SUMMONED to the king on his return to London¹, Jerome continued to grow rich.

His visit to King Edward VI. is mentioned in most histories of England. In Bishop Burnet's History of the Reformation, it is recorded thus under the year 1552:—"This summer Cardan, the great philosopher of that age, passed through England. He was brought from Italy on the account of Hamilton, Archbishop of St. Andrew's, who was then desperately sick of a dropsy. Cardan cured him of his disease: but being a man much conversant both in Astrology and Magic, as himself professed, he told the archbishop, that though he had at present saved his life, yet he could not change his fate; for he was to die on a gallows. In his going through England, he waited on King Edward, where he was so entertained by him, and observed his extraordinary parts and virtues so narrowly, that on many occasions he writ afterwards of him, with

¹ Geniturarum Exemplar, p. 133. "Londinum in Angliâ reversus, vocatus ad regem, dona accepi."

great astonishment, as being the most wonderful person he had ever seen¹."

It was not until October that Cardan had audience of the king, and he had then, as we have seen, not cured the archbishop of a dropsy, but had taught him how to fortify himself against the attacks of asthma. The statement that Jerome had prophesied to Hamilton his death upon the gallows, is perhaps founded on a popular tradition. It is incorrect. He calculated his nativity²; and inasmuch as he was born at ten in the morning, on the 3rd of February, 1512, found that he would attain his felicity through much anxiety and peril (as any man could see that he was doing when the prophesy was made), and that if he lived over the year 1554, he would be in great danger from passion of the heart³, or poison, in the year 1560. He was taken in the capture of Dunbarton Castle, condemned in a summary way, and hung four days afterwards at Sterling, in 1571, being the first bishop in Scotland who died by the hands of an executioner. Of that certainly the stars told nothing to Cardan. He was perfectly in earnest as an astrologer, and perfectly sincere.

¹ Burnet, vol. ii. p. 208 (ed. 1681). In his appendix of documents, as many readers will remember, he quotes in illustration a passage from Cardan's *Horoscope of Edward*.

² *Geniturarum Exemplar*, p. 26.

³ Or shall we translate "*Passio Cordis*—suffering by the cord," to make good the fame of the astrologer.

What he saw on earth he found in the heavens, deceiving himself with a surprising ingenuity; but astrology could tell him no truth that was hidden from his neighbours. One of his luckiest predictions, of which he makes special boast, was his discovery by the stars in the year 1548, that in 1549 and the three following years he should acquire great wealth. "Whence it will come, or can come," he said then, "I do not know¹." Of that prophecy, the events of the year 1552 were a fulfilment; and he adds, after the fact, that if in 1548 he had read Ptolemy's Judgments, he should then have discovered that the wealth was to come through a journey. The impression made upon Cardan by the young king was, indeed, very great. "It would have been better, I think, for this boy not to have been born," he says, "or that being born and educated, that he had survived. For he had graces. Quite as a boy, he was skilled in many languages; Latin, his native English, French; and he was not unversed, I hear, in Greek, Italian, Spanish, and perhaps, yet others. He was not ignorant of dialectics, or of natural philosophy, or music. In his humanity he was a picture of our mortal state; his gravity was that of kingly majesty, his disposition worthy of so great a prince. The boy of so much wit and so much promise was by a

¹ Geniturarum Exemplar, p. 91.

great miracle being educated to a comprehension of the sum of human things. I do not here adorn the truth with rhetoric, but speak below the truth¹. * * And there was the mark in his face of death that was to come too soon. Otherwise he was comely, because of his age and of his parents, who had both been handsome²."

Cardan, most probably, was introduced at court by the king's tutor, Sir John Cheke; for it is Cheke with whom he lodged, and whom he seems to have regarded as the most familiar of his English friends. He calculated also Cheke's nativity, and published the result. He was born at seventeen minutes past five in the afternoon on the 16th of June, 1514³. That being set down, the reader probably has learnt more of the date of Sir John Cheke's birth than he knows of his own. I need scarcely recal the fact, that Cheke early became a Protestant, and was professor of Greek at Cambridge. There he taught a new pronunciation that was forbidden by the chancellor, Gardiner, Bishop of Winchester, and so begot a controversy. In 1544, John Cheke was entrusted with the education of Prince Edward. By the prince, when he became king, the learned man was knighted, and endowed with lands. He had been made chief gentleman of the king's privy chamber in 1550, and it was in the October of the suc-

¹ *Geniturarum Exemplar*, p. 5.

² *Ibid.* p. 13.

³ *Ibid.* p. 37.

ceeding year that he was knighted. He assisted afterwards at two solemn theological disputations, and took part in political affairs. In May, 1552, when Cardan was on his way from Paris, Sir John Cheke was ill of a complaint which Jerome pronounced to have been peripneumonia. On the 25th of August of the same year, while Cardan was in Edinburgh, Sir John was made chamberlain of the Exchequer for life. He was holding that new dignity when, in October, Cardan tarried for some days in London, and had for his principal friends John Cheke (with whom he lodged) and Claude Laval, the French ambassador¹. In Edinburgh, too, it should have been said, that the representative of France, the Duc du Cell², had been his friend.

Cheke, who was thirteen years younger than Cardan, was then aged thirty-eight, and already in high repute as one of the most learned men in England. Jerome deduced from the stars the fact that if he could avoid public calamities he would live to the age of sixty-one. He did not avoid public calamities, but escaped, as we know, the Tower and the scaffold by abjuring his religion, to die vexed and remorseful at the age of forty-three. His body, says Cardan, was graceful, with a yellow freckled and thin skin, hair moderately long, and decent eyes of a

¹ De Vitâ Propriâ, cap. xv.

² Whom he calls Usellæ Princeps. De V. P. cap. iv.

grey colour. He was tall, hairy, ruddy enough from exposure to the sun, handsome but unequally proportioned, weak in the arms. He was, said Jerome, of a dry temperament, with active qualities. He would, therefore, soon grow bald, and sooner grey. He would die of a lingering disease, with cold humour and pain in the lower extremities, there being also deflux from the brain. He would be a man admirably knowing how to fit himself to time and place. Considering his country, he would be shrewd and ingenious. He would be always busy, grave, liberal, wise, humane, the glory of the English people.

Cardan while in London lodged with Sir John Cheke, and received from him the utmost respect and attention. Yet he repressed, as he says, all pride in himself, and desired not to obtain homage for his own wit, but to do homage to the genius of his friend; for in so doing, he adds, there is a true happiness¹.

It was on the 2nd of April, six months before Jerome visited the king, that Edward had been attacked by the measles and small-pox. They left him with his health weaker than ever. The Italian was not required to interfere with his majesty as a physician in any systematic way. The chief desire among the nobles evidently was

¹ Geniturarum Exemplar, p. 41.

to get, by help of one who was renowned as an astrologer, some information of the future course of politics, to have Edward's nativity calculated, and if possible to find out how long he would live. The courtiers, says Jerome, worried him, and some wished to use him as a tool¹. He was placed in the midst of the English court life such as it was at that time, and he was greatly shocked by what he saw.

But the young king commanded his unstinted admiration and good-will. It may be that before having audience of his majesty, Cardan prepared himself by cutting the small band under his tongue. It has been said that he had a stutter in his speech, and he tells us that three or four times, even in his adult life, he attempted to diminish it by cutting at the band that seemed to tie his tongue². It is very possible that he desired to speak his best before the King of England.

Edward, as described by Cardan, was "of a stature somewhat below the middle height, pale-faced, with grey eyes, a grave aspect, decorous, and handsome. He was rather of a bad habit of body than a sufferer from fixed diseases. He had therefore a somewhat projecting shoulder blade; but such defects do not amount to deformity,

¹ *Geniturarum Exemplar*, p. 19.

² *Ibid.* p. 82.

even when contracted from birth. Affections of his that were not habitual were to be called diseases, as a blindness and a deafness troubling him at times¹."

But, says the philosopher, after having pointed out various conjunctions of the stars, and pronounced among other things that the monarch would have trouble from quadrupeds, "he was a marvellous boy. I was told that he had already mastered seven languages. In his own language, French, and Latin, he was perfect. He was not ignorant of dialectics, and in all things teachable. When I had speech with him he was fifteen years old, and he asked me (speaking Latin with as much polish and promptitude as I could use myself):

"What is there in those rare books of yours on the Variety of Things?" For I was obtaining leave to dedicate them to him.

Then I: "In the first chapter I show the cause of comets, long sought for in vain."

"What is it?" says he.

"The concourse," I say, "of the light of the planets."

But the king: "How is it, since the motions of those stars are different, that it is not dissipated, or does not move in accordance with their motion?"

But I: "It does so move, only much faster than they,

¹ Geniturarum Exemplar, p. 15.

on account of the difference of aspect, as the sun shining through a crystal makes a rainbow on a wall. A very slight movement of the crystal makes a great change in the rainbow's place."

But the king: "And how can that be done when there is no *subjectum*, for to the rainbow the *subjectum* is the wall."

Then I: "It occurs as in the milky way, and by the reflection of lights. When many candles are lighted near one another they produce between themselves a certain lucid and white medium. Therefore, *ex ungue leonem*, as they say¹."

Having given this very candid illustration of the quickness of the king's intelligence, Cardan goes on immediately in a strain of genuine and hearty admiration. "This boy filled with the highest expectation every good and learned man, on account of his ingenuity and suavity of manners. * * * * When a royal gravity was called for, you would think it was an old man you saw, but he was bland and companionable as became his years. He played upon the lyre, took concern for public affairs, was liberal of mind, and in these respects emulated his father, who, while he studied to be too good, managed to seem bad. But the son was free from all suspicion of

¹ Geniturarum Exemplar, p. 17.

crime, his disposition was completely trained to philosophic studies."

Urged to calculate the horoscope of this boy, Cardan provided a sufficiently long life for him, though he declared¹, what seemed certain enough, that his vital powers would be always low. "At the age of twenty-three years, nine months, and twenty-two days, languor of mind and body would afflict him. At the age of thirty-four years, five months, and twenty days, he would suffer from skin disease and a slight fever. After the age of fifty-five years, three months, and seventeen days, various diseases would fall to his lot. As long as he lived he would be constant, rigid, severe, continent, intelligent, a guardian of the right, patient in labour, a rememberer of wrongs and benefits; he would be terrible, and have desires and vices growing from desire, and he would suffer under impotence. He would be most wise, and for that reason the admired of nations; most prudent, magnanimous, fortunate, and, as it were, another Solomon."

The king's death followed so soon after these predictions, that Cardan made it his business to re-consider them, and in his book, after a recitation of his false conclusions, he proceeded to give a dissertation headed "What I thought afterwards upon the subject." One

¹ *Geniturarum Exemplar*, p. 19.

could desire no better evidence than there is here of Jérôme's good faith and sincerity as an astrologer.

Of course his faith in the supposed science was not shaken. He entered into details for the purpose of showing that it was unsafe to pronounce upon the term of life in weak nativities, unless all processes, and ingresses, and external movements that from month to month and year to year affect the ruling planets had been carefully inquired into. If, he said, in the prognostic which he gave to the king's friends he had not made a distinct reservation on this account, they would have been fairly entitled to complain of him. But to make such a calculation would have cost him, he said, not less than a hundred hours.

He did not wish to give any opinion at all. He was compelled to write: the courtiers worried him, and strove to implicate him in their plots and jealousies. He felt the danger of predicting—if he should by chance have to predict—King Edward's death. He remembered having read of two men who predicted death to princes. One, Ascleterion to Domitian; instant death to himself was the reward of his true prophecy; the other, a priest to the Duke Galeazio Sforza; he also predicted truly, and being cast into prison, was, in the most cruel manner, starved out of the world, after he had prolonged his life in it for a few days by a wretched expedient. Jerome, had he foreseen it, would, he said, have

been urged by his own natural sincerity, and by his love for the king, to predict the fate then imminent, he should have told all that he knew; and he thought, therefore, that he owed to his ignorance a most fortunate escape. He thought it also in the same way a providential thing that he had not agreed to stop in Scotland until April, for he should then not have reached London till the king was in his last disease, and so should have fallen upon evil.

The king, after Cardan's departure, kept too jovial a Christmas, and in the first days of the succeeding February there appeared the fatal cough, that never left him till his death in the succeeding July. It was in April that those matches were agreed upon which formed part of Northumberland's designs, and it was on the 11th of June following that the Lady Jane Grey plot became manifest. The king was induced to disinherit in favour of that unhappy victim, not only his sister Mary, on account of her religion, but also his sister Elizabeth, against whose creed no fault could be objected. The part played by Northumberland, as the first mover in these schemes and the most powerful among the nobles, was no worthy one, though there is much room for differences of opinion as to the extent of his criminality and the exact aim of his policy. Of course there is no just reason for supposing, as Cardan and many others did, that King Edward was poisoned. Cardan imputed too much evil to the duke;

but the following passage is not uninstrusive as showing the opinion formed by that philosopher of English politics, after a week or two of Court experience in London. He chronicles impressions formed during the autumn that preceded the king's death. The passage also, in the final sentence, illustrates very completely the candour with which Jerome spoke always the truth about himself. He is speaking of his false prediction¹:—"I could indeed, after the manner of some astrologers, affect to have known what was about to happen, and to have been silent through fear, an easy thing in so conspicuous a case, but I was so far even from thinking of such an event, that I was far enough surely from foreseeing it. I did, indeed, foresee it, but in another way, when I perceived that everything lay in the power of one man,—the boy, the fortresses, the exchequer, the parliament, the fleet. Children whom he could not rule he made rulers; and the power was with him whose father the king's father had beheaded, while he who had lost also two uncles by the mother's side successively condemned and executed, was misguiding everything, being urged, not more by hate than fear, to plot the king's destruction. And when all were silent through dread (for he condemned judicially as many as he chose), and he had conciliated to himself most of the nobles by distributing Church property among them, so

¹ Geniturarum Exemplar, p. 23.

that all things might be done according to one man's decision, and at the command of him who was most hostile to the king, I, proving a better prophet through my mother wit than through my knowledge of this science of astrology, at once departed, for I saw the omens of a great calamity and was alarmed."

The failure of the astrologer could scarcely have been owned more frankly. The method of accounting for the failure was in no respect evasive. According to the science of astrology, as taught by Ptolemy and by Cardan, it never is enough, for perfect accuracy, to predict a whole life from a single horoscope. The nativity of a man's wife, for example, and the nativities of each one of his children, together with many other aspects and conjunctions, have the most direct influence in modifying and sometimes completely altering his fortunes. As one person's life upon earth influences the life of another, so one person's stars influence the stars of another, and the calculations necessary for an accurate prediction thus become extremely complex, and may well cost the labourer a hundred hours of work. A good astrologer, says Jerome, ought to be another Argus.

In that book on the Variety of Things, which Edward's death prevented his design of dedicating to him, Cardan spoke again of the young king, who had won so largely upon his esteem: "If Edward VI., that boy of wondrous

hope, had survived, he would have contributed not a little to the establishment of the whole kingdom. For, as Plato says, that is a true republic whose kings are philosophers¹."

The stranger, of course, carried away with him from England certain impressions of a people among whom he had for some months been sojourning. "It is worth consideration," he reported², "that the English care little or not at all for death. With kisses and salutations parents and children part; the dying say that they depart into immortal life, that they shall there await those left behind; and each exhorts the other to retain him in his memory. Cheerfully, without blenching, without tottering, they bear with constancy the final doom. They surely merit pity who with such alacrity meet death, and have no pity on themselves."

But what do they look like, asks a speaker in the dialogue through which Cardan relates familiarly his impressions; what do they look like, and how do they dress?

"In figure," he replies, "they are much like the Italians; they are white—whiter than we are, not so ruddy;

¹ De Rerum Varietate, p. 285.

² The succeeding account of the English people is collected from Cardan's dialogue De Morte, printed at the end of the book Somniorum Synesiorum, pp. 371, *et seq.*

and they are broad-chested. There are some among them of great stature; urbane and friendly to the stranger, but they are quickly angered, and are in that state to be dreaded. They are strong in war, but they want caution; greedy enough after food and drink, but therein they do not equal the Germans. They are rather prone than prompt to lust. There are great intellects among them—witness Duns Scotus and Suiseth¹, who rank second to none. In dress they are like Italians; for they are glad to boast themselves most nearly allied to them, and therefore study to imitate as much as possible their manner and their clothes. And yet, even in form, they are more like the Germans, the French, and the Spaniards. Certain it is, that all the barbarians of Europe love the Italians more than any race among themselves. We were all nearly killed in Belgium, because I had a youth with me who looked much like a Spaniard. But perhaps these people do not know our wickedness.

“The English are faithful, liberal, and ambitious. But as for fortitude, the things done by the Highland Scots are the most wonderful. They, when they are led to execution, take a piper with them; and he, who is himself often one of the condemned, plays them up dancing to their death.”

¹ Richard Suiseth, an English arithmetician, whose “Calculator,” edited by Victor Trinchavello, had been issued at Venice in 1520 by Cardan’s first publisher, Ottaviano Scoto.

And you penetrated, says the questioner, as far as Scotland.—“I did, and it was a great pleasure to me to see so many provinces; this is at any rate one pleasure open to the living.”—But the questioner then urges the discomforts that he must have endured; for example, those resulting from his ignorance of the language. “Truly so,” replies Cardan. “And I wondered much, especially when I was in England, and rode about on horseback in the neighbourhood of London, for I seemed to be in Italy. When I looked among those groups of English sitting together, I completely thought myself to be among Italians: they were like, as I said, in figure, manners, dress, gesture, colour, but when they opened their mouths I could not understand so much as a word, and wondered at them as if they were my countrymen gone mad and raving. For they inflect the tongue upon the palate, twist words in the mouth, and maintain a sort of gnashing with the teeth. But then what pleasure could be taken there by one whose thoughts were with his children? I was so racked by the thoughts of those whom I had left at home, that for that cause only I was ready at once to seek and beg for leave to go on with my journey.”

The stay in London was not, therefore, very long; but an offer was there made to Cardan by which, if he had accepted it, his departure might have been still more

hastened. Laval, the French ambassador, and also another confidential agent of the King of France, were offering him eight hundred gold crowns a year; and further, promising a chain of five hundred gold pieces if he would kiss hands and at once leave the court of London. There were others also who endeavoured to secure his services for Charles V, who was at that time besieging Metz. Jerome declined both offers. He would not go to the emperor because he was then in a position of the utmost difficulty, where he, indeed, lost the greater part of his army through cold and hunger. He would not go to the King of France because he thought it wrong to forsake his liege lord and to give in adhesion to the enemy¹. His spirit shrank also from court servitude, because, as he said, he thought it foolish, life being so short, to become a dead man for the sake of a livelihood, and to be unhappy for a long while, in the hope of being some day happy². Resisting, therefore, all temptation, Jerome set his face in a determined manner towards Milan. Another temptation also he resisted. He steadily refused to acknowledge the title of King Edward to be styled Defender of the Faith, in prejudice of the Pope, and took from the court a reward of a hundred gold crowns, rather than of five hundred or a thousand which

¹ De Vitâ Propriâ, cap. xxxii. for the preceding.

² De Libris Propriis. Lib. ult. Op. Tom. i. p. 131.

he was told that he should have if he would overcome his scruple¹.

In this mood he quitted London. Our capital itself does not seem to have made any great impression on him. In a chapter upon cities that he had seen, written soon afterwards, he says of London only that it is about fifty miles from the sea, upon the river Thames; but that to confess what he thinks, it is not by magnificent buildings or by walls that towns are made illustrious, but by men, brave and excellent, who cherish virtue. Fine buildings for a foolish people are a handsome body for no soul². That is the whole opinion given by him.

Determining, for reasons before stated, not to go home through France, Jerome left London for Dover³, meaning to take ship from that port and cross the Channel. He was detained there, however, for nine days by adverse winds. Now he had conceived a desire or whim to carry home with him to Italy an English boy, and as he was talking of that whim on the evening before he sailed, the person with whom he lodged showed him a boy named William, twelve years old, honest, sensible, and obedient to his parents. His grandfather Gregory still lived, his father's name was Laurence, and they came of

¹ De Vitâ Propriâ, cap. xxix.

² De Varietate Rerum (ed. cit.), p. 672.

³ For this, and the succeeding facts, see the preface to the Dialogue de Morte, at the end of the book Somniorum Synesiorum, p. 344.

a good family¹. The boy's father may, perhaps, have thought that here was a fine opportunity for getting his son out into the world. "The fates," says Cardan, "thrust him upon me. Neither I nor his friends took time to remember that the boy could not speak either Italian or Latin: if I had thought of that, which was the beginning of all his misfortunes, I should scarcely have taken him away. But next morning, when there had passed only some words on the preceding evening, the father brought him down in haste, the ship then being in a hurry to depart through fear of pirates. The poor boy fell down upon the shore, so that he could scarcely rise again even when helped; and when I was told of that omen I almost refused to take him." Nevertheless, seeing with how much alacrity the boy was pressed into his service, Cardan says that he did not like to send him back. William himself was far from manifesting any reluctance to leave home. Hastily, therefore, it was decided that he should be taken, and the philosopher, taxed with a new responsibility, set sail across the narrow Channel for Cape Grisnez, meaning, when he reached land, to turn aside directly into Belgium.

¹ The surname of this family is called in the last book *De Libris Propriis*, *Lataneus*; in the preface to *De Morte*, *Cataneus*; one of course being a misprint. It was not, perhaps, of English origin. Cardan says of the father, "*erat Ligur*."

CHAPTER VII.

THE PHYSICIAN AT THE SUMMIT OF HIS FAME.

WHEN fairly across the sea, Cardan discovered that the English boy should have been left behind. He was not the son of poor parents. His paternal roof soon afterwards was thought worthy of sheltering Queen Mary and Philip of Spain, and he had been sent with the great philosopher under the impression that he would return to his own soil another Theophrastus¹. But there were no means of communicating with him otherwise than by signs. He could speak only English, and the only English that could be made available in his case—it belonged to the store of one of Jerome's followers—was in vain put into requisition. He could have been sent back by one of the physician's friends, Gianangelo Anono, who offered to take charge of him if needful; but it was Jerome's wish that he should go back of his own accord.

¹ De Morte. In the dialogue.

He therefore took pains to disgust him with the enterprise on which he was engaged, by whipping him for nothing on the naked skin. At the same time, the follower who had picked up some knowledge of our tongue stood by to improve the occasion, asking the boy, while he still smarted, "Volgo Doura?" (which is English for Will you go to Dover?) but the little Spartan answered only "No." Then the attendant asked him, "Volgo Milan?" and he signified a positive assent. Therefore, by no means meaning that the youth should come to harm, Cardan abided by his first intention. While they were on the way from England, William's father died, and there is a story of a ghostly head and dead face that appeared to the boy and frightened him when they were on the water¹.

Jerome Cardan, in his route homeward, passed through Gravelines, Bruges, Ghent, and Brussels, to Louvain. At Louvain he talked with Gemma Frisius, properly named Reinerut, but entitled Frisius from his birth in Friesland. Gemma Frisius was professor of medicine in the Louvain University, and, like Cardan, excelled in mathematics. He had been often summoned to the court of Charles V, but had refused every invitation, much preferring the tranquillity of academic life. He was a remarkably small man, of the most insignificant aspect;

¹ Preface to the Dialogue de Morte, for the preceding.

and when Jerome talked with him at Leyden, forty-five years old, and only two years distant from his death.

From Louvain the travellers went by Mechlin to Antwerp, and at Antwerp they remained a little time, for no pains were spared there to detain them¹. In that town Jerome met with a slight accident. Going into a shop to buy a gem, he fell over the brasier, was hurt and bruised in his left ear, but the injury was not more than skin-deep.

Antwerp was the first place at which any long halt was made, and to visit that town Cardan had diverged slightly from his track. The original route was afterwards resumed, through Liege and Aix-la-Chapelle, to Cologne. From Cologne the travellers went up the Rhine, by Coblentz, Mayence, Worms, Spires, and Strasburg, to Basle.

At Basle, if Cardan had not received timely warning from Guglielmo Grataro, he would unwittingly have put up at a house infected by the plague. That town was the second place at which he tarried for a little time, and there the learned Carolus Affaidatus (who had published a work on physics and astronomy at Venice in the year 1547) received him into his villa. That liberal

¹ De Vitâ Propriâ, cap. xxix. for much that follows on Cardan's route, for the next incident cap. xxx. of the same work. Whatever is said in the text more than may be covered by these references, will be found in the Geniturarum Exemplar, pp. 138, 139.

man, at his guest's departure, used great effort to compel him to accept a valuable mule, worth nearly a hundred gold pieces. In the course of the same journey, a noble Genoese, named Ezzelin, offered also to the traveller an ambling horse (the English, Jerome says, call it, in their language an Obin—does he mean Dobbin?); but he was ashamed to take it, though he had never seen an animal that he thought handsomer. It was quite white, and there were shown to him two of the kind, from which he might have made his own selection.

On the horse given by Affaidatus, Jerome turned aside to Besançon, where he again stayed for some days, that being the last place at which he tarried on his way. There he lodged with a liberal and courteous scholar, Franciscus Bonvalutus, and met with a Church dignitary, by whom he was hospitably entertained and sent away with gifts. His was indeed a triumphal journey home to Milan, for his fame abroad was at the highest, and good gifts awaited him at almost every stage.

From Besançon he travelled into Italy, through Berne and Zurich, of course visiting at Zurich Conrad Gesner, who kept open house there for all learned men who came into his neighbourhood. Gesner was not only the best naturalist among the scholars of his day, but of all men of that century he was the pattern man of letters. He was faultless in private life, assiduous in study, diligent

in maintaining correspondence and good-will with learned men in all countries, hospitable—though his means were small—to every scholar that came into Zurich. Prompt to serve all, he was an editor of other men's volumes, a writer of prefaces for friends, a suggester to young writers of books on which they might engage themselves, and a great helper to them in the progress of their work. But still, while finding time for services to other men, he could produce as much out of his own study as though he had no part in the life beyond its walls. Cardan therefore records, as we might have expected, that on his way through Zurich he was Gesner's guest.

So then travelling on into Italy and there sailing across the Lake of Como, Jerome re-entered Milan on the 3rd of January, 1553, after an absence of three hundred and ten days. How different that entry from the former one, when he and Lucia came in from Gallarate paupers! He had been called, for the sake of his skill, to a remote part of Europe. He had been sought by the emperor himself, by the King of France, and for the Queen of Scotland. He had been honoured by the King of England. The foremost men for rank and learning in many foreign countries had been eager to obtain his aid as a physician, or his personal acquaintance as a friend. He came back into Milan loaded with honours and rewards to take his undisputed place as chief physician in the city

by which he had been despised. He became by right the medical adviser of the great men of the place. The governor, Gonzaga, courted him soon after his return, on behalf of his relative, the Duke of Mantua. He proposed to buy his service to the duke in perpetuity, for thirty thousand crowns, of which the first thousand were displayed at once: Cardan refused them. Gonzaga saw no harm in such an offer, but to the philosopher it sounded like an insult. He refused it steadily. Ferrante was astonished and displeased. Having in vain laboured to persuade Jerome, he betook himself to threats, but the physician, who refused to sell himself into a kind of bondage, explained boldly why it was that "he would rather die than be disgraced." To the credit of the governor, it is to be added that he liked him afterwards the better for his self-assertion¹.

From this point in Cardan's career we may glance back upon the past, and illustrate the change in his condition by referring to a few small objects of ambition not yet specified, which he had in the days of his adversity failed to attain. When he was leaving Sacco he had some designs upon the village or town of Caravaggio, where he would have received something less than a stipend of eighty crowns a year. He had been willing to take fifty-five crowns for a like position at Mazenta,

¹ De Vitâ Propriâ, cap. xxix.

but the plague raged so much in the place, that he would probably himself have been one of its victims; having looked over the ground, therefore, he prudently withdrew. At the same time he had thoughts of a hundred crowns a year at Bassano, whither his friends advised him not to go. In those days of his poverty Cesare Rincio, a leading Milanese physician, thought it no shame to recommend that he should settle in a village of the district of Novara, fifty miles from Milan, on a stipend of twelve crowns a year! Salaried physicians, settled thus in the plague-smitten and impoverished Italian towns and villages, fulfilled functions similar to those belonging now in England to an union surgeon, and their services were as inadequately recompensed. Cardan names two physicians, one of them at Gallarate, who married upon incomes of twenty gold crowns, hoping to perpetuate their families. He doubts whether either of the two would be disposed to marry twice. Later in his own life, when he was thirty-seven years old, and still struggling in Milan, he was a rejected applicant for the office of medical attendant on the hospital of St. Ambrose, which would yield a yearly profit of between seven and eight gold crowns¹. His condition was much changed,

¹ De Vitâ Propriâ, cap. xxxiii. He himself claims credit for the next fact in balancing his own account of vice and virtue. Others observed upon it. An example of such an opinion from without will occur in the course of the present chapter.

but he was the same man still; he had not changed his manner with his fortunes.

After his return from Scotland, Cardan occupied himself upon the emendation of his Books of Subtilty, and in the further preparation of his work on the Variety of Things. The extent of his practice interfered with his desk labour. In the year following¹, however, he wrote two books, containing nearly three hundred fables, designed for the pleasure of children and the use of men. These fables have, unhappily, remained unpublished. They would have formed an interesting portion of his works. We have to regret also that the familiar letters which he arranged for publication have escaped the press. In 1554 he wrote little or nothing; he was prosperous in his profession; indeed, he says, overpaid. Every year works of his were being printed or reprinted in one or other of the literary towns of Europe. In 1555 his commentaries upon Ptolemy, written on the Loire, with twelve horoscopes appended, in a separate work published at the same time in the same form, appeared at Lyons. Therein, speaking of himself, he wrote: "What I have not, I might have had; what I have has been not only spontaneously offered, but in a manner thrust upon me,

¹ The account of these books, written between 1552 and 1557, is from the end of the *Liber de Libris Propriis*, published in the latter year.

yet all in accordance with my earliest ambition¹." The dreams of his youth were realised.

In 1555 Jerome wrote on the Uses of Water, and, having been lately ill, wrote a work called *Ἀλήθεια*, or De Dedicatione. In 1557 he wrote a summary of medical science entitled "*Ars Curandi Parva*," other medical books, and some miscellaneous essays. He wrote, also, a letter to his old patient, Gaddi, then in prison—an Oration in Praise of the Milanese College—quite in good faith, to that had he come at last—and, among other things, a Declaration of the Size of Noah's Ark. From this list I have omitted the reply to Scaliger, published in 1556, because that is part of an affair that will require separate consideration.

In the year 1557 Cardan published, also, for the second time, a little work "*On his own Books*," which included many biographical details, and made good up to that year the register of all his writings. In the same year happened a domestic event that gave importance to the date. I take it, therefore, as the next point up to which the several threads into which this narrative occasionally divides itself have to be brought.

Before quitting the subject of these books, we should not omit to take notice of a protest, published afterwards by Cardan, on the subject of a liberty taken at Basle with

¹ *Geniturarum Exemplar*, p. 92.

his work on the Variety of Things. That elaborate supplement to the books on Subtily was printed at Paris, Lyons, and Nuremberg, both in Italian and in French, as translated by Richard de Blanche. The printer of an edition issued at Basle, Henricus Petrus, set among reformers, interpolated in one chapter half a dozen words hostile to the Dominicans. Jerome wrote to the printer on the subject, who replied in justification, What did a few words more or less matter to him so far away. The offensive sentence was reproduced in an edition published soon after at Avignon. Cardan therefore appealed to the world on the subject years afterwards in the third and last essay on his works, and made that interpolation the occasion of one of the very few allusions to the religious movements of the time that were suffered to escape his pen. Few as they are, they are all consistent and distinct. "As the writings of Saint Jerome himself," he says, "were interpolated by men who did not agree with his opinions, so, lest any person be misguided or deceived by others in my works, let it be known to all that I nowhere play the theologian, and that I wish never to stick a hook into another man's mass. But so far as regards my own way of life and my religion, I desire to follow what is safest, to obey that law, and use those rites, ceremonies, and customs under which I was born, which have been obeyed and used for so many centuries by my forefathers;

that I have no wish to sow discord, or to make a God of my own mouth, or to know more than is needful¹." Perfectly tolerant himself, Cardan withdrew from all cause of political offence. While he was true to the Church, and faithful to the priestly class by which he was throughout life supported liberally, and which, it should be observed, included his best patrons—Archinto, Sfondrato, Morone, Hamilton, and others who will be hereafter mentioned—he did not find this allegiance inconsistent with much bold speculation upon things divine. His speculation, however, was of that harmless and fantastic kind that may amuse philosophers, but never can infect the crowd. It attacked no Church interest, and did not hurt him, therefore, in his intercourse with cardinals and bishops.

"In the year 1557," says the physician, "I began some writings, but they were continued with the greatest difficulty on account of the assiduous care of sick people, most of them magnates, so that I had scarcely breathing time. For I had about that time ascended, as it were, without will of my own, to the highest point of my authority and influence, though there were many refusing to acknowledge it, and even plotting against me." Finding it difficult to make time for his pen to work out all

¹ De Libr. Propr. Lib. ult. Op. Tom. i. p. 112, *et seq.* for this and the citations following.

the ideas passing through his head, he resolved then to establish a method for the more ready finishing of books that still remained upon his hands. To hasten the completion of five or six works, he began, therefore, a sixth or seventh, and in that way arose his volume upon *Dialectics*, which treats of the essences of things. He began, also, then in his most prosperous day, another book on a matter of which he had had much experience, the *Uses of Adversity*.

Of his prosperity as a physician we have had many illustrations, and among the incidents of practice that occurred at Milan, between the date of his return and the year 1557, one only is necessary to this narrative. It will be remembered that Cardan left Edinburgh with a promise from Archbishop Hamilton, that at the end of two years he would send word how his treatment had succeeded. Jerome had, in the interval, both written and sent to him, but for two years no tidings of the archbishop were received at Milan. At the end of two years and one month there arrived a Scotchman, known to Cardan, with a letter from the reverend lord, running as follows¹:

“Your two most welcome letters, written in former months, I received through the hands of an English merchant; another was brought by the lord bishop at

¹ The letter is printed in the book *De Libris Propriis*, ed. 1557.

Dundee, with the Indian balsam. Your last letter I had from Scoto, with your most choice commentaries on the very difficult work of Ptolemy. To all these I have three or four times amply and abundantly replied. For I had addressed very many letters to you, but am uncertain whether they have reached your hands.

“Now, however, I have given orders to a servant whom you know, and who is travelling to Rome, that he shall pay a visit to your excellency, and, saluting you in my name, thank you, not only for your various and very welcome little gifts, but also for my health, that is in great part restored, for the almost complete subjugation of my disease, for strength regained; in fine, I may say, for life recovered. All those good things, and this body of mine itself, I hold as received from you. From the time when I had your medicines, prescribed and prepared with so much art and dexterity, the disease that is peculiar to me has made its visits with much less frequency and violence; the accustomed attacks now scarcely occur once a month, and sometimes once in two months; then too they are not urgent and pressing, as they used to be, but are felt very slightly.

“It would look like ingratitude (and I confess to it) if I did not acknowledge all those many and great benefits and send you back thanks. But now I despatch to you a living letter (namely, this Michael), and entreat and pray

your excellency, from my heart, that if I can be of use to you in anything, with aid, service, or money, you will send word to me by him; he will, without delay, send me intelligence, and the moment I have tidings of it consider the thing done.

“ Besides, Master William Cassanate, the physician, went home last year to his father’s house, and has not yet returned. A man certainly worthy of great name and honour, whose daily offices and house companionship are very pleasant to me. I would much urge and beg your excellency not to fall short of your usual kindness in writing to me, that the separation of our bodies may not be a separation of our minds, but that we may be always present to each other. I wish you, in my name, to salute those who are of your household. Farewell. From our metropolitan seat of St. Andrew’s. October, 1554.”

Michael was the archbishop’s first chamberlain, and he came privately authorised to offer to Cardan large payments if he would take office as Hamilton’s physician. But those offers were refused¹.

Though rude of speech, Jerome, as has been seen, was not rude with the pen; his just and high notion of the dignity of letters, and of the courtesies due by literary men to one another, not only kept all anger out of his

¹ Geniturarum Exemplar, p. 193.

printed works, but caused him to establish and maintain, by correspondence, friendship with many people whom he never saw. His recent tour had added to the number of his friends, and there were others with whom he was in his best days personally very intimate. Among these were two brother physicians, Montagnano Cavallo and Aurelio Stanno. There was also a Milanese patrician, Francisco Vimercati, skilled in philosophy, who acknowledged himself a disciple of Cardan. He had been called by Francis I. to Paris, and there made professor of philosophy; afterwards he was summoned to Turin by the Duke of Savoy. Vimercati was a good Greek scholar, and was the best interpreter of Aristotle in his own generation. Another of Jerome's friends was Boniface Rhodiginus, jurisconsult and astrologer, related probably to the great Cœlius Rhodiginus, who had taught at Milan, and had ranked the elder Scaliger among his pupils. The friendship felt for Cardan by his fellow-professor, Alciati the jurist, was maintained by his heir, Alciati the cardinal. Cardinal Alciati had power to become another strong supporter of the great physician's fortunes, and he thus again acquired a patron in the Church.

To this list of friends we must not delay to add the name of Gianpietro Albuzio, who might have been named in a former chapter as fellow-professor with Cardan at Pavia. Albuzio had, like Jerome, struggled a little while

at Gallarate, but at the age of twenty-five obtained the chair of Rhetoric at Pavia, and from that time remained for forty years, through all its trials and its struggles, true as a lover to his university. He became popular, and was invited to Bologna and to Pisa, but no prospect of greater gain could tempt him from his post. From the chair of Rhetoric in Pavia he passed to the chair of Logic, and when a vacancy occurred, his faithfulness was rewarded with the senior chair of medicine. He was a very learned physician, versed not only in polite letters and history, in Greek and Hebrew, but also a deep theologian. With him Jerome became more intimate in later years¹. Among other friends, Jerome names also Melchior, a Milanese physician, and one Thomas Iseus, towards whom he maintained always a great good-will, though it was met with an unsparing enmity.

Cardan was rarely without one or two youths under his care. In Milan, after his return, he had three pupils in succession—Fabrizio Bozio, who became a soldier; Giuseppe Amati, who became a political functionary; and Cristofero Sacco, who became a notary public. His old pupil and relative, Gaspar Cardan, had commenced practice in Rome². His elder son, Gianbatista, having with

¹ The preceding names of friends are from the fifteenth chapter *De Vitâ Propriâ*.

² *De Vitâ Propriâ*, cap. xxxv.

much trouble after two rejections obtained his degree at Pavia, practised at Milan under his father's auspices, but even then it was not easy to procure his reception into the Milanese College of Physicians¹.

This son, in spite of his father's praises and fond partiality, does not seem to have been particularly clever. His simplicity verged, perhaps, upon stupidity; he had acquired that taste for dice which Jerome himself only set aside when he had attained the position sought so restlessly; he had a taste not acquired at home, for he was a glutton. Certainly he and Aldo gave Cardan much trouble after his return; now, he says, he was distressed by one, now by another, and sometimes by both at once. Aldo was becoming very fast a hopeless reprobate. Gianbatista wrote a very little book while he was in his father's house at Milan, but it did not go to press during his lifetime. It was "Upon the foetid foods not to be eaten²," and arose out of the domestic suppertalk. Upon the appearance of the usual salad, the young physician threw out a professional remark concerning onions, that Galen had forbidden any physician to use

¹ De Libris Propriis. Lib. ult. Op. Tom. i. p. 92.

² Authorities for the preceding will be cited in the sequel. The account of the origin of Gianbatista's book is taken from the introduction to the book itself, *De Cibis foetidis non edendis*, appended by Cardan to the first edition of the work *De Utilitate ex Adversis Capiendâ*.

foetid articles, as onions, garlic, or the like in food. Jerome contradicted that assertion. His son was surprised, and thought that he must intend some joke or trick, for Galen was particular upon the point in more places than one. Finding his father to be serious, Gianbatista began next morning his little treatise, addressed "by a Physician to Jerome Cardan, Physician of Milan." He attended poor people and others, to whom it was allowable to introduce him, and effected, as his father declared afterwards, some great cures. He began also a little tract "On Lightning," but that was not a kindred subject, for it is evident, I think, that he himself was not particularly quick or brilliant.

"My nativity and that of my daughter," Jerome said, in a book published after his return from England, "decree to me many calamities and little good, but the nativities of my sons promise me much good and little harm¹." Libellous stars! The daughter, Clara, never gave her father any pain. While he was practising in Milan, after his return from his great journey, an excellent and wealthy young man, Bartolomeo Sacco, a Milanese patrician, courted her, and married her, and received with her from the hands of the great physician a befitting dowry. In after life she never gave him any

¹ Geniturarum Exemplar, p. 122.

reason for an hour's regret, except at the fact that she continued childless¹.

But there was another member brought into the household of Cardan—the English Boy. When he reached Milan, unable to explain what were his own wishes or what promises his father might have made to him, little or nothing could be done till he had picked up a knowledge of Italian. The physician became full of occupations, and the luckless William suffered great neglect. At the end of a year and a half he spoke Italian well enough to complain that he had not been sent to any school, that nothing had been done for him. He had, however, been put under a music-master, because, says Cardan, “the people of his country seemed to have aptitude for music,” but the master took small pains to teach, though he received in one year ten gold crowns, and the boy seemed to be very quick at learning. Then, when Jerome bought a book, William did not appear at all solicitous to learn to read it, for he was immoderately fond rather of playing with companions of his own age. In the crowd and hurry of his daily practice, Jerome forgot, culpably it must be said, his duty to his charge; he did not fulfil the trust he had too thoughtlessly accepted. When his conscience was uneasy at the boy's neglected education,

¹ De Vitâ Propriâ, cap. xxvii.

he consoled himself with the reflection that the youth seemed to have no taste for study. But he was faithful, obedient, honest, and clever; he was gifted with remarkably acute vision, was patient in enduring labour, and was never querulous. "Wherefore," the physician adds, "he was so loved by me, that he could not have been loved better; and that made me feel more heavily that I appeared to be deficient in my duty to him. But in the mean time, so many impediments were raised in my way by my sons, that I could attend to little else. Now one troubled my waters for me, now the other, sometimes both at once¹."

Very incidentally and without giving any date, Cardan says, that "in those days a person wrote against my books on Subtilty, in reply to whom I wrote an Apology, which is added to the third edition of the work. It is very useful to assist the comprehension of the books on Subtilty; expositions of some difficult passages are therein given, and demonstrations not commonplace, though few²." So lightly the philosopher thought it proper for the dignity of scholarship, that he should pass over the violent and unprovoked assault upon his credit next to be chronicled.

The assailant was the elder Scaliger, who had begun

¹ Preface to *Dialogue de Morte* for the preceding.

² *De Lib. Prop. Lib. ult. Op. Tom. i. p. 117.*

life as a fighter among soldiers, and closed it as a fighter among scholars. He was born seventeen years before Cardan, on the banks of the same lake of Guarda within which Jerome had once been nearly drowned, and from which Brother Luca had drawn the delicious carp that were to him not less agreeable than mathematics. The birthplace was the castle of Ripa, belonging to his father, Benedict, who had done good service in war to King Mathias Corvinus. Two days after his birth he had felt the pressure of the times; the castle was attacked by the Venetians, taken and plundered, the mother, with the infant just born, and the other children, saving their lives by flight. At twelve years old the future scholar, Julius Cæsar Scaliger, became page to the Emperor Maximilian. Him he served for seventeen years, proving himself a fine soldier on all occasions, and particularly at the battle of Ravenna, wherein he lost his father and his elder brother, Titus. He was not then named Scaliger, and it is doubtful whether he had at any time a right to take the name. He claimed to be descended from the princely family of La Scala to which Verona had belonged, and considered that Verona was his heritage whenever he could get it. On the other hand, it is declared positively that the Scala family had been extinct for some generations. His father, Boniface, "a terrible man," the grandson calls him—indeed the whole family was terrible—Boniface called

Julius Cæsar, after his place of education in Slavonia, Da Burden, in order to distinguish clearly between him and his brother Titus. Enemies of Scaliger made light, afterwards, of the Verona story, and undertook to prove that he belonged to a family of humble tradesfolk, bearing the name of Burden. Julius Cæsar, rightly or wrongly, held himself to be a prince born to a principality that was maintained against him by the enemy, Verona being in the hands of the Venetians. To get his own, he thought that he could do nothing better than become a pope, and declare war with Venice. He, therefore, at length quitted his post in the army, and began a bold push for the pope-dom by betaking himself to Bologna with a view to preparation for an entry into the Franciscan order. He studied at Bologna logic and scholastic philosophy—especially the works of Duns Scotus—but a little closer knowledge of Franciscans soon disgusted him, and he forsook their company. At Bologna he had made himself remarkable by having his hair cropped, while other Italians wore it tolerably long on each side of the face, as the monks used to do. He became known, therefore, by his crown among the Bolognese as Tonso da Burden. That name he retained when he left study, and, resuming his old profession as a soldier, served under the King of France in Italy. He was diverted at last from a military life by love of knowledge and by gout, and having been suf-

ficiently disgusted with the notion of a monk's life, turned physician. He received his doctorate at Pavia, then bearing the name of Burden. In 1529 he accompanied the Bishop of Agen to his home, as medical adviser, on condition that he should not be detained at Agen longer than eight days. Within that time, however, at the age of forty-five, he fell in love; it is said, with a young woman of thirteen. Her youth must, I think, have been maliciously exaggerated; at any rate her charms were powerful; they detained the physician, caused him to settle in the town, and very soon to marry her. Julius Cæsar Scaliger thus became fixed at Agen as M. de l'Escalle, an eminent practitioner who prospered greatly. He and his wife had fifteen children, of whom seven survived; and the boys seem to have been all terrible, like their grandfather and their father. "My father," said his son Joseph Justus, the scholar, in familiar talk¹—"my father was honoured and respected by all those court gentry. He was more feared than loved at Agen; he had an authoritative way, a majesty, a presence—he was terrible; when he cried out he frightened all of them. Auratus said that Julius Cæsar Scaliger had a

¹ The preceding sketch is amplified by reference to, and all the succeeding traits are taken from, the first good edition of the *Table-Talk* of Scaliger the Younger: "*Scaligerana. Editio altera, ad verum Exemplar restituta, et innumeris iisque fœdissimis mendis, quibus prior illa passim scatebat diligentissime purgata.*" Cologne, 1667.

face like any king's. Yes, like an emperor's. There is no king or emperor who has so grand a way as he had. Look at me; I resemble him in every respect perfectly, the aquiline nose. I was but eight years old when I held my little sister at her baptism, and on the same day my father gave me the birch—birched me, his fellow-sponsor. My sister is a poor creature, a beast¹."

A terrible man was Julius Cæsar Scaliger when he girded up his loins to birch Jerome Cardan. He believed that he had a familiar demon—his son says a devil²—that urged him to write and gave him understanding. He had two daughters—I do not know which of them was the beast—but they must have differed from each other much; one died a nun, the other died the widow of two husbands³. His sons all had the spirit of the family. One of them, Constant, was called, commonly, the Gascon Devil. He was so terrible, said Joseph Justus, that once when he engaged for sport in lance practice with eight Germans, he killed some, hurt others, and fled to Poland, where he was armed afterwards by Stephen, the king, but destroyed by the envy of the nobles. They stabbed him during a hunt. My brother Leonard, too, was killed by

¹ Scaligerana (ed. cit.), p. 229. ". . . . Il estoit terrible et crioit tellement"

² "Erat Dæmoniacus, habebat diabolum ut credebatur." Ibid. p. 233.

³ Ibid. p. 228.

twelve men: I never could have justice. Condé would do nothing¹.

M. de l'Escalle made money at Agen, bought houses, and acquired property which he could not hold securely as an alien; he therefore obtained letters of naturalisation, and became a Frenchman. In the deed he is entitled Jules César de l'Escalle de Burden². The new adoption was no shock to his patriotism, for the son says, "My father thoroughly hated the Italians, and they hated him³." We may as well know something too of Madame de l'Escalle from her son Joseph: "My mother was very eloquent in Gascon. My father used to say, that if she had been a man, and they had made a lawyer of her, she would have won all the bad causes." What weapon she had, therefore, she also was prompt to use. "My father," says the son, who became famous—"my father called me Justus, and my mother Joseph. He used always to say to me, 'I want you to be more learned than I am.' " So indeed he became; but the elder Scaliger, with a bold and striking character, had talents of no mean order,

¹ "Qui dicebatur Vasco Diabolas, tam terribilis fuit . . ." Scaligerana, p. 233.

² The letters of naturalisation were first printed by Bayle in his Dictionary, where they may be seen in a note to the article "Verona."

³ Scaligerana, p. 234. The succeeding citations are all selected from the same work, and may be found scattered between the pages 227 and 243.

although they were not equal to a contest with Cardan. He was not so good a scholar and a critic as his son, but he was a better poet, and a justly eminent physician. During the first forty-seven years of his life he published nothing; then he began to print, and thenceforth poured out writings in a flood. He had a wonderful memory, and understood Hungarian, German, Italian, Spanish, French, Greek, and Latin; he accomplished a feat that had been achieved by no other alien, and by few Frenchmen not to the manner born—he caught the Gascon dialect most perfectly, and talked it like a native. He was kind to the sick, and hated liars. He thought it no lie to declare that Xenophon and Massinissa rolled together would not make a Scaliger. He was well made, tall, and robust, of course. How could he have been puny? At the age of sixty-four he could carry a weight that four ordinary men would barely lift. “My late father, in walking, was so bold and erect, and yet he was gouty; that belongs to us by race, bold and erect walking.”

I must add, upon the same authority, two or three minor characteristics, to complete our picture of the man. “My father painted perfectly, both in the Greek and Latin style, yet only with two fingers, the thumb and ring-finger, on account of gout, old pictures and new ones. . . . Neither my father nor I ever have needed spectacles. My father did not mend his pens, they were

made for him; I cannot mend mine properly. My father wrote his copy very carefully, and that is why his books were so well printed. He once imitated exactly, with his pen, an old Arabic manuscript. My father replied to the sixth edition of Cardan on Subtilty. His book was very well printed at Paris; it did not contain one misprint. The second German edition was dedicated to me. My father always said that he should die in the month of October; so he did. My father, four years before his death, was half a Lutheran; he saw abuses more and more every day, and he wrote epigrams against the monks, whom he detested."

The energetic Scaliger the First, of course, soon made himself famous, and it need scarcely be said that his main notion of literary laurels was, that they were to be earned by fighting. He must win them in tilt against renowned knights of the quill; and so it happened that he began his literary career with a violent assault upon Erasmus. Erasmus had published two orations upon Ciceronian Latin¹, the object of which was to show what most literary men of the time, and Cardan among them, also asserted and acknowledged, that the Latin of Cicero was insufficient for the purposes of scholars in that day, and that it must be modified and amplified for use in Europe

¹ Desiderii Erasmi Ciceronianus, sive De Optimo Dicendi Genere. The preface to the first oration is dated 1531.

as the universal language of the learned. It was also too cumbrous to suit itself to modern idioms of thought. Scaliger raised the cry of Cicero for ever, and asserted that the language, as used by that orator, sufficed for every purpose, and should to the end of time never be departed from by any scholar who had proper principles of taste. The attack upon Erasmus was quite unprovoked, wrong in the matter, and rude in the manner; but as it was Scaliger against Erasmus, the two names were placed in opposition as the names of rivals. On the same principle, after some years of warfare against men of lower mark, Scaliger aspired next to be talked of as the rival of Cardan. That physician had been traveling through France, and was just then perhaps the most renowned and popular of all contemporary philosophers. His books on Subtilty were being talked of by all learned men. Was there a better thing that Scaliger could do than fight Cardan in presence of the world of letters, and make him confess in his throat the books on Subtilty to be all nonsense?

He therefore addressed *Fifteen Books of Esoteric Exercitations upon Subtilty to Hieronymus Cardanus*¹, which were prefaced by an address from Joannes Bergius, physician, to the candid reader. Joannes Bergius ex-

¹ *Julii Cæsaris Scaligeri Exotericarum Exercitationum Libri xv. de Subtilitate ad Hieronymum Cardanum.* Paris, 1554.

plained that the fame of Cardan's work having induced him to get it, he, when he had read it, sent it on to Scaliger, and Scaliger, for his own private amusement, battled with its errors. Being urged then to reply to the book more amply, he displayed his willingness to do so, but was unwilling that his comments should be printed. But he was urged at last to suffer that; for he was grieved at Cardan's errors, thought that he should have put an Italian curb upon his runaway wit, and felt it proper to admonish him as a father—now and then, when the occasion required, with severity. Occasion seems to have required that on every page, if severity be implied by railing, jeering, and rude personal abuse. It was a thick military book, full of hard fighting, with no quarter and no courtesy. At the end, Scaliger himself abjured all imputation of a desire to raise himself upon the ruins of a brilliant reputation. His book, certainly, if it had that object, failed. The contest was unequal, and the opinion of the learned, as reported by Naudæus, was, that though there were faults in Cardan's book, Scaliger committed more errors than he attempted to correct. By Jerome's dignified reply the attack was made to look extremely pitiful. A standard historian of Italian literature, Tiraboschi, compares the spirit shown by Cardan in the dispute to that of a giant fighting with a girl. "Upon matters of philosophy and mathematics,"

he says, "Scaliger was not worthy to come into contest with Cardan; and all the learned, while they acknowledge that Cardan erred on many points, at the same time agree that he achieved a perfect victory over his rival¹." The tone of Scaliger's book may be shown by the quotation of one little exercitation; it is one of those in which he had the sense on his own side, selected only for its shortness².

"We confess, too, from this that you are divine. You say that silver has a pleasant, sweetish taste. And that gold has a far better taste, but does not yield it. Are you not clearly divine, who alone know what no man ever knew? For if it is not yielded, it is not perceived. If it does not act, you are not acted upon. If you are not acted upon, you do not perceive. If you do not perceive, you do not know that there is anything perceptible. If you do not know, do not enunciate. If you enunciate, the Aristotelians, whom you call too rash, will say you lie."

Jerome did not trouble himself very much about this onslaught, which was based, Joseph Scaliger says, on the sixth, Cardan himself says on the second³, edition of his

¹ Tiraboschi. *Storia della Letteratura Italiana* (Milan, 1824), vol. vii. p. 689.

² *Exotericarum Exercitationum* (ed. cit.), p. 160.

³ He says that he added his answer to the third. Scaliger may have replied, however, to the sixth impression, as there were piratical issues in some towns which Cardan would not reckon with his own.

celebrated book. In what temper an answer was prepared will presently be stated. In the mean time, no answer having come to the hands of Julius Scaliger after the lapse of many months, I think it must have been some jester practising on the vanity of the disinherited Prince of Verona, quintessence of Xenophon and Massinissa, who told him that the renowned philosopher of Milan had expired under the terrors of his criticism—that Cardan was dead, and that his death was caused by the *Exercitationes*. Scaliger believed it, and what was more unlucky, acted upon his belief. He thought reparation due to the public for the harm he had unintentionally done, and put forth an oration which was published with some letters of his¹, and which, as an illustration of vanity, belongs to the curiosities of literature. Cardan survived by seventeen years the author of the succeeding funeral harangue:

“When the cruelty of fate had pressed on me so miserably that with my private glory was combined the bitterness of public grief, and my efforts so eminent and laborious were followed by a calamity so dire: I thought that I must not neglect to leave a testimony to posterity that the distress of mind occasioned to Jerome Cardan by

¹ *Julii Cæsaris Scaligeri Epistolæ aliquot nunc primum vulgatæ. Accedunt præterea alia quædam opuscula, &c. Tolosæ. Typ. Raymondii Colomerii, 1620.* It was published as an appendix to the *Ciceronian Orations* of Erasmus, and the attack of Scaliger upon them.

my trifling castigations was not greater than my sorrow at his death.

“For even if his life had been a terror to me, yet so great was his merit in all departments of letters, that I, who am but a citizen of the literary world, ought to have preferred the common good to my own personal convenience. For the republic of letters is bereft now of a great and incomparable man: and has endured a loss which perhaps no after centuries may know how to repair. I, who am but a private man, have lost a witness and a judge, and even (immortal gods!) an applauder of my lucubrations: for he approved of them so much, that he rested all hope of his own defence in silence, despairing of his own power, ignorant of his own strength: for in strength and power he so much excelled, that there could escape his knowledge no possible way in which my castigations might have been turned to the increase of his own celebrity.

“But he was so great a man as to be able to show to students that if he had judged truly, he would have seen the truth of all the things that I had written contrary to his own doctrine; if he had felt otherwise, the same presence of mind would have determined him to confirm what he had once asserted, so far as he had asserted what could be confirmed. I who in that mind and hope wrote to this man, of whom I heard commonly that he was, of

all mortals, the most ingenious and erudite, trusted indeed that he would not vanquish me, but who does not see that I expected hard-earned praise out of his life, through his assent, not idle quiet through his death, and as it were desertion of the argument.

“Especially, illustrious men, might I have been allowed to enjoy the benignity and beneficence of one whom I knew to be most acute and confident in his own greatness. For it was easy to obtain from him, the most courteous of men, even by the simplest little letters an exchange of friendship. Was it for one long exercised in battles or accustomed to meet with audacity all perils, for one almost worn down among incessant disputations, consumed with daily cares of writing, to dispute supinely with so great a hero? in so great a conflict and so great a dust, it was not likely that I should have set my heart upon the winning of a sleepy victory.

“Such victory is not in reason absent, nor in the opinion of judicious men should it be absent, but it is of no use to my fame. For to this opinion my mind always has adhered, that every man (since we are all of us but little more than nothing) is so capable of fault that he might contend, if he pleased, even against himself. But if this be the case with a most consummate man—as it is often with me and some others,—his slips from truth are not to be set down in the register of errors unless he shall after-

wards determine to defend them. Obstinacy must needs pass for firmness, fierceness for courtesy. He does not err through anything that falls from him too hastily, until he supports his fault with an unworthy defence. Therefore, if while he was living, from a consciousness of their truth, he received my endeavours to correct him silently, what could have been more to my honour? For he would have received my words as from a teacher or a father with the most modest assent. But if he had embroiled himself in a more pertinacious disputation, who cannot now understand, from the agitation of mind already produced, how that would have gone near to madness?

So much that divine man shrewdly considered. What he could not bear, he bore; what living he could not endure, dying he could. And what he could have borne he did not bear, that is, the communion of our minds and studious judgments for the public good. Wherefore, I lament my lot, since I had the clearest reasons for engaging in this struggle, the most explicit cause of conflict, but instead of the anticipated victory I obtained such a result as neither a steadfast man might hope (for who would have anticipated such an end to the affair?) or a strong man desire.

“My praise of this man can scarcely be called praise of an enemy. For I lament the loss suffered by the whole republic, the causes of which grief the herd of literary men may measure as they can, but they will not be

measured in proportion to the merits of his real divineness. For whereas learned men ought to excel in three respects—in integrity, in erudition, and in wit joined to solidity of judgment, these three points so completely met in him, that he seemed to have been made at once by nature wholly for himself and solely for the world. For no man was more humane and courteous even to the lowest, no man was more ready for all dealings with the greatest men. Royal in lenity, popular in the elevation of his mind, he was the man not only suited for all hours, but also for all places, for all men, for all changes of fortune. Forasmuch as concerns his erudition, I ask you to look round on the most consummate world of letters in this happiest of ages; many and great men will display each his own merit, but each occupied only on this or that part of philosophy. He, however, so joined with the profoundest knowledge of the mysteries of nature and of God an acquaintance with humaner letters, and expounded them with so much eloquence, that he appeared to have devoted his entire life to their study. Truly a great man, great if his power were not more than this. But if we consider the surprising swiftness of his wit, his power, as of fire, to master anything, embracing equally the least things and the greatest, his laborious industry and his unconquered perseverance, he may be called shameless who should venture to compare with him.

“ I had not, therefore, a mind hostile against one whose footprint I had never seen, nor was I envious of a man whose shadow never had touched mine; but on account of the famous arguments, many and great, recorded in his works, I was impelled to learn something about them. And when the Commentaries upon Subtilty were finished, there came out a sort of appendix to the former work, the book on the Variety of Things. Then I, before I heard anything of his death, after a custom certainly common with me, imitated myself, and composed, in three days, an excursus on it in exceedingly short chapters. After hearing of his death I formed them into one small book, that I might lend my aid also to his labours; but it was done as he would himself have wished it to be done, if he had first talked over his work with me, or with some person my superior in learning.”

How far Cardan was from counting Scaliger among the sorrows of his life, the preceding narrative, and his slight mention of “a person’s” book against him, will have already shown. It has been said more than once, that although rough of speech, Jerome held very exalted notions of the courtesies due between literary men. He kept all personal dispute out of his books, and in his reply to Scaliger, who had been hunting him by name, and crying out at him with lusty vilification through page after page, beginning with the title-page, Jerome not only

abstained from all mere abuse, but (no doubt to Scaliger's great mortification) he did not once mention the name of his antagonist. The book was superscribed simply "In Calumniatorem¹," and the name of Scaliger does not occur in it once. When, however, Jerome heard of the kind things his censor had said, when he supposed him dead, the name of Scaliger appeared in a succeeding work, coupled with friendly words and free acknowledgment of courtesy. The younger Scaliger cited Cardan's answer to his father as a literary curiosity, because it was a reply that never once named the assailant². The motive for that reservation certainly was not disdain, but a conviction that injurious personalities ought not to be allowed to find their way into the deliberate productions of a scholar who desired an immortality of fame.

¹ Actio Prima in Calumniatorem.

² Scaligerana, p. 243. "Cardan a respondu a Scaliger et ne le nomme point, mais dit, adversus quendam conviciatorem."

CHAPTER VIII.

INFAMY.

JEROME CARDAN is speaking¹. "It was on the 20th of December, in the year 1557, when all things seemed to be prospering that I lay awake at midnight. When I wished to sleep the bed appeared to tremble, and the chamber with it. I supposed there was a shock of earthquake. Towards morning I slept, and awaking when it was light, asked Simon Sosia, who has since followed my fortunes, and was then lying on a little chair bed near me, whether he had perceived anything. He replied, 'Yes, a trembling of the room and bed.'—'At what hour of the night?'—'Between the sixth and seventh.' Then I went out, and, when I was in the market-place, inquired of people whom I met whether they had observed the earthquake. When I returned to my own house a servant came running out to me full of sorrow, and announced

¹ De Vitâ Propriâ, cap. xl.

that Gianbatista had brought home Brandonia Seroni as his wife, a girl whom he loved, but who was destitute of all good qualities. I drew near, saw that the deed was done. That was, indeed, the beginning of all ills.

“I thought that a divine messenger had wished by night to signify to me what he knew to have been settled on the evening before. At dawn, before he quitted my roof, I had gone to my son and said (not so much admonished by the portent as by his manner, for he was not like himself), ‘Son, take care of yourself to-day, or you may be doing some great harm.’ I remember the spot from which I spoke, for I was in the doorway; but I do not remember whether I named to him the portent.

“Not many days afterwards I again felt the chamber tremble; I tried with my hand, and found that my heart was palpitating, for I was lying on my left side. I raised myself, and the tumult and palpitation ceased: I lay down again, and then when both returned I knew that they depended upon that. It must have been so on the former occasion; but I thought that the trembling might have had a double cause, partly supernatural and partly natural.”

As usual, in Jerome’s superstition there is no dishonesty. So, when he had read among his father’s papers that prayer to the Virgin at a certain time on a certain morning in the year would be a cure for gout, he tried it, and he adds, that a few months after trying it he was relieved,

but that "at the same time he employed remedies according to his art¹."

The marriage of his eldest son with a girl who was of the worst repute, and who could bring to her husband and to himself, too, if he should harbour her, nothing but disgrace, was the beginning of Cardan's great sorrow. He refused to admit the new wife to his home. Father and son parted in anger; but the physician's heart ached for his foolish boy. Care gathered about him, and the months of separation, during which Gianbatista struggled weakly in a sea of trouble, were not less miserable to the father than to the son. "In one word," he once said of himself, "I embrace all. I have been immoderate in all things that I loved²." For about nine months he maintained the battle with his feelings. During that time a grandchild had been born to him, but its mother was no honest wife; and Gianbatista had found bitter reason to deplore his rashness. Then Jerome heard that his boy was living with Brandonia in destitution, and his heart could bear no more. He therefore wrote to him, and his letter was as follows³:

"As I feel rather pity for your fate, my son, than anger against the offence which you have committed, not

¹ De Vitâ Propriâ, cap. xxxvii.

² Geniturarum Exemplar, p. 91.

³ De Libris Propriis. Lib. ult. Op. Tom. i. p. 117.

only against yourself, but against all who belong to you, I write to you these words. If you will fairly give your mind to them, and obey them to the letter, there is yet hope of saving you. That you may bring your mind to do that (if there is any power in the prayers of a father for a son) I entreat and again entreat God as a suppliant.

“For how can I help being moved to pity when I see you beset with so much calamity that you want all things of which mortals stand in need? At the outset, advice, money, strength of frame; and now, at last, your health. O Heaven! If you had not sought all this by your own will, this sorrow would be more than I can bear. But since you have compounded for yourself this cup of all miseries, among which I have lately understood that you are condemned even by my friends, and that (I think) through your own fault, I can do nothing (for I know their great influence and their good-will towards you and me); but I have resolved to bear with equal mind whatever is in store. Nevertheless, so great is my anxiety, that in the depth of night (though I was not used to rise before the day, now I rise long before it) I write to you this.)

“I call God to witness that I am moved by no anger; that I would in any way have helped you, and received you into my house; but I feared (as was most likely) that to do so would have been rather my own ruin than your

help. For you are several and young, ready to destroy; I am already seized by age, and am alone. I have no property; you, with a prodigal mind, have no wit. Therefore, it was far more likely that I should have fear on my own account than that I should have hope of redeeming you by my advice.

“Consider too your deed which cannot be undone; the evil mind that is in those people; for aged parents, if they were not evil-minded, never could have permitted in their daughter conduct that was of the worst example, in defiance of the laws of God and man, and precepts of the senate. They supposed that my small professional returns, which they took to be greater than they are, would be brought to the rescue; they had profligately wasted their own goods, what wonder that they gaped after the goods of others? If they had had anything else in view, they would not have driven you so hurriedly into these nuptials. It was not to be hoped, therefore, that I could at once transform your fortunes and hers; that would have been the labour of a very wealthy man, as they supposed I was: how I feared that I should fare worse through them than through you, if I received you, do you (who are now, I think, more placably disposed) consider with yourself. A father, without any fixed property, with income from a precarious art, entering upon old age, surrounded by the great envy of many, and therefore with

uncertain hold of reputation, with weak health, and a prospect of scarcely more than maintenance among so many taxes, in face of the great dearness of everything, surrounded by so many wars, of which an end is scarcely to be hoped: I am to go without, or lose the little gains derived out of my printed books, which form no small proportion of my income; to abandon hope of office; and to support you, numerous, impotent, without a calling, or without repute in any, without sense, with the most ruinous habits of indolence, luxury, and prodigality. What say you? To have done that would not have been to avoid danger, but wilfully to send for it. But, lastly, if there was or is any hope in our affairs, it may be that you, living outside my house, without being in any way an impediment or cause of danger to me and (what I count as infinitely more important) without being a cause of grief or care, can obtain a subsistence if you will obey my commands. How that is to be done I will now tell you.

“In the first place, I seem very opportunely to have written two books of which you both are in much need; one is entitled *Consolation*, and the other, much more to the purpose, I am now finishing, upon the use that is to be got out of *Adversity*: they are of use, too, to me, as it is fit they should be. First, then, for the assistance of which you perhaps stand in present need; it will be two-

fold: from me and through me. For myself, I will take care that you shall have your full income, for I promised you a moiety of the present year's receipts, and I will give you the same share in the coming year; now also I permit you to obtain supplies at once for your immediate support. If I can beg anything at court, you shall share it, and have half the income it may bring; and so, however the matter may be, you will have more than I, who from the first had to support my family. Let it be your business to arrange with your father-in-law that when, in a future year, the letting shall expire, the woods be afterwards separated into as many lots as possible, either by sales or by the letting of the trees, for either half of this will come to you with a stipend from the court, or the whole without a stipend, should fortune oppose my endeavours. But what will be done through me you know already; all receipts from the common people, or those inhabiting the many-storied houses, and those who, having shown their excretions, ask to be visited, shall become yours. Whatever I can beg from friends, to your advantage, you shall have. The Venetian ambassador gave me five ells of silk; he will either give the same to you, or you shall have the half of what he sent me. So much concerning help.

“As for the books on Consolation, your mind is in want of moderation. In the first place, do not cherish sorrow

at past deeds, or present fortune: for all the ills that now hang over you, your poverty, your wife, your ill-repute, your absence from your father's house, all these I say you have prepared for yourself willingly and knowingly. Wherefore, bad as they are, you must not bemoan them. Of what belongs to fortune you have nothing to bemoan: your nature is human, not brutish; you are a man, not a woman; a Christian, not a Mahometan or Jew; an Italian, not a barbarian; sprung of a renowned city and family, and—if that be anything to the purpose—of a father through whose work (if you do not go utterly to ruin) your name will endure for many ages: do you think fortune has been hard to you in these matters? You have only to bear with infirm health and a weak body; one was your hereditary right, the other (if you were prudent, and abstained from excessive pleasures) you could meet and remedy. Reflect upon this, that through your errors God punishes me, and through mine you; for you could not have gone astray except with His permission. For the mind that is within us comes from God, and that, too, momentarily. And things which seem to be calamities, if you could look a little forward into coming events, you might understand to be vain things, such, too, our seeming pleasures would be found. While, therefore, congratulations over happiness are the business of a man ignorant of human nature: still less does a man

need to be condoled with over sorrow, because there is one end to us all. And although contempt of money would be foolish, and in these times (if ever) hard, nevertheless even for money to condemn God would be a great deal worse. Therefore your grandfather Fazio imposed upon me two main precepts: one, daily to remember God and think of his vast bounty and of all his benefits; the other, to be thoroughly intent on anything I did while I was doing it.

“As for the Uses of Adversity, they teach you these things:—First, never to be angry. Anger impedes the mind, and hinders it from seeing truth. There is grief in anger, and it corrupts the habit of the body, making a man in face and manner like a lunatic. Therefore when Aristotle was asked what anger was, he replied, A temporary madness. Do not be a liar: that is not only commanded by Scripture and philosophy, but the liar suffers this loss, that his truth is not afterwards believed. Do not live in idleness, but study perpetually, mindful of the saying of the holy man: When the mind is idle, evil thoughts come into it, as weeds and snakes abound in the uncultivated field. Do not indulge in games of chance: it is written, Fly from the dice; gamblers of all kinds used to be infamous. You lose time, the dearest of things, and estimation: you lose also your money. Never believe that your fortune will change for the better if you do not free

your mind and body from impediment: you cannot set your body free until you free your mind from vice, and shall adorn yourself with virtues. Believe me, we must all begin with that, for even usurers and highway robbers get the happiness they have from virtue—usurers from carefulness and prudence, robbers from fortitude. With these virtues there are vices mixed by which they are made hateful in the sight of God, and of the law, and of all honest men. But if in such men any good that they have springs out of good, that is, depends upon some virtue, how much more is it the case in others!

“Do not envy those, my son, who have become rich or powerful through evil deeds, and are attired in gold and silk. The far more opulent empire of the Romans and the kings of Persia God has destroyed, with many other princes, so that of all those mighty forests not a twig remains. But on account of the justice of Abraham, and because he pleased Him, out of the one twig Isaac many forests have sprung that remain still, and very many more would have remained, and they would have been greater and more flourishing, if impiety against Christ had not hindered. The shadow of God’s finger glides over the whole surface of the world.

“Keep your mind sedate, and manage thus your affairs. Do not lie down too late; for our race is of a warm temperament, and somewhat subject to stone. Sleep for nine

hours. Rise in the first hour of the day, and visit the sick, silent with all, and saying nothing that does not concern the case before you. Do not exert yourself so as to become heated, certainly not so as to perspire. Set out by help of a horse, and return on foot. When you have returned put on a warmer garment. Breakfast on bread and a little meat or dried fish. Drink very little. After breakfast, if your engagements let you, study for four hours: studies delight a man, obliterate his cares, prepare for him renown, adorn his mind, and help him to perform his duty in his calling. Then visit patients again, as before: but before supper" (Cardan used and advised only two meals daily, and we may call his early supper a late dinner, if we please), "ride and visit groves, copses, and pleasant places, walking or riding in the suburbs of the town. If at any time you become wet with rain or perspiration, when you return home you have only to see that you have a change of linen dry and warm, and hang up your wet clothes near the fire. Sup your fill. Retire to bed ten hours before the first hour of the day, your hour of rising. When the shortness of the nights makes that impossible, supply the deficiency of bed-time by a sleep at noon.

"From seven things abstain wholly: from summer fruits, from black wine, from vain and copious speech, from falsehood, from gambling, and do not reveal any

secret to a woman, or indulge her more than is proper. For a woman is a foolish animal, and therefore full of fraud: if you bestow over much endearment on her, you cannot be happy, she will drag you into mischief.

“Avoid as much as you can bleeding and purging.

“You have the book on Consolation, you shall receive also the book on Water and *Æther*, and, after a time, also that on the Uses of Adversity.

“Derive instruction from admitted error, live frugally, be content with a famulus and a horse, do without a nurse: for Phocion who ruled Athens had even a smaller family. Be moderately flattering towards all, and give your mind to study. Now enough of this, since it has all been specially set forth by me in the volumes named, as well as in the books on Wisdom and some others. Above all things, never dwell on empty promises or empty hopes. Consider that you possess only what is in your hand, and reckon only on your actual possessions. Farewell.

“I would have sent you also the little book of Precepts, but my copy of it is too much engaged.

“September the Fifth.”

Upon the many little illustrations of Cardan's daily life and of his character contained in the preceding letter, it would be superfluous to dwell. The son of course gladly became indebted to his father's overflowing love, and we

must not censure Jerome too severely, if his love exceeded his discretion. By crippling his own means, he further hurt the prospects of the English boy, then a fine youth, full of affection, whom he called tenderly his Guglielmina, and who had been with him six years to little purpose. The troubled physician said that he was ashamed in the sixth year to send him away untaught and unremunerated for his loss of time, but he could spare nothing, he said, "on account of the many expenses into which I at that time was plunged by my sons¹." He had loved them both, but he had been incompetent to educate them properly, and they had too soon lost their mother. They were, indeed, partly his own sins that were being punished in him through his children.

The intention to seek office again mentioned by Cardan in his letter to his son resulted in his return, four months afterwards, at the beginning of the next year, to the University of Pavia. A professorship was again accepted, the offer of which had been obtained through the good offices of his friends the Cardinals Alciati and Borromeo.

Cardan then sought to provide for the boy William, whom he had held bound to him by daily kindness, while he dared not send him home, and could not afford to establish him in life. He resolved to put him into busi-

¹ For this and the following, see preface to the *Dialogue de Morte*.

ness, and proposed that he should either learn a trade, or learn to read and write, or sing and play, either of which he could have done easily, for he already could read a little, and sing reasonably well. Jerome undertook to provide for him, if he chose to study, maintenance in the house, with proper clothing. William chose to be taught a trade, and Cardan, when they went to Pavia, had in his mind shoemaking, as a business that would be tolerably light, and not too mean.

Just before quitting Milan, Jerome having resumed, according to his promise, his old kindness towards his son, had given him a new silk gown of the kind usually worn by physicians. On a Sunday, Gianbatista having put it on, went out beyond the Porta Tosa. "There was a butcher there," says the philosopher¹, "and as usual outside that gate there were pigs. One of them rose up out of the mud, and so defiled my son by wild running against him, that not only his servant, but the butchers and neighbours had to run out with weapons and drive off the pig, so that the thing seemed to be a prodigy. When the animal was at last half wearied, and my son ran away, it left him. On account of that occurrence he came back to me sorrowful beyond his wont, and told me all, and asked me what it might portend to him? I answered, that he should take

¹ De Vitâ Propriâ, cap. xxxvi.

care lest, by leading a hog's life, he came to a hog's end. And yet except a love of dice and of good eating he was an excellent young man, and of unblemished life."

The father went to Pavia. The son remained in Milan, and by him unhappily this narrative must for a time abide. Before proceeding further, however, two or three political changes in the Milanese world, that will have an important influence upon the future course of Cardan's life, must now be chronicled. In the year 1557, on the 15th of November, Ferrante Gonzaga, Prince of Molfetta, and Signor di Guastalla, governor of Milan, died in Brussels. He had been no bad friend to Jerome, though he was but a hard soldier, who believed that the simplest elements of knowledge were as much as a prince needed, and had been persuaded with some difficulty to permit the education of his children. As often happens in such cases, the ignorant parent left a daughter Ippolita, who became noted for her genius and her learning, and a son who was a lover of letters, and of whom it may be said incidentally that he was friendly enough towards Cardan to be made the object of a dedication. Don Ferrante being dead, one or two great Spaniards had brief and temporary sway in Milan until King Philip, in March of the succeeding year, sent a new governor in the person of Gonsalvo Ferrante di Cordova, Duke of Sessa. He was another military chief, a bold man, able to hold the town against all comers.

In Milan, the most eminent among the doctors naturally became his physician, and, indeed, after he had gone to Pavia, Jerome was summoned back to prescribe for this duke, on which occasion he received as his fee a hundred gold crowns and a piece of silk.

Another of Jerome's friends, his first Milanese patron, Fillippo Archinto, who had finally become Archbishop of Milan, died in June, 1558, after two years of absence from the see. His place was taken for a time by Ippolito II. d'Este. On the 18th of August in the same year Pope Paul IV. died dropsical, and was succeeded by the Cardinal de' Medici, who took the name of Pius IV. This pope was a Milanese, and very kind to his own town and to his townsmen. It happened also that the Churchmen who had most influence with him were Cardan's friends, Morone and Borromeo, the last a young man of immense wealth and influence, moreover nephew to his holiness. At the end of the year 1560, Cardinal Ippolito resigning, Borromeo was appointed Archbishop of Milan, but he did not repair directly to his see; he remained at Rome, acting as secretary of state to his uncle, and it was not until the 23rd of September, 1565, that at the age of twenty-six he celebrated the assumption of his episcopal functions at Milan with a pompous entry. Carlo Borromeo was not only an archbishop, but, by his munificence and other good qualities, attained also permanent rank in the

Church as a saint. It was well for the fortunes of the sinner Cardan that he had a firm friend in Saint Carlo Borromeo. Of that great man I trust that I shall say enough if I sum up his character in the words of a Frenchman who wrote in the succeeding century:—"It may be said of Saint Carlo Borromeo that he was an abridgment of all the bishops given by the Lord to his Church in the preceding ages; and that in him were collected all the episcopal virtues that had been distributed among them¹."

Gianbatista Cardan had grown up from a miserable childhood. "He felt," his father said², "all my adversities, and little of my success." He was born, as it may be remembered, at Gallarate when his parents were extremely poor, and he was at first entrusted to a good nurse. But that nurse had a jealous husband, who compelled her to desert her charge. Then, because Jerome and Lucia,

¹ Antoine Godeau—"Eloges des Eveques qui dans tous les siecles de l'Eglise ont fleury en doctrine et en sainteté." Paris, 1665. Eloge 98. Quoted through Count Verri's *Storia di Milano*. I should here acknowledge myself to be indebted now and then to Verri's History for information upon the affairs of Milan.

² The succeeding narrative is drawn chiefly from two sources: 1. The last chapter of the work on the Uses of Adversity, entitled *De Luctu*, written just after the events, and a fair statement of facts. 2. Cardan's defence of his son before the senate, written in the midst of the trouble, and of course a one-sided version of the case. The defence was appended to the first edition of "The Uses of Adversity," paged continuously. The narrative here given is based throughout on the chapter *De Luctu*, and authority will, therefore, be cited only for interpolated incidents.

on account of poverty, found few who cared to accept their hiring, the infant fell next into the hands of a dissolute woman, by whom it was fed sparingly with old milk, and more freely with chewed bread. In its third or fourth year it had a tumid belly, and was seized with a fever, from which it recovered with much difficulty. After his recovery he was found to be deaf on the right side, in consequence of a discharge that had, during his illness, broken through that ear. As Jerome's affairs mended, his son came to be better nourished, and received abundant education. He became in a manner learned, and was especially a good musician, both playing on the lyre and singing to the cymbals. At the age of twenty-two, having failed previously, he obtained his doctorate, and two years afterwards succeeded in obtaining his enrolment among the members of the Milanese College of Physicians. He lived with his father, who took pains to introduce him into practice.

Personally, he had grown up into much resemblance to his grandfather Fazio. He had the same small, white, restless eyes, and a fair skin. He had large, broad features, and a big, round forehead, foxy hair, and a beard that came late, for it had only begun to form a reddish down upon his face in the year at which we now arrive. He was small of stature, even somewhat smaller than his father, who was a man of but a woman's height. He had more

than his grandfather's round shoulders, for there was a hump on his back that amounted to a positive deformity. It has been already said that he was born with the third and fourth toes of the right foot joined together, "a defect," notes Cardan, "of evil augury, which, if I had observed it in time, I should have removed at once by a division of the digits."

Though this young man was usually moderate in speech, yet he was wonderfully voluble when he became excited, and then poured out such a torrent of words that he seemed to be a madman. That fault helped him to his fate. He was wanting, too, in common sense, and Jerome, fearing that he might fall into mischief through his hot temper and his simplicity, was very desirous that he should be allied in good time to some prudent woman. The father, therefore, had taken much pains to persuade the son into thoughts of marriage, and suggested to him many noble maidens among whom he might make his choice. To all such urging the young doctor answered, that in the first place it was requisite for him to devote his whole time to the perfecting of himself in his profession, and in the second place he wished to know how he could bring a bride to live in his father's house among the young men who were his father's pupils and attendants. When there were no young men to be her house companions it would be time enough for him to bring his wife. Besides, he

really had paid court to some young ladies, who objected against his deformity. In all this Jerome willingly saw reason; yet there was nothing in it but deceit.

In the mean time, the beloved son spent freely his father's money, kept his own horse and his own famulus, indulged in the luxuries of life and in its lusts. Three centuries ago, in Italy, and in a part of Italy familiar with the license of the camp, morality as between man and woman was extremely low. I leave the reader to take this one fact for granted. Jerome himself was not only prone, but, even beyond the age of seventy, prompt to lust, and I do not find that in those days even archbishops lived more purely than their neighbours.

One day, when Cardan and his household were at breakfast, a person came in to them who said that Gianbatista was intending to go out that morning and get married.

"Marry whom?" Jerome inquired. The person did not know.

Then Cardan, turning to his son, said, "Why did you wish to conceal this from me?" It occurred to him to remember four damsels, two of whom he knew that his son loved, and all good matches, therefore he said to the youth, naming them, "If it be one of those four, take which of them you will. If any other lady is to come into the house, I beg that you will first

tell me who she is." He had before often warned him not to be too precipitate, or take a wife without his father's knowledge. He could not afford to marry into poverty, it would be better than that if he should bring home a woman without marrying her to be the mother of his children. Grandchildren Cardan ardently desired "I desired," he says, "to receive grandchildren from him, thinking that as he was a copy of my father, his children might perhaps be copies of myself."

In reply to the betrayer of his counsel, Gianbatista simply denied all knowledge of any impending nuptials, and said that he was as much astonished as his father at the news. On that day nothing was done, and nothing on the next. Then came St. Thomas's day, the day in December on which Brandonia Seroni was brought home as Gianbatista's wife, in the manner described at the beginning of this chapter.

The youth might have looked far before he could have met with a less eligible person. She presented him with herself and her lost character, and brought upon him at the same time the burden of maintaining three unmarried sisters and a mother. She had three brothers—common foot soldiers—ignorant of any trade, not bad fellows, but rough, and wild, and poor. The family to which she belonged was not originally poor, it was a wreck made by her father Evangelista, who was a ruined spendthrift,

and had lost all his possessions or the use of them. The woods mentioned by Cardan in his letter to his son were probably some fragments of the lost estate that had been alienated only for a term of years.

Jerome, as we have seen, refused to admit the bride into his house, or to take upon himself the support of the Seroni family, and for nine months Gianbatista lived upon what he could earn, or by the sale of superfluous possessions. He was unable to clothe properly himself or his wife, and even after his father had taken pity upon their state, and supplied liberal means, they were still pinched by want. The young physician went on foot about the streets of Milan, wearing his summer clothes for want of others in the winter weather¹. Gianbatista had no prudence, and his wife was represented by a hungry family of idlers. Even the wedding-ring that Jerome had given to his son—Lucia's perhaps—Brandonia gave secretly to her father with a piece of silk that he might pledge them to raise money for himself. Husband and wife lived thus together for about two years, quarrelling daily, and helped stoutly in their quarrelling by the wife's mother. The soldier brothers-in-law also plunged into the domestic war, and one of them once went to bully Jerome, and so get more money for his

¹ "Defensio Joan. Baptistæ Cardani, filii mei; per Hier. Card. Med. Mediol." Passages in the same document contain the facts stated in the next five sentences.

sister. Against him appeal was made to the authorities. A daughter was born, and as her father was named after John the Baptist, she was named after the Queen of Heaven, Diaregina. Next there was a son born, soon after Jerome went to Pavia. At that time the troubles of the wretched family were at the worst, and Gianbatista bought some arsenic. He even made a faint attempt to kill Brandonia by mixing some of it with her food, but that failing, he relented. Thereafter, whenever he became enraged—they quarrelled daily—he resolved to kill her, and relented as he cooled.

Before the birth of their second child—a son, called Fazio¹—Brandonia was ill, and after his birth her health was very feeble, though she was strong enough to scold her husband. The infant had not been born many days when, in the course of a great quarrel, she told Gianbatista that neither the infant nor the girl Diaregina were his children. Her mother backed the assertion vehemently, and the two women not only repeated it, but named other men who were their fathers.

Then Gianbatista went to his famulus, a youth who was his partisan in the domestic war, and with whom he had plotted mischief. He promised him money and clothes, gave him the poison, and told him to put it into a certain cake which was to be made, and which his wife would eat.

¹ Paralipomenon, Lib. iii. cap. 17. "... Nepos meus ex filio Facius. . . ."

The day before the crime was committed he redeemed his father-in-law's pledges, and took not a part only, but the whole of his wife's family into the house to live with him¹.

For a few minutes we must change the scene to Pavia, where Jerome was happily established in his professorship with a salary of six hundred gold crowns, clipped money indeed², but the payment of congenial labour that at the same time did not withdraw him wholly from his practice as a popular physician. He had just resumed his lectures, and if he was tempted into formal disputation he was quite able to silence an antagonist. So he overwhelmed at Pavia Branda Porro³, who omitted the word "not" from a citation. He was accused mildly but firmly of his error by Cardan, who adhered to the accusation, "at the same time expectorating freely," he says, "as was my wont." Branda, who scorned the imputation of having made so vital a mistake, called for the book from which he had been quoting, and out of that he was convicted and defeated.

Now it happened that seven days before the commission of the crime in Milan, Jerome's younger son, who was at

¹ Def. Filii mei, for the last sentence.

² Ibid.

³ De Vitâ Propriâ, cap. xii. for this incident. The next resumes the story from the chapter De Luctu.

Pavia with him, became restless, and determined to depart. Whether he was in any way privy to the designs of his brother it is hard to say, but he contrived fairly to incur suspicion. Cardan objected wholly to the youth's departure, and when he found that he could not persuade him to remain at home, being unwilling to use force, he consulted the stars, and discovered that his son would be imprisoned, and was threatened with grave harm. Interpreting that omen as having reference to Aldo, he then warned him privately of his discovery. When that warning proved to be of no avail, he said to him, in the presence of the entire household, that if he went he would be wanting to return when he would not have power to do so. It was then vacation-time, and Jerome could have travelled with this son to Milan. He was really on the point of doing so as a relief to his anxiety. If he had done so, his whole life might have ended differently, he might have been in time to snatch his other son from the abyss of crime into which he was about to leap. The fates, he says, kept him at Pavia.

Aldo had come into his brother's house. The cake was made, and a piece of it was given to the sick wife, whose infant was but a few days old. She vomited at once. The mother-in-law took some of it with a like effect. Gianbatista thought, as he alleged afterwards, that the poison had not been used, partly because his sister's hus-

band had been at the house, and, noticing the cake when it was in making, bade them see that it was large because he too should eat some of it. Whether he really thought so matters little to the actual offence, but if he did not think it, possibly he meant more mischief than he perfectly achieved, for he offered the cake to his father-in-law, and then also took a piece himself. They, too, were sick, and the criminal himself was for a few days unable to go about. One of the soldier brothers entering the house soon after the cake was eaten, found his father, and mother, and his sister violently sick. Instantly suspecting them to have been poisoned by the Cardans, he drew his sword, and in a fury rushed forward to kill both Gianbatista and his brother Aldo¹. They were perfectly defenceless, and by no means of warlike nature. The soldier's fury, however, overcame him. He fell down in a fit before he had completed his design, and it was some hours before he again came to be master of his actions.

The old people recovered, but the weak Brandonia had received a fatal dose. Doctors declared that she was dying of a fever called by them *lipyria*, which she had had before the child was born. She was of broken constitution. Jerome himself, before he left Milan, had cured her of a disease implying taint of blood. While the poisoned woman was still lingering in life, her mother

¹ Def. Filii mei.

one day set up a fierce quarrel with the nurse who attended at the bedside. The mother ran at the nurse to box her ears, the nurse endeavoured to avoid the blow by scrambling over the sick bed, and in so doing fell with her whole weight upon the patient. When the fight was at an end, Brandonia was dead¹. The day was the 14th of February, 1560. On the day following, Gianbatista, Aldo, and the famulus were seized².

Again the scene has to be changed to Pavia. One day, in the month of February, chancing to look into his right hand, Cardan observed a mark at the root of his ring finger like a bloody sword³. He trembled suddenly. What more? That evening, it was on a Saturday, a person came to him with letters from his daughter's husband telling him that his son was in prison, that he must come at once to Milan. Lines upon hands differ of course; but whoever looks into his own probably will see that straight lines run down from the roots of each of the two middle fingers, and it is likely that one of them may have a short line

¹ Hier. Card. Medic. Mediol. Responsio ad Criminationem D. Evangelistæ Seroni (appended also to *De Ut. ex Adv. Cap.*), p. 1145.

² *De Vitâ Propriâ*, cap. xxvii. Where the date is said to be the 26th of February. The correction in the text is from an incidental statement in Cardan's defence of his son that the eleventh day before Brandonia's confinement was the 25th of January. This was said when the facts were recent, and leads to the true date of the murder; one that harmonises with all other portions of the story.

³ *Ibid.* cap. xxxvii.

crossing it in the place necessary to suggest a sword hilt. The blood implies no more than redness of the line, and it is not hard to understand how, as the case went on, while he was working for his son in Milan, Jerome's excited fancy traced the growth of the sword upward along his finger. On the Sunday morning after he received the message, since night travelling was hardly possible, Cardan hastened to Milan. There he learned from his daughter and his daughter's husband the extent of the calamity that had brought shame and ruin on his house. It was not for him then to stand aloof, or have regard for reputation. The glory and hope of his life were gone; he cared no more for his credit in the town; he was a father, nothing else, sixty years old and grey-headed, with no object before him but the rescue of his son. He threw the whole of his personal influence and reputation at the feet of his child. A physician, high in reputation, could not safely lavish love and time and money on a murderer. Cardan was to be seen labouring night and day for a villain whom few men thought worthy of compassion, and not content with hired and formal advocacy, standing up with all his wretchedness in open court to plead for him, eager to ensure to him the use of all good and bad arguments that wit could devise in extenuation of his villany, cleaving to him as his son, and making common cause with him; he could not be seen

doing that and remain in the world's eye the great man that he had been.

But he did not go to the prison. He did not visit the offender¹. His heart reproached him with the memory of his own wrong training of his children, the gamblers and the singing people by whose presence he had suffered them to be defiled. In the midst of such grief Gianbatista lay so callous in his cell that he could mock the old man's heart by sending a special message with a request that he would be bail for him in ten thousand gold crowns, in order that he might go out of his prison for two hours to see a show. There was to be a sham fight under the castle, and he had a great desire to see it. His father, therefore, who was not worth two thousand gold crowns, was to be bail for him in ten, that he might not miss the spectacle². He was a simpleton, said Jerome, always well-disposed, and learned, but his simplicity of character had been his ruin.

At his first examination Gianbatista kept his counsel, and Cardan was not without hope that he had escaped actual bloodguiltiness. Vincenzo Dinaldo, who had attended his son's wife, said that she died of lipyria³.

¹ The chapter De Luctu.

² Defensio J. B. C. filii mei.

³ Responsio ad Crim. D. Evang. Seron.; and, for what follows, the Defence, where it is implied that the physicians all gave evidence at the trial. See also the chapter De Luctu.

Five physicians declared that she had not died of poison, for the signs of it were wanting on the tongue, and about the extremities ; her body was not black, her belly was not tumid, neither her hair nor her nails had fallen off, and there was internally no erosion. Against that conclusion people set the facts in evidence and the circumstance that the accused was a member of the College of Physicians, of which the respectability would be in some degree tainted by his conviction. Evangelista Seroni and the three brothers of the deceased were also the bitterest of prosecutors.

One day when Gianbatista had been imprisoned for about three weeks, during which Jerome had been straining all energies on his behalf, the old man was studying in the library of some friends with whom he was then staying in Milan, the Palavicini, and while he was so sitting there sounded in his ear some tones as of the voice of a priest consoling wretched men who are upon the verge of death. "My heart was opened," he says¹, "torn asunder, broken. I leapt wildly out into the court-yard where some of my friends stood, well knowing how much hope there was for my son's rescue if he had not pleaded guilty to the crime, or if he was really innocent. 'Woe is me,' I cried, 'for he is guilty of his wife's death, and now he has confessed it and will be condemned and fall under the

¹ De Vitâ Propriâ, cap. xxxvii. for this incident.

axe!' At once receiving my cloak, I went out to the market-square. When I was nearly half-way there, I met my daughter's husband looking sorrowful, who said, 'Whither do you go?' I replied, 'I doubt whether my son, conscious of the deed, has not made full confession. Then he replied, 'It is so. It has lately happened.' A messenger whom I had sent then ran to me and told me all."

Gianbatista, who had at first maintained reserve, was unable to restrain himself during a subsequent examination, when he heard the evasions of his famulus. That youth declared that he had received the powder from his master, understanding that it was to be given to Brandonia for the purpose of increasing her milk, because she was ill able to suckle the infant. When presently the person was introduced of whom the poison had been bought, the criminal confessed freely all of which he was accused, and even more. For he said that he had held the deed two months in contemplation, and that it had been twice before attempted¹.

¹ De Luctu.

CHAPTER IX.

THE FATHER IN THE DEPTH OF HIS DISTRESS.

BEFORE the Milanese Senate and its President Rigone¹ the formal trial of Gianbatista shortly afterwards came on. The administration of the poison not being denied, the pleading for the defendant could be directed only towards the mitigation of punishment. Sixty-four pleas in mitigation were devised in his behalf².

The accusation against Aldo had not been maintained, but against Gianbatista the proofs apart from his own confession were convincing. Cross-examination showed the existence of such provocation as has been already detailed, and Evangelista declined to aver that his daughter's character was unstained when she married. The case against the character of the dead woman was not, however, closely pressed. Physicians testified, on behalf of the defendant, that poison had not caused Brandonia's death.

¹ De Vitâ Propriâ, cap. xlii.

² Respons. in Crim. Evang. Seroni, *ad fin.*

The feeling of the President Rigone was strongly against the criminal. Jerome hoped for merciful intervention from the governor, who was his patient¹, and for help from the great men who were his patients and his friends ; it is, however, natural that they should have felt unable to extend any of their friendly feeling to his son. It is not easy or desirable to mitigate the universal detestation due to a man who can poison his wife while she has a ten-day infant at her breast. For Jerome, the miserable father, we may feel true sympathy ; for Gianbatista none. Jerome himself, though he struggled painfully on his behalf, only excused the offence when he stood up formally to be the young man's advocate. The physicians said, and he believed, that his son's wife had not died of poison ; since, therefore, many a foul crime had by help of interest been favoured with a lenient sentence, Cardan, having as fair a right as any man to favour, thought himself entitled to expect, not that his son would be acquitted, but that he would be condemned simply to exile. To condemn him to the galleys would be cruelty, he thought ; to kill him would be murder.

Through all his after sorrows Jerome Cardan never wrote angrily of the Seroni family. He was not really the apologist of crime. Standing before the senate in the character of advocate, to plead for the life of his son, he

¹ Evidence of this will appear fully in the sequel.

was there to urge all that an advocate could say, not to express his individual opinions. He had exerted all the wit of which he was master and all his powers of disputation—such powers as he had spent once for sport on an encomium of Nero—in the manufacture of a formal and elaborate defence. It was not for him to consider what arguments he himself thought tenable, but what arguments might by any chance weigh upon any person who had a voice in his son's fate. He understood the casuistry of the schools, and practised it. His speech for his son, of which an outline is here given, contains much strange folly that the world has now outgrown. How completely the puerilities of the old logicians were a part of their own sober and earnest life, how little they saw what was absurd in their established way of arguing, may be gathered even from the brief outline of this speech, in which a scholar of the sixteenth century, although a man of quick wit and strong feeling, handled a question of the very gravest moment to himself.

Seven things, he said¹, were to be considered in the case: public example, the deed, the instrument, the cause of the deed, the mode of doing, the person, and external circumstances. He arranged his argument under these heads.

¹ What follows is a reduced outline of Cardan's speech for his son, published at the end of the first edition *De Ut. ex Adv. Cap.* (Basil, 1561), where it fills forty pages.

Having stated briefly the occasion of his son's crime, and pointed out the special provocation that consisted in the shamelessness of a wife, who not only was unfaithful, but who boasted to her husband of her faithlessness; and, having cited examples of men who were pardoned for destroying their detected wives, he proceeded to urge that those learned men were wrong who state that to kill by poison is a worse crime than to kill by steel, because the deed is more traitorous, and the chance of escape that it gives is less. More men, he said, had been slain by the sword than by poison. Crime so perpetrated caused less scandal; and, therefore, the public example was less dangerous. He quoted Plato's *Phædo*, in which poison is said to have required two or three separate administrations, even when no antidote was used. He cited authorities to prove the superior dignity and respectability of poison as an instrument of death. It was said of poisoning, that it should be repressed by additional severity, because it was a crime easy to perpetrate, hard to detect. Was that a just ground for severer punishment? Martianus taught, that small thefts by domestics were not to be brought at all to public trial; yet of all offences they were the easiest; why were not they punished the most severely? Then, again, what was the offence punished? A contempt of law. If no law was offended, why was the man imprisoned? But is not open contempt of law

by the sword worse than the tacit respect for the law implied by the poisoner when he endeavours to deceive it? There is no petulance in the act of poisoning. He who kills by poison, kills from some necessity. He who kills by the sword, kills through anger, ambition, or licentiousness, and means to kill. He who uses poison, swaying between anger and just grief, means and means not to kill, and, in the end, leaves the result very much to chance. Of fifty that are poisoned, only one may die. He who drinks poison, need not drink; he who is stabbed, has the knife thrust upon him, whether he will or not. But it is urged that poison is more certain of its victim than the sword. Not so, argued the casuist. It is necessary of poison that the dose be fatal, that it be all taken, that remedies be absent or be neglected, and that the taker trust a person whom he has capitally injured. Does he die, then, through a trust betrayed? Say rather, that he is punished for his rash and impious confidence. But poisoners in the eye of the law, were not they who gave, but who killed by poison. The old Cornelian law, too, instituted among such criminals a rule of dignity. The common people were given to wild beasts; persons of higher grade were exiled. "Therefore," the father said, "my son, graduate in medicine and member of the college, and the son of a graduate and member, at the same time the grandson of a jurisconsult and member of

the college, and the descendant of a noble race, even if he were guilty, if he did this deed without a cause, if he were not a youth, if he were not so simple-minded as he is, ought not to incur the ordinary penalty, but only to be exiled."

Concerning the deed the pleader argued that murder by poison had not been committed, and therein he urged what he then and afterwards believed to be the truth. Brandonia died, he said, from natural causes. Her physicians stated that from the beginning of the fever under which she had been labouring she had coldness of the extremities and shivering fits, and four or five most competent physicians, deputed by the senate to investigate, reported that no signs of poison had existed either before or after death, either without the body or within it. But people do not die of poison without showing symptoms of it; if they do, why are investigations entered into and decisions based upon them?—why are bodies inspected? Again, urging the evidence of the physicians, Cardan quoted to the senate the opinion of Galen on the ease with which it was possible to diagnose cases of poisoning. Besides, he added, there can be no wonder that in this case traces of poisoning did not exist, the quantity of arsenic administered being so small. Only an ounce was used, divided into three parts, of which the deceased took only one, and that she vomited. "It would require," he

said, "twenty times the dose she took to kill a man. If it be vomited scarcely a pound of arsenic will kill, as may be seen in the mountebanks who devour daily a great deal of it, and suffer scarcely at all¹. An ounce will not kill a dog, because he vomits it."

From these statements we must infer that the general term arsenic was applied, as Dioscorides applied it, to the yellow sulphuret which we call orpiment. This contains much free arsenious acid, and is a decided poison, but is much less active than white arsenic, of which a few grains kill. Even of white arsenic, however, horses have been known to take fabulous quantities without fatal result, and there are cases of human recovery from half-ounce doses taken upon a full stomach and speedily rejected. In the case of Brandonia, vomiting was speedy, and as it was not, according to the medical jurisprudence of the day, possible to detect traces of the poison, Cardan was not without grounds for believing that the deceased had not been actually murdered.

Again, Jerome pleaded that it was not proven that the poison in the cake taken was put there by his son's wish. He himself denied that it was; he was at that time repenting of his purpose. "That, too," he went on to

¹ "Si evomatur vix una libra arsenici interficit hominem, sicut apparet circulatoribus qui magnam quantitatem ejus devorant quotidie et nihil penitus læduntur." Op. cit. p. 1117

urge, "is clear from the reasons which my son has adduced, for he said, if I had known of the poison I should not have given the cake to others, should have eaten none myself: and also when I heard that I was detected I should have taken flight, especially as I was advised by many so to do. But I was innocent and ignorant of this deed, and, as I said, already penitent. My servant did it, in the hope, I think, of reward." Having cited this statement (which it must be owned was not worth much), Cardan returned to the medical evidence, and laid stress on the testimony of three physicians who had visited the deceased when living, and who all agreed that she died of natural disease. One of the three, a man of no common erudition, named the disease, and said that it was a fever called *lipyria*. Having spoken further upon that head, and again adduced the authority of Galen, Cardan next urged the fact that the other persons who had eaten of the cake recovered after a day or two from its effects.

A witness said that arsenic was given to the deceased on the tenth day after her confinement, and then, not succeeding in its purpose, was again administered. By reference to the apothecary's books, it was to be seen that she had been ill from the eleventh day before her confinement; that is to say, from the 25th of January till her death.

It might be suggested that the poison, which was not enough to kill a healthy person, was sufficient to destroy a woman who was without it dangerously ill. If there were only the doubt, said Jerome, it should be decided on the side of clemency. But there was not doubt. Poison that in its operation resembles the disease would hasten a sick person's death, even though not given in a dose poisonous by itself. If it should prove to have a contrary operation, it would prolong life. So the common people use the flesh of vipers against elephantiasis, euphorbium against palsy. But arsenic or white orpiment¹ is warm and dry, since, therefore, lipyria is cold and moist, such poison would in this case rather be a benefit than a hurt; its effect would in fact be to prolong life, not to destroy it. It is therefore clear that neither did the poison alone in this case cause the death, nor was it, as the physicians say, a concomitant cause.

Having pleaded on his son's behalf so far according to scholastic forms, the anxious advocate proceeded to discuss the argument from other points of view. He turned next to the mood in which the attempt was made, the animus of the accused criminal. It was asserted that he killed deliberately and with malice aforethought. The accused himself made confession that he renewed and dropped the idea as he and his wife alternately quarrelled and made

¹ "Arsenicum seu auripigmentum album." Op. cit. p. 1119.

peace. But why speak of deliberation? A man with an unfaithful wife, a man who is in constant grief, cannot deliberate. His mind is never calm enough for the use of such a faculty. Gianbatista also, as it was proved, had begged Brandonia's father to take her away from him, lest harm might happen. Had he deliberated murder would he have wished for the removal of his victim? He urged it again after she had spoken those shameless words. If she had not spoken those words, no crime would have been attempted. "The youth," said Jerome, "acted simply. Out of his simplicity he has confessed the whole truth, without torture, without threats. We have shown, by witnesses produced, that he is a young man of the simplest character; this fact is most notorious. If any of you have known him, such persons will know that I do not lie. Ask even his accusers. If I lie upon a matter that is very manifest, can I ask you to credit me on doubtful points? By simplicity he was led to take a wife without a dowry, by his wife's relatives he was drawn into hostility towards me; he has been guilty of innumerable errors, but of no crime. His nature is the better for its simpleness. He swears in confession as if criminal judges would put faith in him as a wife in her husband, a parent in his child. By that you may be sure that he tells truth to you, though, indeed, you are not bound to believe him."

Turning next to the cause of the offence, the scholar dwelt upon the Roman laws concerning murder following the provocation given by unfaithful wives. He urged that an act of disloyalty unblushingly confessed was greater provocation than an act detected, because the latter might be excused in a variety of ways, "as is shown by Boccaccio." What could be greater horror then, than to hear mother declaring before daughter, and daughter before mother, a dishonour that they were determined should not pass unknown and unconfirmed. The laws provide for no such case of provocation, because it was never contemplated. Many wives are unfaithful, but they respect themselves, their husbands, and their children, so that even though they should be killed by a just wrath, they leave the reputation of their house preserved, they do not blast the prospects of their children; but this woman cut off from them all hope. Upon this subject Cardan dwelt with emphasis and with keen feeling. He had himself suffered in boyhood from the reproach attaching to his birth, and moreover the desire of his old age was to live again in grandchildren, to found again his family, but upon all such hopes Brandonia's confession rested like a curse. Stung to the quick by this view of the subject, he exclaimed:—"If Brandonia had been my own daughter and Gianbatista but my son-in-law, and if it had been proved, as it is proved by two witnesses, that

Brandonia had made such a proclamation, and that my son-in-law had poisoned her, though he had prepared the poison a whole year before, I swear by the Throne in Heaven that if he bade me to supper the day afterwards I would go in to him. For what can be more vile? What punishment can be too great for her who violates the rights of her own offspring." Immediately Jerome turned, however, from that strain of anger to allude to letters in Brandonia's hand, and witnesses that had been produced testifying that her parents were the cause of all her sorrows; "she, perhaps, did not sin of her own will, and did not merit so much misery."

"But we are asked," he said, "to produce the evidences of her guilt. Too much is known. The times are known and the persons; they are known to the senate, if it will recognise such common knowledge. We know more than we should. We know the panders and the procuresses, and the entire shame. I would that we knew nothing. It is worse for us, perhaps, known than unknown, the youth may deserve to be condemned."

The advocate then turned to arguments for mercy. Gianpietro di Meda, who upon mere suspicion of unfaithfulness destroyed his wife with twenty-five wounds, had been acquitted by the senate that was trying Cardan's son. The son of the rich Gianpietro Solario, for the sake of wealth, had attempted to poison his father, his

three sisters, and his nurse, but at the intercession of his father, who had promised to take care of him, he escaped punishment.

A father was excused by the law for the slaying of his daughter. This was a like case. For why was the father held excused? Because his love could be relied upon. And what love had not Gianbatista shown towards his wife, when he had married her dowerless, and it was proved even from the lips of hostile witnesses, that he abandoned for her sake wealthy maidens, any one of whom he might have married? How long and patiently he lived with her in misery, and was prepared to live not only in misery, but even shame, pointed at by his neighbours! And as it was, had he gone on enduring, he must have been deprived of the honours of the college, shut out from all decent intercourse, deprived of all that usually is taken from the infamous. After such degradations, might he not himself have been killed, if not by his wife, by one of her paramours? If he had gone to the judges for a remedy, how much laughter would have been excited, how much hate among relations, public talk, and private irritation! If he had sent her away, he incurred peril more manifest and imminent. While they were sitting there, a man in the town was dying of the wounds inflicted, because he had put his wife away. But he might have killed her by stabbing. That was the point

upon which most people insisted. How so? He was a peaceful doctor who had never carried arms; she had three brothers, soldiers, already privately given to practices which were against the law, but "which," said Jerome, "I pass over, because I am not here to accuse them, but to defend my son. They are known once to have secretly threatened me for not doing what I could not afford to do for the support of their dowerless sister, and that fact may be seen in the public records. It is on record also, that one of the brothers, Sforza, threatened my son in my presence. In my absence, what might they not do? What law, then, can be so Scythian, as to urge men whether they act, or do not act, to death and infamy?" Moreover, he observed, that poison was an agent which it was more honourable to use, since it respected the woman's family, and removed from them the occasion for an open scandal.

He further entreated that the senate would not be influenced by the bitterness of spirit shown by his son's accusers. He quoted from ancient history a case decided by the Areopagus, to which body he likened the most learned senate. The boy had been despoiled by his wife's family. He had been so preyed upon by the avarice of his father-in-law, the poverty of his sisters, the petulance of his mother-in-law, and of his wife, that in the bitterest days of winter he had been forced to travel out on foot

in summer clothes. Let the senate reflect how much he must have patiently endured! The advocate opposed to him was a clever man, and he had suggested many things that Gianbatista should have done, but they were all absurd. And what could a boy then do, tried as he was, if so learned and acute a lawyer had himself no sensible alternatives that he was able to suggest?

Speaking next of the person of the offender, the advocate became lost in the father. Surely the youth was worthy of excuse and pardon—a youth, simple of wit as any in the state—and for his age, the Scripture pleaded, Remember not, O Lord, the sins of my youth. How few of the most sacred senators had not erred gravely as young men! Had not all reason to be thankful, as he himself was, that they had been spared that hard test of their strength under which his child had fallen? He spoke of his own past errors, and, forgetting his advocacy for a moment, cried, “I thank God, by whom I am chastised through my son, that I may be reserved perhaps for greater mercies.”

“But he was so simple that he had no more prudence than a boy of ten years old, though not without aptitude for study. He was deaf of one ear, and in a miserable childhood endured much, for he was the partner of all my days of hardship.” And the advocate then became nothing but the grey-headed old man, the father strug-

gling for his child, earnestly pleading again and attesting that he was but as a boy of ten. But he could sometimes think well and reason as a man? He owned that he could; but would they inflict death on a lunatic who killed a man because his lunacy had lucid intervals. The law inclines to mercy, and would say that he sinned when not in his right mind. As for his boy, he was so simple: "I take more thought," the old man urged, "in the buying of my shoes than he took in the marrying of his wife." Was it not folly to wish to get rid of her? Could he by so doing better his condition? If he meant murder, was he not foolish in using insufficient poison; in having a confidant, and that confidant a boy; in waiting to be taken when he was detected; in confessing when he might have escaped by silence, and in confessing more than was suspected, or than any man desired to know? He told as proof of his son's simplicity how he had sent to him to be bail in ten thousand gold crowns, that he might have two or three hours' liberty to see a show.

Then he dwelt upon the claim to consideration established by the social rank of the accused—a graduate, a man honoured by the college, noble by ancestry, "for no artificer or person of ignoble rank," he said, "is to be found among our forefathers." He was a student, and was the head matured and educated by so many nights of toil to be cut off like the head of a man ignorant of yesterday as of to-morrow?

Then Jerome pleaded on his own behalf that as a father he might not be bereft. How, he asked, shall I be able to smile upon a grandson whose maternal grandfather thirsted for my son's blood? Will he not, when he becomes my heir, arm himself to avenge his father? How much discord and future trouble might be sown by Gianbatista's death? He ended the speech with a portent which he held significant of the divine will. The hand of Brandonia's brother Flavio had been arrested when he rushed forward to slay Cardan's sons. He had fallen in the manner already described. Divine help had been afforded when there was none human near. Then let the august senate next save father and son from the hands of cruel enemies.

That is a brief outline of Cardan's speech for his son, in which the argument was from time to time applied to his desire that Gianbatista's sentence should be not death, or the galleys, but perpetual exile. Pardon he did not ask.

In a second shorter address, or probably a document handed into court, Jerome replied to the statements in the formal crimination of Evangelista Seroni¹. That Seroni's daughter died through no man's crime, that the proximate cause of death was the falling of the nurse over

¹ Responsio ad Criminationem D. Evang. Seroni (published in the same work) for what follows.

her body, in a quarrel with her mother, as has been already related ; that her health had long been bad, and that he had himself attended her when labouring under a constitutional disease, as an indication of which there remained a scab upon her head when she died¹. He laid it down as "most certain" that arsenic after it has been cooked ceases to be a poison. He pointed out that the servant denied having been corrupted by his master's bribes. He said, "I solemnly swear that although stung by so many wrongs, affected by so many losses, I have attempted nothing more than has concerned the preservation of my son. Many things that I could have proved I would not suffer to appear in public depositions, nor would I persecute those with my hate who are indeed most worthy of it, but this wrong I leave to the Just Judge to vindicate." He said that it was a false accusation against himself to assert that he had not helped his son's household. Gianbatista had received from him in seventeen months, as had been shown, ninety gold crowns, being a sum equal to the whole of his own real income for twenty-seven months. "The reason why he could not clothe his wife, if I must confess the truth, was I believe partly a defect in himself, for he was so simple, and trifled

¹ "Repente obiit, tum maxime quod diu comitali morbo ex quo à me liberata est laboraverat; cujus indicio fuit fovea in capite mortuæ puellæ ut in actis apparet. Quid fovea cum veneno?" Op. cit. p. 1145.

so much, that he could earn little money. And he was kept poor too by the prodigal life (to use a modest term) of his father-in-law, of whom it is within the public knowledge that he has wasted his own money and estate, which I am told were ample means enough, and more beside. And the mother-in-law and the sisters-in-law gnawed to the bone that miserable boy of mine, who never knew how to deny. Oh, you will say¹, that was but a little matter! Granted. But that little was all to a poor man earning not much, and maintaining a large household."

A random charge had been inserted in the crimination which accused the father of a guilty knowledge and complicity in his son's crime. The ground for the accusation was that a short time before the murder Jerome Cardan quitted a large practice at Milan, and removed to Pavia, where he accepted smaller gains. This accusation Cardan in a few words showed to be absurd; but he said, "I take it to be a spark thrown from the hot wrath of Dominus Evangelista, rather than a conjecture stated by his counsel; it would be too clumsy for that."

He replied briefly to the accusation against himself of cruelty. I have left it to be stated here, that after his return from England, while struggling against the reprobate courses of his son Aldo, he had on one occasion been

¹ "Oh, dicetis, parum erat hoc! fateor. . . ." P. 1149.

stung during supper to the infliction of a barbarous chastisement, not wholly out of keeping with the roughness of the times—he cut off one of his son's ears. He referred to that act afterwards as one of the misdeeds of his life. It was remembered against him in the town, and found its way into Evangelista Seroni's act of crimination. "He calls me cruel," said Cardan, "and cites what should be a proof rather of drunkenness than cruelty. I am cruel if it be cruel to hate wickedness. I hate not only evil-doers, but those who wilfully turn into the way of evil." Truly it was a rough kind of reprimand with which to hope that a son might be turned out of the way of vice, and Aldo was not made less wicked by his father's wrath.

These were the points upon which Evangelista's document of inculpation compelled Jerome to speak. He ended with a personal appeal to the senate. They could not condemn his son to the galleys without condemning to a worse fate the father, who was innocent; death to his son would be far worse than death to him. He besought, therefore, that his son might be sentenced only to perpetual exile.

There were members of the senate, as he thought, influenced in their judgment by hostility towards himself¹. He had meditated over the defence of his son that has

¹ De Vitâ Propriâ, cap. x.

been here sketched, hoping not much from the judicial court, but something from the friendly intervention of the governor, the Duke of Sessa. He rose before the senate, as he tells us¹, with his heart shocked by the recollection of his son's grief, aghast at the impending peril, enervated by the past course of events, anxious for the future ; but the speech was delivered, the struggle for the life of his first-born son was maintained by Cardan to the end, and in the end was unsuccessful. No man stretched out a hand to rescue the philosopher from an old age of sorrow. Gianbatista was condemned to death. This mercy was shown, that if peace could be made with the prosecutors, the life of the condemned man would be spared.

No terms could be made. The foolish son had bragged to his wife's relatives of treasures that his father certainly did not possess. The Seroni family, therefore, demanded as the price of their relenting, sums that it was in no way possible to raise.

The red mark, like a sword², that seemed to be ascending Cardan's finger, on the fifty-third day after his son's capture, seemed to have reached the finger tip, and shine with blood and fire. Jerome was beside himself with

¹ "Ego memoriâ doloris filii percussus, imminentium attonitus, præteritorum enervatus, futurorum anxius, sic tamen exorsus" De Vitâ Propriâ, cap. x. The same chapter contains authority for the statements that occur between this and the next reference.

² De Vitâ Propriâ, cap. xxxvii.

anguish and alarm. In the morning, when he looked, the mark was gone. During the night his son had perished. He was executed by night in his prison on the 7th of April, 1560, being then twenty-six years old¹.

The mutilated body was delivered to the old man, who had taken to his heart the orphan children of Brandonia. Thrusting aside all question of legitimacy, he had received them as his own blood. But the girl, Diaregina, died almost at the same time as her father, and within the week there died also the nurse who had come with the infant boy. These all had to be buried, and three funerals² in one week crossed the threshold of Cardan. The old physician and his little grandson were thus left alone together. To that infant, three months old, his solemn charge, his consolation in the bitterness of his affliction, the philosopher transferred all love that was not buried with his son.

The stroke that fell so heavily on Cardan's heart destroyed at the same time his local reputation³. He had poured out his money in his son's cause. Thus from the very summit of his fame he had been thrust suddenly into poverty, contempt, and wretchedness; but it was only of the wretchedness that he was conscious. Time

¹ De Ut, ex Adv. Cap. p. 1105.

² De Vitâ Propriâ, p. xxvii.

³ Evidence of statements here made will appear in the sequel.

never healed his grief; even his reason was impaired by it. "I was told," he says, "that some of the senators privately confessed that they condemned my son with the hope that through grief I might perish or go mad; how barely I escaped one of those ends God knows." The narrowness of the escape is visible in all his after life. He could write still, according to the habit of the philosopher, and be beguiled from sorrow by the pen, though into his books, upon whatever theme they were composed, there almost always crept through some chapter or paragraph, a cry of wailing for his child. But in his conduct in society he was no longer always master of his reason. Mistrust became habitual; he seems to have felt like a stag at bay, and seen in nearly all his neighbours hounds watchful for an undefended spot upon him into which to fix their teeth. Superstitions darkened heaven for him like a night, and through the midst of the night there came in every form the voice of the old man lamenting for his son. Sometimes it took the form of verse. One metrical effusion, which seems to have arisen naturally out of the first sense of bereavement, Cardan published in a philosophic treatise, to the writing of which he at once betook himself, as to an opiate. It was a book that he undertook for the expressed purpose of supplying medicine to sorrow. In it he printed not only his Latin verses, but the notes for harp music, to which

his friend Giudeo, a composer who was then ninety-seven years old, set them. These are the verses put into an English form¹:

“ A purple flower cut by the hard plough
 Droops, so to me my dying son appears ;
 Worthy a Nestor’s life, I see him bow
 Under the axe, and long upon mine ears
 Murmurs a voice,
 ‘ O pitiable sire !’
 It says, ‘ O infant born hard years to know !
 ‘ Three souls at once under one stroke expire,—
 ‘ My own death is the least part of my woe.

¹ Theonoston, Lib. i. Op. Tom. ii. p. 346. The poem itself is here appended:

“ Ut flos purpureus duro concisus aratro
 Languescit: sic illa mei morientis imago
 Filii, nestoreos heu digni vivere in annos,
 Qui postquam suculam vidit sævamque securim
 Exanimis jacuit, diu tandem voce receptâ:
 ‘ Heu:—miserande pater,’ dixit, ‘ miserandaque proles,
 Nunc tres concordēs animâ moriemur in unâ,
 Sed mea mors mihi jam minima est pars certe doloris.
 Infantem miseror parvum, patrisque senectam,
 Languescentemque animum sternit pietatis imago ;
 Et quanquam moriar primis juvenilibus annis,
 Quosque mihi sensus olim tribuere parentes
 Carnificis dextra eripiat, cum vestra nefandos
 Jura tegant, lætique trahant per crimina vitam:
 Immemorem tamen heu pietas facit! O dolor ingens.
 Nobilis heu pater, en quis te solabitur inde
 Mœrentem? laterique hærens comitabitur ultro?
 Infantem commendo tibi nostrum, rogo vive,
 Obdura in sævos casus, curamque nepotis
 Suscipe, meque putes florentem vivere in illo.
 Verum utinam possem moriens amplexier ambos.
 Non licet; et postquam votis vos stringo supremis,
 Per tenebras nunc vado æternas: jamque valetē—
 Condidit auditis cœlo his Deus astra sereno:
 Saxaque fleverunt, ulularunt undique feræ.”

' My little child, my father's age, I mourn,
 ' The piteous image fills me with alarm ;
 ' Though I die young, and give the senses born
 ' For loving nurture to the headsman's arm,
 ' While evil-doers sheltered by your laws
 ' Drag life with gladness through the ways of crime,
 ' I heed not that. A keener sorrow draws
 ' My spirit downward. In the coming time,
 ' My noble father, solace who shall give
 ' To your great sorrow;—who, firm to your side,
 ' Will be your comrade onward? Ah, yet live!
 ' To you our helpless infant I confide.
 ' Harden his soul to bear the hurts of fate.
 ' Cherish the grandchild; in his bloom behold
 ' Your son again—Oh, wish that comes too late!
 ' Could but my dying arms you both enfold!
 ' In vain. I tell my last desires, and fade
 ' Departing through eternal shades.—Farewell !'

God covered up the stars when this was said;
 Brutes moaned, and, dropping from the rock, tears fell."

CHAPTER X.

THE LAST YEARS OF CARDAN AT PAVIA.

AFFLICTED and ashamed, Cardan returned to Pavia, where his sensitive mind suffered a daily torture. Infamy had fallen upon his house. He either was endured uneasily by his associates at Pavia, or he tortured himself with the belief that he was no longer honoured. "I could not," he says, "be retained with credit, or dismissed without a reason; I could not live safely in my own country, or quit it without risk. I wandered in despair about the town, conversed with people who despised me, shunned ungratefully my friends; I could not devise what to do, I knew not whither to go; I do not know whether I was most wretched or most hated¹." Nevertheless he remained at Pavia two more years.

He had bought a house there, near the Church of Santa Maria di Canepanova²; he had, of course, by right of his position, been enrolled a member of the Pavian College of Physicians; and before the late catastrophe he had

¹ Paralipomenon, Lib. iv. cap. vi.

² De Vitâ Propriâ, cap. xxiv.

always found that there was a great contrast between his position at the two towns of Milan and Pavia. In his own town he always was beset by petty scandal and unkindness, but in Pavia he had been generously used and treated with respect¹, until the events lately detailed shattered his reputation. He then found that a man with an ill name was spared no more in the one town than in the other. He had in his house successively three pupils during the last two years spent by him in Pavia. One was Ercole Visconti, an only son, entrusted to Cardan by his father Galeazzo². The youth belonged to a great family, that had in a former century filled an important chapter in the history of Pavia. The Galeazzo Visconti, by whom the existing castle of Pavia was built, probably was the grandfather to Jerome's pupil. Ercole was young, handsome, affectionate, and a good musician. He often shared the night-watches of the afflicted father, and with him also Cardan sought to kill care by playing with the dice. The other two pupils were Benedetto Cataneo, of Pavia, who became a lawyer, and Gianpaolo Eufomia, a musician, who acquired considerable erudition³. The pupils, we shall find presently, were made a theme for scandal.

¹ De Vitâ Propriâ, cap. xxxiii.

² The father's name is incidentally stated in Cardan's Defens. pro Fil.

³ De Vitâ Propriâ, cap. xxxv.

Unwillingly retaining his professorship, Cardan betook himself assiduously to the writing of books. The work on the Uses of Adversity, which he had commenced in his most prosperous days, was nearly finished; and he completed it with a chapter upon Grief, of which the text was a narrative of his son's story, and the moral was a philosophical, or it should rather be said scholastic, enforcement of arguments, to show that this was no real cause of sorrow to his father. His stoicism was not more genuine than his adhesion to some of the arguments that he had thought proper to the disputation in his son's defence. The book was published, and the defence spoken by Cardan for his son was printed at the end of it, together with a fragment of the young man's writing "Upon Fœtid Foods," and a fatherly laudation of his skill as a physician, which, in the case of certain Spaniards, had enabled him to effect a cure that even Jerome had in vain attempted. The work on the Uses of Adversity was divided into four books, of which the first treated generally of all kinds of adversity, and of the preparation of the mind against imminent ills; the second treated of bodily adversity, as deformity, disease, age, death; the third book treated of adversity in fortune, as through poverty, envy, exile, anger of princes, prison; and the last book treated of adversity through one's relations, as through wife and children. It was thus naturally closed with the history of his misfortune through his son. The whole work is

written in the temper of a follower of Epictetus, and contains many allusions to its author's private history. It was first published at Basle, in 1561.

Jerome had been engaged also when his son died upon the fourth book of a work on Secrets¹, which included such topics as occult speaking and cipher writing; medical problems, for example, stone, hernia, deafness, &c.; philtres, and the natural vision of demons. Sixty-six secrets were explained in it; and of the explanations six were approved by personal experiment, two had not been tried, the rest were half tried. After his son's death he had no heart to test them any further.

He sought relief rather in philosophic meditations, and began to console himself with the writing of a bulky work, entitled Theonoston, in five books. The first book, all written at Pavia, was upon Tranquillity, and was begotten of the struggle to find rest for his own troubled mind. The second book was on the Prolongation of Life, a medical treatise. The third book, partly written at Pavia, but some of it ten years later, was on the Immortality of the Soul; the fourth on Contemplation; and the fifth on the Life of the Soul after Death, and its Felicity.

The only medical work written at this time by Cardan was a comment on the Anatomy of Mundinus. Mundinus was the text-book upon which, until Vesalius broke

¹ The account of works written in these years is from the last book *De Libris Propriis*. Op. Tom. i. p. 118.

through the rule, physicians commented, if they had any anatomy to teach. The anatomist, instead of writing a new work of his own, edited Mundinus. Cardan admired Vesalius, as we have seen ; but he considered him to have erred in certain respects, which he named. The object of his comment on Mundinus was to discuss some philosophical points of anatomy that had been much neglected, bearing particularly on the connexion and use of parts, and on the application of anatomy to the diagnosis and cure of disease¹. He wrote also, soon after his son's death, a philosophical dialogue, entitled *Tetim*, in which he dwelt mournfully upon his sorrows ; and, among other things, said that he had lived happily under Ferrante Gonzaga, who was a harsh man, while under the mild rule of a liberal successor he had lost his son².

Considering the execution of his son to have been a crime on the part of all concerned in it, he watched the fates of those who had afflicted him ; and noted afterwards³ that the President Rigone lived to expel his own wife from his house without any provision, and to lose his only son. Only a few days after Gianbatista's execution, his harsh prosecutor, Evangelista Seroni, had been put into chains ; and losing some small office, of which he had endeavoured to enlarge the profits by extortion, he became

¹ See the preface to Mundinus. Opera, Tom. x. p. 129.

² Dial. *Tetim*. Opera, Tom. i. p. 671.

³ De Vitâ Propriâ, cap. xlii. De Varietate Rerum, Lib. xvi. cap. 93.

a common beggar. His favourite son was hung in Sicily. The prince, by whom Cardan was deserted in his hour of need, though otherwise, says Jerome, generous and humane, was distressed gravely both as a public man and through his family. All others who took part in the boy's death suffered, some more, some less.

There is one particular in which the growth of Cardan's superstition after his son's death came to be very distinctly marked. Before that date he had not adopted the superstition of his father, or the hint then misapplied by many of the learned from the ancients; he had not believed that he was aided by a demon. Scaliger, as we have seen, had such a faith; and it arose in that age not unfrequently out of an unspiritual reading of some of the later Greek philosophers, and chiefly, I think, of Plotinus, for whose works Cardan and many others had a very high respect. Very few years before his great misfortune, in his book on the Variety of Things, Jerome had been discussing this subject, and had said, "I truly know of the presence near me of no demon or genius; this I well know, that for my good genius there was given me reason, great patience in labour, courage, a contempt of money and honours, all which I make the most of, and count such gifts better and ampler than the demon of Socrates."

After his son's death, in the dialogue entitled "Tetim," we find his opinion in a transition state. He tends to believe in a demon, though the belief he expresses is

half the expression of an allegory. But in his last years the belief was real. He thus wrote in the dialogue, speaking of himself through his imaginary character:

“*Ram.*—So many and such great marvels have happened to him against his will, that I am forced to suspect, and he too with whom I am very intimate, himself thinks, that he has a genius, and a great, powerful, and rare one; so that he is not lord of his own actions, but what he desires he does not have, what he has he did not desire, or even hope for. But he turns with horror from this thought, and acquiesces in it only when he thinks that all things are prepared by God.

“*Tetim.*—But what is its nature? For some are said to be saturnine, others jovial, and so of others.

“*Ram.*—It is suspected to be under Venus, with a mixture from Mercury and Saturn.

“*Tetim.*—All such live miserably and perish, though the name of some grows to be great.

“*Ram.*—I do not know that, because I know no one who has had a familiar genius of this sort except the man of whom I speak, and his father, and Socrates.”

The sudden loss of character and fortune that had fallen on Cardan deprived him of the power of assisting properly the English William who still dwelt in his house, and had grown up to be a young man twenty-two years old, for whose future career the provision had been still from year to year delayed. Cardan had strong affection for him,

loved his winning ways, and often called him in the household Guglielmina. When, after Gianbatista's death, it became requisite that William should be put out in life, nothing was found better than to put him with a tailor in Milan, paying for his board, that he might have instruction in the trade. The end of William's story is thus told by Jerome¹. (He has just adverted to the fate of his son) "... by which I was compelled to work all the year through at Theonoston; besides I had to lecture upon Galen's art of medicine, and was intent upon it, so that I again forgot my pupil. After six months, a good deal of Theonoston being written, especially that part which treats of the immortality of souls, I again thought of my design that William should learn a trade, for he had been eight years away from Dover. Then for reasons which I at the time thought substantial, but which I now think light (for he was a youth, a pupil, a friend who loved me, and who for love of me thought little of his distant kindred), I proposed that he should board out of the house.

"I said then, 'William, you grow to be a man, and have learnt nothing; that I may show how much I love you, now that, as you know, I must go to Pavia, if you like I will place you in the house of some tradesman; I will pay him for your keep, and provide you with clothing, so that you may learn a trade. You shall then either go home,

¹ In the preface to the *Dialogue de Morte*.

taking money with you, or I will supply you with the means of opening a shop and establishing yourself here in trade, so that you may earn a comfortable living.' He was pleased at what I said; but I added, 'On holidays you must learn reading and writing.'

"He agreed.

" 'But what trade will you choose? (And then I made a great mistake in offering to a simple youth the most laborious.) Will you be a tailor?'

"He agreed to that, and the more willingly, because he had been in the habit of talking with my tailor, Messer Antonino Daldo. I proposed him to that person, who at once agreed about the price: that I was to pay at the end of six months thirty-two gold crowns. That was my second error. I ought to have paid every year (we agreed for three years) only a third part. But I committed a third error. I should have placed him to be taught by somebody at Pavia, where I was residing, not at Milan. The fourth mistake was, that I did not retain, lodged in my own house, regardless of youthful errors, which concerned neither my life, honour, or fortunes, so faithful a pupil, who had been entrusted by his father with so much confidence to my good faith. If I had not kept him with me, I should have sent him to no place but his own home.

"The six months expired: the crafty man flattered the excellent youth; I saw that to be out of policy; but, sus-

pecting no fraud, paid the thirty-two gold crowns. Daldo then throughout the summer, having a little country farm, took the youth out to play, so that from tailoring he went to the custody of vineyards; at the same time, if there was necessity, they came back in the evening—the place was about two miles out of town—and spent the night in sewing. The boy danced about among the rustics, and made love to all the girls. Thus it happened that when I chanced to be at Milan he was taken with a fever.

“He came to me, and I neglected the matter, for many reasons: partly because he did not complain much, partly because I did not know that the disease was caused by improper and excessive labour, partly because, when he had been with me, he had two or three times had a similar attack, which passed away in about four days; and, finally, because my son Aldo and a boy had run away. What more? I ordered him to be bled; and four days afterwards I was sent for in the night to visit him, because he thought he had not long to live. He was seized with convulsions, and had lost all consciousness. I nevertheless battled with the disease, and he recovered.

“After that I was compelled to return to Pavia to lecture; but he, when, after he had risen from his bed, his master was celebrating some wedding, was compelled to sleep in the shop: there, on account of cold and bad food, the boy became miserable, and was about to come to me

at Pavia, when the disease returned upon him. Then his impious master ordered him to be taken to the poor-house¹; where the next morning he died of the disease and of distress of mind, and night chills. By this misfortune I was so overcome, that I seemed to have lost another of my sons."

Thus William died; and the philosopher was again smitten in conscience when he saw that another being whom he had loved was ruined by his carelessness. He accused himself most justly, and not in a word too heavily for his neglect of duty. He had assumed lightly a grave responsibility, and it was well that he should grieve when he saw the wretched end of the boy, well-born and quick-witted, who had been confided to him by strangers as to the most learned man in Europe, in the hope that he too might become learned and famous. If William had lived, he would have become an idle tailor; but he perished of neglect. Cardan went back to Pavia full of grief, and set to work upon the only act of atonement that occurred to him. He would compensate in some measure for the youth's death by conferring upon him literary immortality, and for that express purpose wrote a Dialogue on Death, of which the English William was the theme. In the preface he told candidly the story of his conduct in the matter, concealing nothing that told hardly on himself, acknowledging the full extent of his neglect. The

¹ Xenodochium.

dialogue itself was meant to be the literary monument on which Jerome would inscribe for the instruction of all ages, the youth's name and the grief of the philosopher by whom he was so much loved and so much neglected. The essential part of the youth's name, however, obscured by translation into Latin, and further perplexed by a misprint, it is hard now to determine. I suppose it to have been Latombe¹.

Beset by miseries, and shrinking at Pavia from the face of men who had known his son and did not share a father's pity for his fate, Cardan sought relief in change of scene. He desired a removal from among the people who had seen his house degraded. He had been known always to the Borromeo family, and the young cardinal, who was so great and truly excellent a man, had grown up in good-will towards him. His mother, indeed, Margaret de' Medici, the first of his father's three wives, had once been indebted to the skill of the physician for her life. It has been said that Carlo Borromeo was at Rome, but his activity was felt in other places. He

¹ In Hasted's Kent the only family names that seem likely to have been transformed into Lataneus, are Latombe and Latham. The Lathams mentioned are clergymen in out-of-the way places; but Thomas and Jane de Latombe are said to have held early in the next century Brambery Manor, ten miles from Dover. William's family was good, and of foreign origin. I suggest the name for want of a better. It may be possible to ascertain whether Philip and Mary ever were lodged in Kent by a Latombe, and if not, by what other family whose name might be rudely Latinised into Lataneus.

was a man of influence even at Pavia, where he had studied under Alciat, and where he founded, early in his after life, a splendid college, called by his own name, of which the edifice was raised from the designs of Pellegrino Pellegrini, at a cost of sixty thousand gold crowns. That college was founded in June, 1564; but already, in 1562, he was engaged in a like work at Bologna. There he was the most munificent contributor towards the erection of the university building that at this day ornaments the town. Though the university had prospered under Papal patronage, its accommodation had been very bad; for that reason, in the year 1562, the building of the present edifice was begun, and as it was begun chiefly through the munificence of Borromeo, the influence of that cardinal's voice in the affairs of the University of Bologna was almost that of a master. To this good friend and patron, therefore, Cardan turned, in the hope of obtaining through his interest a chair at Bologna, for which he could resign that which he held at Pavia. Escaped from among the gossip that surrounded him, and from the stigma that had been attached to his name since Gianbatista's execution, he might hope to find friends, and again meet with due honour out of his own country.

Borromeo's answer gave him all the necessary hope. Morone, too, was influential at Bologna; therefore, relying

on the friendship of the cardinals, Jerome at once consulted his own feelings, and endeavoured to throw up his appointment in the University of Pavia. The senate delayed for some time the acceptance of his resignation. He had then no other appointment offered him, and they seem to have supposed that he was acting rashly on the spur of his unhappiness, and that it would be most proper to interpose delays, and force upon him that time for mature deliberation which, in the disorder of his mind, he seemed to be unwilling or indisposed to take.

It was then that the afflicted old man was exposed to town scandal and insults, which he begins in this way to record¹:—"I was professor at Pavia, and reading in my house. I had a nurse and the youth Ercole Visconti, and two boys, and a famulus, as I believe. Of these boys, one was an amanuensis and musician, the other a page. It was the year 1562, in which I had made up my mind to leave Pavia, and resign my professorship; but the Senate took that ill, and as if I decided angrily. Then there were doctors, one, a hot man, who had once been my pupil, the other Extraordinary Professor of Medicine, a simple man, having, I think, no harm in him. My rivals were most anxious that I should leave the city, doing all they could, as it seemed, to bring about their

¹ De Vitâ Propriâ, cap. xxx.

wish. Then, when they did not hope to get my dismissal from the senate, though I myself was asking for it, they resolved to kill me, not with the sword, for they feared the infamy and the senate, but with a scandal. They wrote to me first a vile and filthy letter, in the name of my son-in-law and in the name of my daughter, saying that they were ashamed of their relationship with me, that they were ashamed for the senate and the college, which were likely soon to remove me from connexion with them. Bewildered by this audacious censure from my kindred, I did not know what to do, what to say, how to reply; for I could not interpret the meaning of these things." After a few days, the distressed physician received also a letter signed with the name of Fioravanti, a most modest man and his friend, opening his eyes to a charge so vile, that he reverted instantly to the letter of his son-in-law in grief and amazement at his children's rash belief of it. He went at once to Fioravanti, who confessed the letter to be his; and being asked upon what grounds the accusation rested, answered upon common fame, and the opinion of the rector. Now the rector was a partisan to Delfino, Cardan's nearest rival. Fioravanti, who had at first been influenced by the reports, readily did justice to his friend, and a check was opposed to the filthiness of scandal. Fioravanti was the hot friend, and Delfino the simple rival, who desired to succeed to Cardan's vacated chair.

The libel had been founded on the fact that Cardan, whose love for music was a ruling taste, generally maintained in his house, according to a custom of the age, a singing boy, and that he was rarely without pupils. The sick mind of the philosopher had no longer the strength to despise idle calumny; and even Fioravanti could not afterwards desire the aid of his boys in a church choir, or as singers in a comedy, without exciting Jerome's anger at suspected motives. Visconti was at last swayed by the strength of Cardan's feelings into sharing the belief, that it was designed to remove all faithful attendants, that his master might more readily be poisoned.

It is evident that Jerome's intellect was greatly shaken by the suffering that followed his son's crime and execution. His superstition, increased and confirmed by age, was increased tenfold by his gloomy fortune; and his views of life were coloured as they never before had been by his sick imaginings. The next illustration of this fact is very striking.

In May of the year 1562, there was founded in Pavia the Accademia degli Affidati, which suddenly became one of the most illustrious of all Italian institutions of the kind. Writing from Pavia in August, Contile¹ spoke of

¹ Contile is here quoted through Tiraboschi, from whose *Storia della Letteratura Italiana* (ed. Milan, 1824), Tom. vii. pp. 276, *et seq.* this account of the academy is taken.

it thus: "There has just been established here an academy named 'Degli Affidati,' in which are the first men of letters in all Italy, as Branda Porro, Cardano, Delfino, Lucillo, Bobbio, Corti, Cefalo, Berretta, Binaschi, Zaffiro, and many others not less learned than these, although not equally famous. I will send you information of the forms they use, the laws they observe, the faculties in which they have readings, who are to be the readers, and the days of meeting. The Lord Marquis of Pescara is made academician, and the Signor Federigo Gonzaga. It is believed that when the Duke of Sessa comes, he will also take a place in it." In September, the same correspondent wrote:—"Thanks be to God, whom it has pleased to cause my reception into the Accademia degli Affidati, founded in this city four months since, which has in a short time made so high a name, that it may be exalted as a marvel without paragon. We are more than forty: six excellent and famous jurisconsults, ten philosophers, and about fifteen of the learned in other faculties; many knights, some princes, and among them the Lord Marquis of Pescara." The academy did, indeed, take at once so high a stand, that after four years it ranked as its academicians the first cardinals of Rome, and some of the chief rulers of Europe, including his Catholic Majesty Philip the Second.

Fifteen days after the town scandal against him had

been at its height, Cardan was asked to aid in the establishment of this academy. He did so most unwillingly; he was indignant still against his libellers, morbidly sensitive to shame, and perceptibly affected in his mind by his son's fate. Even the just homage to his reputation stung him as an insult. "Before all things," he wrote in his old age¹, "they took care that he for whom his country was to blush, and his family, and the senate, and the colleges of Milan and of Pavia, the whole body of his colleagues and his pupils, should enter the Accademia degli Affidati, in which there were several good theologians and two princes, the Duke of Mantua and the Marquis Pescara. And when they found that it was hard to get me there, they forced from me my consent by threats. What could I do, overwhelmed by the terrible fate of my son? I had exhausted the whole strength of adversity; at length I acquiesced, chiefly because they promised, after a few days definitely fixed, to accept the resignation of my office as a lecturer." Then, after a few angry apostrophes relating to a period when Jerome felt himself to be at war with all mankind, he relates how he observed, when he passed through the doors of the academy, a beam so placed that a person might be killed by falling over it. He questioned whether that was not another foul design upon himself; and his chief occupation in the

¹ De Vitâ Propriâ, cap. xxx.

assembly seems to have been the maintaining of a sullen watch against the hand of treason.

There can be no doubt that there was much plotting and contriving directed against Jerome, who since his son's death had been neither a reputable nor an agreeable companion. Gianpietro Albuzio, it should be said, appears to have been not only a most eminent, but a most kindly man, for with him the bereaved father found consolation in pouring out his heart, if we may deduce so much from the fact that Cardan dedicates to him a sorrowful book, and makes him, as a most generous and sympathising friend, speaker with himself in a dialogue upon the topic of his sorrows¹. Other physicians were of a less noble stamp. One² whose son Cardan was refusing to take into his house as pupil with a fee, happened to be a man who boasted of his favour with the Duke of Sessa, and punished the philosopher by labouring to bring him into graver disrepute at court. His standing was already lost there. Jerome, while praising the duke in recent books, had complained that his friendship proved no blessing to him; because, trusting to it in his son's case, he had neglected help that would have served him better. Meeting Cardan in the street, the physician (who is not named) again requested that he would take charge of his

¹ De Morte.

² Paralipomenon, Lib. iv. cap. vi. for the succeeding story.

son, and promised that if he would, he should know how to restore him to the favour of the governor; for that he (Jerome) had retired from the duke's friendship, not the duke from his.

Jerome replied, that he needed no such good offices, and no such favour.

"Why?" asked the physician.

"Because he would not, or he could not, certainly he did not, save my son."

"Then," Jerome goes on to relate, "he cried out before witnesses that my son had perished by his own fault, not the governor's. He even added, that I was abusing the governor, and had best take care what I said. At these words people ran to us, and a ring was made about us; many who heard his accusations had not heard what I did really say. At last, when he had long held to the same tale, he added madly what I did not know before, or did not positively know, that my son perished by the fault of the governor's brother-in-law, and he named him, so that he was a maligner of princes rather than I. I answered nothing to his anger, but that I was not maligning, and had not maligned, or thought of maligning, the prince whom I served."

Afterwards this physician, with his son and two companions, meeting Jerome in the open market, told him that a relation of the prince, an angry man certainly, had

been reading his book, in which he wrote of the illustrious lord abusively, and was very near running out to cut Cardan in two (for he happened to be in the court at the time), and throw him down the dust-hole. But the physician added, that he had been good enough to interfere and mitigate his anger. Then he attacked Jerome, and told him that he must speak well of the prince, and turning suddenly upon him, as if he were protesting that he would not, raised another crowd. Cardan then, "knowing," he says, "how his reputation was shattered by the fate of his son," and what strength and law was with the rich and powerful, felt that he was compelled to oppose the machinations of the busybody. Entering the cathedral, he saw one of his learned friends, Adrian Belga, always helpful and kind, and to him told the whole story, adding, that if Antonio Pezono, a Spaniard doing honour to his country, were in the place, he should know how to turn the tables on his persecutor. "He is here," said Adrian, "just at the porch." They went to him. He, when he heard the story, told it to a Spaniard higher in authority, who told it, in presence of Cardan's medical plague, to the magnate who was the hero of the tale. The great man, who did not know the alphabet, laughed mightily at hearing of the wrath excited in him by the reading of a volume of philosophy, and turning to the doctor, told him that he was a fool; smaller people

echoed this opinion, and Cardan, having seen his persecutor thoroughly chidden, went away high in the favour of the Spaniards, to whom he had furnished entertainment.

In the mean time, Borromeo having recommended his friend to the senate of Bologna, there had been sent a person from that town to Pavia¹, who on arriving got among evil counsellors, and wrote back, without having attended one of the illustrious physician's lectures, or seen any of his pupils, many bad things, and among them these: "Of Hieronymus Cardanus I have understood that he is a professor without a class, but only benches; that he is a man of ill manners, and disliked by all; one full of folly. His behaviour is repulsive; and he knows but little of the art of medicine, expressing such sectarian opinions about it, that he is rejected by all in his own city, and has no patients."

This letter was read to the senate at Bologna in the presence of Borromeo himself, who happened then to be serving as pope's legate in the town. It was at first proposed to put an end to the negotiation with Cardan, but upon the text of that part of the letter which said that he had no patients, there rose one of those present and said: "Hui! I know that to be false. I have seen the first

¹ The account of these negotiations is from the *Liber de Vitâ Propriâ*, cap. xvii. The scraps of dialogue, like all others occurring in these volumes, are translated literally from Cardan.

men in the land using his help; and I, though not one of the first men, have also used it."

Borromeo added instantly: "I too can testify that he saved my mother's life when it was despaired of by all other people."

Another senator said: "No doubt the other accusations are as true as this." The messenger, who was present at the discussion of his own report, blushed and was silent. Cardan's enemies had overshot their mark. The unfavourable report was not, however, quite without effect. It was determined to use caution, and it was therefore resolved that a professorship at Bologna should be offered to Cardan for one year, with the understanding that at the end of that year he should vacate his office if the report sent to the senate of him should be proved correct, or if in any way his connexion with the university did not prove beneficial. At the end of the year, if his appointment were confirmed, the subject of his salary was to be re-considered. To this decision Borromeo assented; but when it was brought to Jerome by Evangelista Matuliano, he who had scorned to serve princes because they demanded from him an abandonment of independence, refused utterly to accept office upon such dishonourable terms. The stipend, too, was to be scarcely so much as he had at Pavia, and for his travelling expenses he was to have nothing. To those points he objected, but

the terms attached to the offer shut out all debate; and though he had almost no income at all, because he had already resigned his post at Pavia, he summarily rejected the proposals from Bologna. "Go," he said to the messenger; "for I account nothing baser than to be honoured on such terms, even with the best of pay."

In the year 1562, on the 11th of June, Cardan had resigned his professorship¹, and had already received the reply to his requests appointing him, on terms that he thought not honourable, to Bologna. The prince was expected whose presence he says that he "looked forward to with horror, not as an ungrateful man, but as a man not grateful." All his affairs were in confusion, his position was unsettled. On the next day there was to come to him Paolo Andrea Capitaneo, a boy of fourteen, from Vilanterio. On the forefinger of his right hand he had a ring, of which the stone was a selenite, and on the left hand a large, hexagonal jacinth, that he never laid aside. Retiring for the night, he took off the selenite and put it under his pillow, being of opinion that it hindered sleep, he often was in the habit of so doing; the jacinth he retained, for one reason, among others, because it promoted somnolence. Towards midnight

¹ Paralipomenon, Lib. iii. cap. vi. Opera, Tom. x. p. 459, from which the succeeding narrative is taken, with scarcely any other alteration in the wording than a change from the first to the third person.

he fell asleep, and on awaking could not find the ring on his left hand. He aroused Giacomo Antonio Scacabarozio, a boy of fifteen, who was his page, and slept in the chamber, ordering him to find the rings. He found the selenite at once under the pillow. The jacinth, first Jerome and then the boy looked for in vain; they could not find it. "Sorrowful to death on account of the omen," says Cardan, "my mind desponded, for I scarcely could consider this a natural occurrence. When I had rested for a little while I gathered courage, and bade the boy go and get light from the hearth. He answered, I think because he disliked the trouble, and was afraid to be in the dark, that the fire had been thoroughly put out last evening. I bade him light a candle with the flint. He said that we were without matches or tinder." Jerome persisted, and at last got up, for he said effort must be made, "if even without hope; because if I went to sleep upon so dire a prodigy it would portend destruction. I commanded the boy, therefore, to get light in some way. He departed, raked among the ashes, found a coal no bigger than a cherry, indeed smaller, that was quite glowing, and took it with the tongs. Then I was afraid there was no hope of getting flame; but he brought a lamp with a cotton wick, blew on the coal, and obtained a light without any emission of flame from the coal, which again seemed to me a prodigy." The boy asked

whether it was not neatly done ; but Jerome was absorbed in admiration at the prodigy, which he was not able to comprehend. Search then was again made for the ring with much anxious fear and care, lest the light should become extinguished ; the ring, however, was soon found on the ground, under the bed. "It could not possibly have got there," Jerome adds, "unless it were conveyed by hand ; its shape would have hindered it from rolling ; besides, if it had rolled, it would not have been in that direction. It could not have fallen where it lay, for the pillow joined close to the bed-head, and the bed had raised sides, in which there was no chink. I expressed only wonder, but the boy himself trembled with fear. Many things may, I know, be said, but nothing likely to persuade a man, however small his superstition, that the thing was not a portent signifying the reversal of my condition and my reputation." Cardan, after the ring was found, put it on his hand, and asked the boy to draw it off, but it fitted so tightly that he could not, or did not, do so. The philosopher himself then took it off, and laid it aside for ever, after he had worn it for years as a protection against lightning, plague, night-watching, and palpitation of the heart.

Turning this prodigy to use, Jerome on the following day reflected on his dangers ; and, on the excuse that his health was weak, determined that he would not set foot

out of doors. It so happened that in the morning he was invited to the academy, but he excused himself on the ground of ill-health. After breakfast, the rare accident happened that he was invited out to supper. The host was to be the physician who, after Cardan's departure, taught in his place, and Jerome hints, in the diseased spirit that had come upon him since his son's death, the doubt whether he should have returned from such a feast alive. He did not think his entertainer wicked enough to do him harm, but there would be others there glad to get rid of him. At any rate, warned by the omen, he determined not to go. It was a festival day¹, and all the professors and distinguished students were to be assembled. Four or five students of Cardan's class came to him with Zaffiro, a teacher in the University, soliciting his presence. He said that it could not be. They supposed it to be because he never dined that he did not care to be present, and said, "On your account we have had the dinner changed into a supper." He repeated that his presence was impossible. They asked why, and he told them of the portent, and of his determination thereupon. They were all surprised; and two of them, talking much together, often asked whether he would mar so famous an assembly by his absence. He

¹ From this point the narrative is furnished by cap. xxx. *De Vitâ Propriâ*.

abided by his intention. An hour afterwards came some one with more urgent entreaty; Jerome replied, that he would not break his vow, that he should not leave the house. The evening was cloudy, and he went to see a poor patient, who was a butcher, because his vow did not hinder the performance of that duty.

Afterwards dreading some evil, but not knowing what, Cardan thought of his books¹, in which there were dark passages that rivals might know how to construe to his hurt. He wrote, therefore, to the Council at Rome, subjecting all that he had written to its authority and better judgment. Through that precaution he was really saved afterwards from a position of great danger. Going then to Milan, he was there seized with a fever and weakness of the stomach. While labouring under this illness, a messenger arrived from Pavia, summoning him suddenly to his grandson, who was in extreme peril. So he was compelled to ride to Pavia in a chariot, ill as he was, under a burning mid-day sun, and it was that year the hottest summer in his memory. The grandson was cured, but the grandfather added to his other ailments an affection of a front tooth, which was soon followed by erysipelas over the face. He was near dying, and would have caused himself to be bled, if a

¹ Paralipomenon, Lib. iii. cap. vi. from this point to the end of the chapter.

conjunction of the planets had not been in opposition to that remedy. When the disease abated, Cardan began to write, at its suggestion, a tract "On the Teeth," and returned to Milan, when the erysipelas had not quite disappeared. There he had presently acute twinges of gout in the knee, and applying those symptoms to his written commentaries on the teeth, he tried certain experiments, succeeded to his wish, and was walking about the streets a month before he might have expected that he should be able to leave the house. The reputation of a new discovery in medicine brought fresh applications from men eager to make trial of his skill; and he was thus enabled, before leaving Milan, to recover a part of his lost wealth and lost reputation, healing patients, and repairing some of the loss caused by the lavishing of money in his son's defence.

No better hope of a subsistence was then visible than Milan offered. Pavia he had resigned, the offers that came from Bologna he had justly scorned, and he was finding friends and some repute again in his own town, though it was most hateful to him; for it was beset with bitter recollections. Four senators in Milan severally recommended him to seek for a professorship among themselves, and held out at the same time strong hopes of success. He had begun accordingly to seek an honourable appointment in his native town, when he was checked

by a rebuff of the most unexpected kind. The senate suddenly expunged him from the list of scholars qualified to lecture, warned him that he was accused of two most grave crimes, the witnesses against him being two physicians; and adding that it was only out of respect to his station in life, and his connexion with the college, that they refrained from laying hands upon him, they informed him that he was sentenced to perpetual exile from their territory. This was all hasty enough, and, in the absence of those who could by a word have proved his innocence of the crimes charged against him, Cardan wasted much time in prayers and petitions. But at last the necessary vindications came, and he escaped from his brief trouble—from beginning to end three weeks long—not only unscathed, but with a positive accession of renown. “Freed from those calumnies,” he says, “I grew in fame. The citizens, indeed almost the whole state, embraced me with peculiar love, admired my innocence, and pitied my misfortunes: my books, too, were set free from all suspicion. . . . Then there came to me from cardinals and councillors at Rome soothing and flattering letters, so that in my whole life I never met with a success greater or more splendid.”

The accusations are not named, but from the last fact we may conclude reasonably that this was the occasion, or one of the occasions, on which the precaution he had taken

in the submission of his writings to the Council at Rome proved the means of saving Jerome out of peril. We may also reasonably conclude, from the popularity to which he suddenly attained among the citizens on his acquittal, that in his accusation some strong public sentiment may have been touched. His distress at his son's fate may have led him to say things which would be tortured into a significance of that kind of treason which the citizens of Milan might in their hearts think fairly becoming a good patriot. On this and on a later occasion, when the charge seems to have been similar, it was not set down by Cardan in his books. This I can account for only by supposing that he had been brought into collision with the ruling powers, of whom he was bound to say nothing that would give further offence, and of whose dealings with him he therefore said nothing at all. It can have had nothing to do with the scandal raised at Pavia, for of that he was ready to speak openly and bluntly, scattering it to the winds with the angriest words he ever wrote.

While reversing its decision upon this case, whatever it may have been, the Milanese senate abided on technical grounds by the exclusion of Cardan from the right of lecturing. That, however, proved to be no check to his career. The messenger returned from Bologna with a more cheerful face to tell him that the conditions against which he had protested were withdrawn, and

that, although the salary was still small, he was invited to Bologna upon honest terms. "But I," he says, "because I knew of nothing worse than to endure life surrounded by the cruel faces and hard voices of the men who had torn from me my sweetest son, agreed to the conditions that were brought, though they were still unjust."

CHAPTER XI.

CARDAN AT BOLOGNA.

"IN all good fortune," said Cardan¹, "and in the midst of my successes, I never changed my manners, was made no rougher, no more ambitious, no more impatient; I did not learn to despise poor men or to forget old friends; I did not become harder in social intercourse or more assuming in my speech; nor did I use costlier clothes than my occupation rendered necessary. But in the bearing of adversity my nature is not so firm, for I have been compelled to endure some things that were beyond my strength. I have overcome nature then by art, for in the greatest agonies of my mind I whipped my thighs with a switch, bit sharply my left arm, and fasted, because I was much relieved by weeping, when the tears would come, but very frequently they would not."

The gloom of Cardan's sorrow was made deeper by the superstition to which it became allied. Sometimes, how-

¹ De Vitâ Propriâ, cap. xiv.

ever, the allies were enemies. It would seem that the strong force exerted upon the mind by the working of a superstitious fancy was able now and then to conquer grief. Thus we are told¹, that in the first months of his misery, in 1560, in the month of May, when he was grieving for his son's death, fasting, whipping himself, and seeking forgetfulness in dice with his young pupil Ercole Visconti, who shared with him his night watches, he implored Heaven for pity; since through grief and watching he must die or become mad, or resign his professorship. If he gave up his chair he had no means of living; if he became mad he would become a jest to all men; he begged that if need were he should die. Then he fancied that a voice cried to him one night in a dream, "What do you lament? the slaughter of your son?" He answered, "Can you doubt it?" The voice then said, "Put into your mouth the emerald that you wear hung about your neck, and that will keep your son out of your memory." He followed the advice of the dream, with success he says, and he was much distressed in his mind when he could not have the stone between his lips, that is to say, when he was eating or when he was lecturing.

But no artificial aids against distress of mind had subdued Jerome's grief for his son's fate. The cloud went with him from Pavia to Bologna, when, in accepting a

¹ De Vitâ Propriâ, cap. xliii.

professorship in the university of that town, he quitted finally his native soil. In spite of its nominal reversal of the decree of exile, the Milanese senate still proscribed him as a teacher, and he appears to have been virtually banished from the state. While he was preparing for the removal to his new home, in the course of packing he discovered a manuscript, that of the book on Fate, which he had lost for three years, and after much vain search supposed to have been stolen. It was under a little iron box inside his desk¹. Reflection upon this portent caused him to infer that he should, in the course of three years, be restored to his country, for that would be like the finding of the manuscript, an event of which there had seemed to be no hope, the happening of which would be of no use to him, but nevertheless welcome.

There is an allusion to a dream that Cardan had at or soon after the time of his leaving Pavia, which tends to confirm the opinion already expressed as to one of the grave accusations under which he had then fallen. One part of it, he says in his interpretation², signified religion, in the name of which he should suffer trials and be brought into no slight anxiety; but he should not sustain much hurt.

Having removed to Bologna with his son Aldo and

¹ Paralipomenon, Lib. iii. cap. 6.

² Synesiorum Somniorum (ed. cit.), p. 219.

his grandson, Jerome established himself, against much opposition, as a professor in the university, with which his connexion was maintained during the next eight years of his life. At first he occupied a house next door to a ruined palace, of which the story was, that its owner, named Gramigna, had dug a mine in it, near some of the main pillars, for the purpose of destroying certain of his enemies, whom he had invited to an entertainment¹. A train was set, and the mine was to explode an hour after the entertainment had commenced. The treacherous host of course made for himself occasion to depart from table just before the critical moment. At the appointed time, and after it, nothing occurred; and Gramigna, at last growing angry and impatient, rushed in with his drawn sword to ascertain the cause of the delay. When he had passed into the hall the mine exploded; and, the main pillars being broken, the whole palace tumbled to the ground. The mangled body of its owner was found dead among the ruins, and in that state gibbeted. Next door to the ruin Cardan lived. It will be most convenient here to say that he removed afterwards to rooms in the palazzo Ranuzzi, where he occupied successively two sets², one splendid, but with a dilapidated roof that was perpetually letting pieces fall, and threatened in the end to

¹ Paralipomenon, Lib. v. cap. 2.

² De Vitâ Propriâ, cap. xxiii.

break his head; the other lodging was less brilliant, but safe. Towards the end of his period of residence in Bologna, Cardan bought for himself a house near the church of S. Giovanni in Monte.

At Bologna he found his old pupil Lodovico Ferrari¹ lecturing upon mathematics; but the death of Ferrari happened when he had been scarcely a year in office as professor. Ferrari, as we have seen already, owed his whole position to Cardan, and must have looked back with some pleasure to the days when he and his master worked out together in Milan the problems of "that deuce of a Messer Zuanne da Coi."

Jerome formed also a friendship at Bologna with Mario Gessio, and received into his house soon after his arrival there Rodolf Silvester, a pupil who became a good physician, and was, after Ferrari, the most notable of all his house-pupils. During the eight years of his residence at Bologna, he received also two other pupils, Giulio Pozzo, native of the town, the only youth by whom his teaching ever was abandoned, and Camillo Zanolini, also native of Bologna, a good musician, who became a notary public, and was conspicuous for elegance of manners².

It has been said, that in the year 1562 the building of the University of Bologna, as it now stands, was com-

¹ Vitâ L. Ferrar. Op. Tom. ix. p. 568.

² De Vitâ Propriâ, cap. xxxv.

menced, and that up to that time the accommodation for the pupils and professors had been very bad; after that year it was of course no better until the building works had been so far completed as to admit of the opening of a few halls. Out of the difficulty that there was in procuring proper lecture-rooms, arose a vexation to Cardan of which he writes as if it had been a conspiracy against him. His enemies, he said¹, to prevent his room from filling, appointed a time for his lectures upon which followed immediately the dinner-hour, and gave the class-room at the same time, or just before it, to another teacher. To him Jerome proposed that he should do one of three things, either begin sooner and end sooner, so that there might remain due time for the succeeding lecture, or that he should find another class-room, or that Cardan should get another class-room, and one of the two be left in sole possession of the room, that could not be conveniently used by them both. By none of these suggestions was the difficulty to be solved; and therefore at an annual election day Cardan undertook formally to petition that the lecture clashing with his own might be elsewhere delivered. While this quarrel was at its height, the old physician was in other respects full of trouble, surrounded he thought, and in some degree perhaps truly, by conspiracies.

¹ De Vitâ Propriâ, cap. xvii.

Certainly there was no lack of rivalry and heartburning among professors who were in too many cases emulous and envious of each other. Cardan had a great name, and not a winning nature. While these quarrels were forming an under-current to his not unprosperous career at Bologna, a student of his class at Pavia, who had become a graduate, delivered an oration in his honour before the university in that town, which, even after great allowance has been made for the rhetoric of old scholastic declamation, is of a kind clearly to imply that the fame of Cardan as a physician and a philosopher remained extravagantly great. But he had not the art of soothing jealousies; and from Bologna rumours were industriously spread abroad, especially sent to the ears of his good patron and patient Cardinal Morone, purporting that Cardan taught an exceedingly small class. There seems to have been some ground for the statement; "it was not," said Jerome, "altogether true, for I had many hearers from the beginning of the session, and they all held by me till Lent."

Cardan was first Professor of the Theory of Medicine. Practice of Medicine had other teachers; and the first Professor of Practice was Fracantiano. One day, when Jerome had not long held his new office¹, Fracantiano was dissecting publicly, and disputing on the subject

¹ Because Fracantiano went from Bologna to Padua in 1563, and taught there till his death in 1569.

of an internal part before the whole academy. He quoted Greek in support of some assertion, and made the mistake which had been corrected by Cardan once before at Pavia, when Branda made it. He quoted a denial as an affirmation, by omitting the negative particle. Jerome, who had been dragged to the spot against his own will by his class, said, "You have omitted *ov*."

"By no means," said the disputant.

Jerome quietly affirmed the fact, and the students, after student fashion, directly became clamorous; the book was produced, and Fracantiano silenced. But the philosopher had made an enemy. Though he was so essentially a man of books, that a defeat by him in such a form might have been borne with a good grace, Fracantiano never could forget that he had been humbled in the presence of the whole academy. From that day he avoided Cardan with so much determination that he ordered his attendants to warn him when they saw that he was near, in order that he might turn aside and escape encountering him even in the streets. Amused at this enmity, some students contrived one day to beguile Cardan into a room where Fracantiano was presiding over some dissections. The professor so interrupted rose to depart instantly, and went with so much haste that he became entangled in his gown, and fell down with his face upon the floor.

If his mind had not been crippled past all cure by the torture suffered through his son's crime and its punish-

ment, it is certain that Cardan in his old age might have found comfort in his connexion with the University of Bologna. Such incidents as have been just detailed belonged only to the small jealousies of daily life, whereof there was perhaps no scholar who had not to endure his share. A Frenchman came one day¹ desiring to consult Cardan in private. The physician answered, that it would suffice if his attendants, who were present, did not hear their conversation. The Frenchman went away dissatisfied. "What had he in his mind?" asks the old man. "Some wickedness." The weaknesses of age being thus aggravated, it was impossible for Cardan to enjoy the abundant fruits of his renown that still surrounded him. All seemed to go well with him, certainly for some years, at Bologna. On settling in that town, he for the first time set up a carriage²; until then he had ridden generally on a mule. He used to go out in his carriage and return on foot, having made the change, not on account of luxury, but of his advancing age.

He had become, indeed, less reckless about money since his son's death. Before that time he had wasted much, and it was his own fault that he had not been rich enough, when there was yet time, to purchase Gianbattista's life. "If I were to relate," he said³ in his old age,

¹ De Vitâ Propriâ, cap. xlii.

² Ibid. cap. vii.

³ De Libris Propriis. Lib. ult. Op. Tom. i. p. 131.

"how much gold I have earned by my art, I fear that greater than the praise of my success would be the censure of my prodigality." At the same time, he recorded that he had cured more than ten thousand patients.

Nevertheless, except as a study, he did not like his profession. Its intellectual part had charms for him; but as a trade, as it was carried on in his day, with its internal wars and jealousies, and with the too-frequent meanness of its relations with the external public, he abhorred it altogether. "If I had money to earn," he said, "I could earn it as a doctor, and in no other way. But that calling of all others (except the glory that attends it) is completely servile, full of toil, and (to confess the truth) unworthy of a high-spirited man, so that I do not at all marvel that the art used to be peculiar to slaves¹."

Cardan's household at Bologna was established on a moderate scale, with very few domestics, and two readers or secretaries; he had of late usually maintained several readers in his house. His general affairs also mended almost from the first. Backed by his friends the cardinals, it was not only in Bologna that he found his prospects brightening. In September, 1563, nearly a

¹ De Libris Propriis. Lib. ult. Op. Tom. i. p. 131. "Si opes parandæ erant, medicâ arte, non aliter parare potuissem: at ea, si qua alia (gloriâ quæ illam comitatur exceptâ) tota servilis est, plenaque laboribus, et (ut vere fatear) ingenuo viro indigna, ut non mirer olim servorum fuisse hoc exercitum."

year after he quitted Pavia, Jerome found one night¹ that the collar of his shirt had become entangled with the string by which he suspended from his neck the emerald before mentioned, and a written charm. He puzzled himself for a time over the entanglement, and then allowed it to remain. Soon afterwards putting his hand to his neck, he found that the knot had become loose, and that the string was free. This portended, of course, some speedy unravelment of the knot in his own affairs. Since he had come to Bologna his little property in Milan had been held by his son-in-law, and he himself had received none of the returns. He had books which had been for a long time lying untouched at the printer's. He was lecturing without a lecture hour. His son Aldo was in prison—he is never to be heard of incidentally, except as party to some scrape—and there were two professors who obstructed all his doings at Bologna. All this knot of trouble, then, was to unravel itself. And so it did. At the end of the next July, nine months afterwards, Cardinal Alciat, who had assisted in procuring Jerome's appointment at Bologna², and who remained until the death of the old man an untiring friend—Cardinal Alciat caused the restoration to him of his property. He seems

¹ Paralipomenon, Lib. iii. cap. 11.

² Synesiorum Somniorum, p. 252; but the previous reference covers the other facts.

to have been deprived of it for a time by the imperfect rescinding of the sentence of banishment pronounced against him in his native town. In the succeeding month of August, Jerome received from his printer a parcel of the missing books, which had at last rapidly passed through the press. These changes reopened two important sources of his income. In the same month the professor by whom he was most obstructed quitted Bologna, giving up a salary of seven hundred gold crowns. There remained then only, says Jerome, the general conspiracy of the physicians.

Of Aldo¹, it will be enough to say that his foolish and abandoned conduct was the cause to his father of incessant trouble. Fathers, by the law of Bologna, had then many judicial rights over their sons, and Jerome more than once imprisoned Aldo, in the vain hope of checking his misconduct. He was the son to whom the stars had been so liberal in promises of all good things,—genius, fame, wealth, the confidence of princes; he was exiled at last, and disinherited. There remained by Cardan only the grandchild Fazio.

His right as a father Jerome had exercised as a citizen of Bologna, since the senate (from whom he received always much honour) had conferred on him the freedom of the city². He does not omit to tell us what he thought about his fellow-townsmen. “When I was at Bologna,”

¹ De Vitâ Propriâ, cap. xxvii.

² Ibid. p. 32.

he says¹, "I heard much about the manners of the people, and that they were deceitful; but that is not true. It is truer that they are ambitious and effeminate, and easily irritated. When they have begun to quarrel they are not led on by any care for equity or moderation, but they are resolved to win, even though it be against the right; for when you have offended them, they never stop to reflect whether they first caused the offence, but conceive an undying hate, so that it is doubly difficult to deal with them. Some are magnificent, beneficent, and reasonably civilised and polished. The chief thing, therefore, is to give them soothing words while pertinaciously adhering to your rights, and never slip from your main point. For when they have no right to show in a contest, they use cutting words, and put them in the place of justice. A thing certainly to be found hard, especially by those who are not used to it. Wherefore it is better to dispute with them on paper than by word of mouth, and through an arbiter than man to man."

After he had lived four or five years at Bologna, Jerome could, at least while occupied in writing philosophically, believe that his mind was tranquillised. "I am poor," he said², "sick, and old. I am bereaved of my best son, my best hope, the youth most dear to me, by a wrong;

¹ Proxenata (ed. Elzevir), p. 467.

² De Libris Propr. Lib. ult. Opera, Tom. i, p. 136.

from my other son I have but slight hope of happiness, or of the continuation of my family; my daughter, now nine years a wife, is childless. I who once flourished so strongly am now happy, in spite of all reverse. I teach with my mind bent wholly on the duty, and therefore with a most numerous class. I manage my affairs more wisely than I used; my latest writings, if anybody will compare them with my former works, will show that my mind is fuller, livelier, and purer than it ever was before." So, pen in hand, and with a train of philosophic meditation in his mind, he could deceive himself, and even at times prove that his son's fate had been a blessing. Inasmuch as he had reformed his household, and had become more prudent in the management of money, he had grounds for his assertion that he had improved by his affliction. It is true also that as a philosopher, whenever his topic was of a purely contemplative kind, grief had improved rather than impaired his powers. He was writing at that time a work "On Nature;" and admonished by his approach to the allotted term of mortal life, was engaged upon several books under the title "Paralipomenon," in which he put down, each under its own head, much that he had to communicate on all the subjects he had spent his life in studying, and for which it was not likely that room would be made in future treatises. In this work are books on Algebra, Medicine, Natural His-

tory, Mechanics, Speculative Philosophy, embracing in fact almost the whole wide range of study to which his intellect had been devoted. The task it implied was a final heaping up before he died of all the chips that remained in his workshop. He wrote also at this time many shorter essays and dialogues, of a purely ethical character. A strong spirit of meditation was upon him, and it is certain that he relied in his books more practically for consolation and support upon the doctrines of Epictetus than upon those of the Church. That may have been the scholar's tendency, but it is very noticeable, and the fact is important in its bearing upon the events next to be told.

In the year 1565, on the 21st of January¹, a new governor came to Bologna. During the night Cardan's bed was on fire, and the boy, who slept on a chair-bed in his room, roused him and told him of his danger. Jerome awoke in anger, thinking the boy drunk; but seeing that he spoke truth he got up, and assisted in smothering the fire. Then being very tired, he fell asleep again; and on awaking found that more of his bed had been burnt. The painted quilt had not been injured, nor the leather covering, nor any of the hangings, and only a small part of the linen had been touched; but the blankets (there were three) were burning. The fire was not easily conquered; there

¹ Paralipomenon, Lib. iii. cap. 52, for the following.

was flame with it and not much smoke, and little harm done. Upon this Cardan divined that the smoke signified infamy, the fire peril and fear, the flame great and present risk of life. The hidden fire represented dangerous snares laid by domestics. The fact that the bed had been set on fire by himself portended that the danger would arise within his own house, and that he should overcome it without external help. The fire was the magistracy. On account of the fire, flame, and smoke, the danger would consist in accusation, not in violence or poison. It would seem to be often allayed, and yet often break out again; there would be peril, not from sharp contest, but from flattery and bad faith, not without danger of the loss of all his published books, of all his possessions; and, above all, of his life. The books, however, would not be hurt; for they were near his bed, and the fire did not approach them. He should not judicially lose character, because none of the hangings were burnt; nor life, because the innermost parts of the bed were safe; nor property, because the quilt had not been damaged. He concluded, therefore, that he should suffer in vulgar esteem, and be put to a considerable expense through negligently having faith in false domestics. The citizens might enter into the matter, for they were as it were conjoined. On the whole the loss would be little, the danger moderate, the disturbance great.

It is hard to say whether this prophecy was considered to be fulfilled, when, five years afterwards, on the 13th of October, 1570¹, Cardan, then nearly seventy years of age, was suddenly cast into prison. He does not tell us why, but there is the strongest ground for believing that it was upon an accusation of impiety. The reasons for that opinion will appear in the succeeding chapter. In prison he was liberally used; and after a confinement of eleven weeks, on a Friday, the same day on which he had entered, and at the same hour of the day, in the evening twilight, he returned to his own house.

He was not released, but suffered to take his own house for a prison, having given a bond in eighteen hundred gold crowns for his honesty as gaoler to himself. After the bond was signed, and the officials had departed, his faithful pupil Rodolf Silvester—who graduated the year afterwards—being left in the prison with him, and the door being left open, the afternoon sun at the same time glittering through the window, Jerome asked his friend to shut the door. It closed with a slam, and at the same time there was a sudden blow upon the window. Jerome and his friend both heard and saw it. It was, of course, the natural effect of the concussion of air, caused by the shutting of the door. But Cardan dwelt upon it as a

¹ The narrative to the conclusion of the chapter is from a comparison of *De Vitâ Propriâ*, cap. iv. with cap. xliii.

portent, and a sign of his own certain death that was approaching. "But afterwards," he relates, "I began thus to reason with myself: if so many princes, even in their youth, and strength, and happiness, expose themselves to certain death, that they may win approval from their kings, when they have nothing else to win by dying, why should you, a withered and almost infamous old man, not suffer for your crime, if they hold you guilty, or by wrong if you are undeserving of this evil before God, who, by His mercy, shows that He beholds all your affairs?" With these reflections he went home refreshed and fearless.

This calamity had been preceded by another portent. He was writing a medical opinion for the use of his patient, Cardinal Morone (it is published among his works), when a leaf of it fell to the ground. He rose that he might stoop to pick it up, and as he did so the paper, marvellous to behold, lifted by a gentle wind, rose with him, and flew upon the table, where it remained fast in an erect position. Jerome called Rodolf to see the marvel, and both saw that the leaf was scarcely stirred. From this he concluded that his concerns would suffer sudden overthrow, but that they would be lifted up into a right position by a gentle breeze of favour.

He had reason, therefore, to expect what happened, or he would not have thought of drawing such an inference.

The gentle breeze came to him from the expected quarter, from the friendship of the leading cardinals. After eighty-six days of imprisonment within his own doors he was set at liberty ; but he was forbidden to publish any more books, and as a point of courtesy advised by his friends voluntarily to resign his chair. He did so; and they having then obtained for him a pension from the pope, the famous philosopher, seventy years old, left Bologna in September, and during the first week of March, in the year 1571, entered Rome. A victory over the Turks was on that day in course of celebration.

CHAPTER XII.

THE END AT ROME.

"He cometh in with vanity, and departeth in darkness, and his name shall be covered with darkness."—*Ecclesiastes* vi. 4.

THIS mournful story of the vanity of wisdom draws now to a close. Cardan's imprisonment at Bologna had taken place under the pontificate of Pius V., a pope of pure but austere life, who had caused the strenuous enforcement of laws against heresy and blasphemy, and who combined with many noble qualities the character of a most stringent persecutor. He forbade physicians to attend patients who had passed three days without confession of their sins; he expressed disapprobation with his officials in any town that did not yield yearly a large crop of penal sentences. The imprisonment of Jerome at Bologna was a result, I believe, of this activity, and yet it was from Pius V. that Cardan received a pension, and under his wing that he spent his last years safely in Rome as a private person.

M. De Thou relates, in the history of his own times¹, that he saw at Rome the great Cardan, walking about the streets, not dressed like any other person, had often wondered at him and had spoken with him. He records at the same time the character he bore: that he was "a madman of impious audacity, who had attempted to subject to the stars the Lord of the stars, and cast our Saviour's horoscope."

Immediately after Cardan's death, and during the succeeding century, this charge of impiety attached to him, and he who had taken so much pains to remain on good terms with the Church, was known traditionally as a man who had blasphemously calculated the nativity of Christ (Naudæus shows that he was not the first astrologer who did so), and was occasionally named as a rank atheist. Now it appears from De Thou that a character of this kind attached to Jerome when he lived at Rome; and at the same time it is a fact, that, with all his extravagant freedom of self-revelation, any mention of such imputations has been carefully excluded from his works. We detect their existence indirectly in one or two sentences, already cited, as when Cardan at Pavia, dreading evil, thought that passages in his own books might be twisted to his hurt, and wrote a letter to Rome dutifully sub-

¹ Thuanus, Lib. lxii. Tom. iii. p. 462, ed. Lond. 1733.

jecting them all to the authority and pleasure of the holy council, or when, afterwards, he wrote about a dream, that in the name of religion he should be put into grave peril. But in his dealing with princes and with the Church we have throughout seen that he was scrupulously prudent. During the latter years of his life the Church was subject to an ecclesiastical discipline more than usually rigid. The conflict against heresy and impiety had become, under Pius V., most earnest and severe. If Cardan's enemies or rivals brought against him in any town in which he resided accusations of impiety properly substantiated—his philosophy, and sometimes his superstition, being of a kind to provide plenty of evidence, while spies in his household might find plenty more—the authorities were bound to take sharp cognisance of the offence, and nothing less than a few strong friends near St. Peter's chair could save him.

Such accusations being made and credited, Cardan could only increase his peril by becoming contumacious, as he might be considered if he complained of them, and endeavoured to deny them in his works. He himself had stated that he did once construct such a nativity as that of which he was accused, and he had said so many things in the course of his works in a speculative way, not fearing to handle the sublimest mysteries, that, good Catholic as he professed himself to be, it was not difficult to show

that he was liable to heavy penalties. To all this operation of the age against him, to the stringency of the new ecclesiastical spirit that had succeeded to the laxer times of Jerome's youth and manhood, the old man could oppose in self-defence nothing but silence and submission.

Thus he wrote of the accusation against him by which he was cast into prison at Bologna: not that he was innocent, but that he ought to know how to endure the punishment of his crime if he was guilty, or the wrong if he was innocent, before God. He ventured no further than to leave the question of his guilt or innocence entirely open. But even such distant allusions are extremely rare. He took the wisest course, and as he could not write what was untrue, and would not write what might be used for his destruction, he wrote nothing at all upon so hazardous a subject. We find, therefore, no reference in his books to the impiety with which it is notorious that he was charged, and it is for that reason, I believe, that we find no precise account of the causes of his banishment from Milan and of his subsequent confinement at Bologna. This accords, indeed, with his expressed doctrine, for in a Book of Advice written two or three years before his death at Rome, in the course of a chapter on Calumny—from which, by the way, we may infer that he was annoyed at

the accusation of insanity—we find him writing: “When the calumny is about religion (for in these days that is the most perilous kind) never confess that you have erred; but it is best wholly to pass the subject over¹.”

At Milan he had been struck off the list of teachers, and we have seen also that for a time the printing of his books was stopped. He had, however, in good time, formally submitted all his writings to the authorities of Rome, and this precaution, as he says, saved him from peril. After his imprisonment at Bologna he was again prohibited from teaching, and was also finally prohibited from publishing his works. The prohibitions then imposed were not removed during his lifetime; and it was not until some time after his death that a few of his last manuscripts, which had been preserved, were given to the press. The cardinals who on the last occasion intervened again to protect the philosopher in his declining years, did not repeat their effort to remove the interdict upon his writings.

Though taken alone the fact is an odd one, that a philosopher imprisoned for impiety should be rescued by the leading cardinals, removed to Rome, and pensioned by the Pope, I think it may be accounted for without

¹ Proxenata, cap. cxi. Opera, Tom. i. p. 455.

imputing any inconsistent or improper conduct to the Church authorities.

In the first place, of Cardan himself it may be said that he had among learned men the greatest name in Italy, and it was not natural that any rightly-disposed scholar should be content to see him die in prison. If any of his speculations had been rash, they had not originated out of any spirit of antagonism to the Church, to which he had always formally professed his desire to act as an obedient child. He was not, therefore, an antagonist whom it was proper to destroy, but simply an offender whom it was merciful to pardon. In his conduct throughout life, and especially since his son's death, it was easy to find evidence of unsound mind in mitigation of his crimes against Church discipline.

In the next place, it should be said that Cardan's friends were in the main pure-minded people, actuated by generous and worthy motives. Cardinal Borromeo was a spiritual man, a just and strict son of the Church, himself a zealous lover of good discipline, but he knew Cardan intimately, he honoured his intellect and understood his eccentricities; the physician, too, had saved his mother's life. It was not unnatural or unchristian—if I may say so, not uncatholic—in Borromeo, who worked as a trusted brother with the new Pope, to suggest, that as

Cardan certainly was not a contumacious heretic, and, being scarcely of sane mind, seemed to have gone astray unwittingly, respect might be paid fairly to his unexampled learning and the lustre of his name. He could urge, therefore, that it would be a wise and sufficient measure in his case, simply and without harshness, to take care that he should not again disseminate any opinions either by lectures or by books, and that it would be prudent to substitute for the means of subsistence so taken away a pension that would for the future keep him out of mischief, by compelling him to live at Rome, under the control of the Pope, as his immediate dependent¹.

Cardinal Morone, too, had long been indebted to Cardan's skill as a physician, and being a most intelligent and able man, had a sincere respect for him as a man of genius and intellect. Morone had been the foremost Churchman in the last sittings of the Council of Trent held at Bologna, and by writers of every creed he has always been looked back upon with a sincere respect. He was a just, temperate, and accomplished man, second to no other cardinal in influence; and the patronage was irresistible when he joined Borromeo in commending Cardan to the favourable consideration of the Pope.

¹ For the account of Cardan's patrons and friends of Rome, see *De Vitâ Propriâ*, cap. xv., which is the evidence for all that follows till a fresh authority is cited.

Not less earnest than these friends, and constant to the last in his care over Jerome's fortunes, was Cardinal Alciat, who had inherited, with the goods of Alciat the lawyer, the strong friendship which that great man had maintained with Cardan the physician.

The philosopher found also at Rome a firm friend and supporter in another cardinal, Pietro Donato Cesio; and he enjoyed most liberal patronage from the Tridentine cardinal, Cristofero Mediuzio. The Venetian cardinal Amulio was also his friend. He enjoyed, too, the direct favour of the venerable Bishop Taddeo Massa. Of other friends of Jerome in his last years I need name only one, the Prince of Matelica, a small town in the Roman States, upon whom the old man pronounces an unusually warm panegyric for his royal qualities, his most extensive knowledge, his amenity of manners, his vast wealth, the splendour of his father's house, his wisdom, almost more than human. "What was there in me," exclaimed the old man, "that could bring me into friendly intercourse with such a man? Not benefits conferred, not hope of anything that I could do, old and despised by fortune, prostrate, no agreeable companion; if he loved me for anything, it was but for his opinion of my probity."

Jerome had also a familiar friend in his pupil from Bologna, Rodolf Silvester, who, having graduated, went at once to establish himself as a practitioner in Rome, and

often frequented the house of his old master. Cardan lived at first in the square of St. Girolamo, afterwards in the Via Giulia, near the church of S. Maria di Monte Santo¹. He had also one pupil, his name was Ottavio Pitio, and he was from Calabria².

Aldo Cardan was disinherited. The child Fazio lived with his grandfather, and was his heir. The old physician's property had been saved to him; it included the possession of a house or two at Milan, one at Pavia, another at Bologna, and these, with whatever else he owned, although they did not amount to much, and bore a very small proportion to the earnings of his life, yet formed a patrimony four times larger than the little that he had inherited from Fazio his father³. To his grandson Fazio all this was left, and to his heirs⁴. The whole property was to stand together, and to be subject to regulations that were equivalent to an entail. Young heirs, by the terms of his will, were to be kept under guardianship as long as possible, "for certain reasons known to himself." Whatever manuscripts he left behind him were to be corrected, and eventually sent to press. Heirs belonging to his family who had not his own name should take it on inheriting his property. When succession failed, the house at Bologna was to

¹ De Vitâ Propriâ, cap. xxiv.

² Ibid. cap. xxxv.

³ Dialogus cum Facio Cardano. Opera, Tom. i. p. 639.

⁴ For the contents of Cardan's will see De Vitâ Propriâ, cap. xxxvi.

become the property of the University for use as a college, to be called the College of Cardan.

Another family arrangement made by Jerome when he left Bologna is extremely characteristic. The Cardans had for their arms a red castle with its turrets, the turret-tower being in the middle, and black on a white ground, by which it was distinguished from the arms of the Castiglione family. For further distinction, the emperor had added to the shield of the Cardans an eagle without a beak, and with its wings outspread upon a golden ground. The occasion of his imprisonment suggested to Cardan the substitution for the eagle in his seal of the image of a swallow singing under a shade or cloud. He took the swallow, he says, because it suited his own habits; it did no hurt to mortals, did not shun the dwellings of the poor, was always busy about the human race, yet never on familiar footing with it; it changed its dwelling often, went and came, was connubial not solitary, yet not disposed for living in a flock; it had a song wherewith to pay those who were friendly to it, and it was impatient of confinement. Other parallels were its carrying, small as it was, beautiful stones within its belly, its delight in mild air and warmth, its grateful remembrance of a hospitable roof, and its being conquered by no other bird in flight¹.

¹ De Vitâ Propriâ, cap. xxxiii. for the preceding.

Although prohibited from printing, Jerome wrote industriously, as it would seem, to the very last month of his life, during the whole six years of his residence in Rome. He carried on to the end his third and last treatise *On His Own Books*, which is very long, for towards the close of it he became garrulous, and not only played the part of analyst and critic on himself as a writer, but discoursed very cleverly and much at large upon the several branches of study and the principal styles of composition, adding his opinions on book-writing, with much sound and shrewd advice to authors. He supplied them also at the same time with a practical example of good conduct, for when he had been three years in Rome, and was engaging himself upon the final revision of the labour of his life, he burnt no less than one hundred and seventy of his books¹ which he thought useless, after extracting from them what was good. Yet, after all, he said, that he left behind him² one hundred and thirty-one works printed, and one hundred and eleven in manuscript, not twenty of which have seen the light.

His sick mind turned sometimes with loathing even from his dearest labour. Thus he sat down one day towards the end of his life, and told how yesterday he supped quite cheerfully, and after supper was seized with

¹ *De Vitâ Propriâ*, cap. xlv.

² *Dialog. cum Facio*. Op. Tom. i. p. 639.

so deep a loathing of all books¹, whether his own or those of other men, that he could not endure to think of them, still less to look at them. And that feeling, he said, remained while he was then writing. I know, he added, no reason for this, excepting melancholy.

But there was reason for the melancholy. An ancient hope dwelt in his memory while he was arranging his books in expectation of approaching death. "My hope," he wrote in the end², "had been, that after my death they would be edited for me by my son, but that comfort is gone. They wished to destroy not him but me."

Nearly all his writings in the last years of his life were contemplative or admonitory; he dealt in advice or philosophic meditation. The chief exception was a copious work on the interpretation of dreams, which, together with the dialogue by which he had intended to immortalise the English boy, was published nine years after his death at Basle³. One of the last of his writings was a dialogue between himself and his father's ghost, in which his mind reverted to the days of his youth, while he explained the sorrows of his age, and received comfort from the other world. But there was hard comfort in one sentence that he placed upon his father's lips: "What of your sons?"

¹ De Vitâ Propriâ, cap. lii.

² De Libris Propriis. Lib. ult. Op. Tom. i. p. 121.

³ Somniorum Synesiorum, Libri iv. &c. 4to. Basle, 1585.

Have you not lost them by your negligence and your licentiousness¹?" And who shall judge this old man drooping painfully under his heavy and enduring sorrow!

He was lavish of advice. Few men could teach better how to manage the affairs of life discreetly, and no man ever fell into more trouble through his own want of discretion. One of his last works, dictated at Rome, and found long afterwards in the handwriting of a wretched scribe, full of abbreviations (things which Cardan himself detested²), was a long treatise under the title of *Proxenata*, which was a guide to men who would manage themselves wisely and safely in every relation of society. When it was first issued, half a century after Cardan's death, from the Elzevir press, a second title was given to the book, and it was fairly enough said to be on *Civil Prudence*. In this work it is to be seen that, as a philosopher, Jerome's faculties remained to the last clear and lively. There is the old terseness in it, and more than the old wisdom. When Cardan, in his old age, wrote upon any abstract subject and forgot himself, there was no trace of the warping of his mind; he maintained perfectly the tone and spirit of a man of genius and a scholar. But in the daily business of life and in writing, whenever the

¹ Dial. c. Facio. Op. Tom. i. p. 639.

² See the preface of the editor to the Elzevir edition of *Proxenata seu de Prudentiâ Civili*. 12mo. Lugd. Bat. 1627.

topic happened to be personal, the wounds suffered by him in his conflict with the world could not be hidden. I cite two or three words of sense gathered at random from this book¹.

“It is manifest that he who would live to the best purpose should know what he wants, and that not only specially on each occasion that arises, but generally of the whole course of his life.

“Men rule over their fellows through religion and force, or the art of fighting, or by necessity, as with the doctors. Many men, therefore, have found it advantageous to combine the art of fighting with religion.

“In teaching youths who receive reason ill, use jests. Tell them, for example, when they prefer pleasure to truth, that they mistake butterflies for birds. In the same way you can escape out of a difficulty and give the blow you ought to take; as when it was complained against me that I had given a false prognosis when in consultation with some other physician, I said, ‘It would be odd, indeed, if anything were done rightly in which he had part.’

“Instruct the mind as you bridle a horse, that it may run whichever way you turn it.

“Receive equals as your betters, paying honour to them.

¹ Proxenata (ed. cit.), pp. 63, 68, 90, 101, 113, 121, 129.

"Publish no crude books; they disarm you, and pass over to the enemy.

"Talk little. Do not relate common things that have happened to you, still less tell your secrets.

"Words uttered without thought are heavy losses.

"Do not carry out by day what you have resolved upon in the night, for by night things appear what they are not, as in dreams."

It would be easy to fill chapters with such wisdom taken from this single volume that was dictated by the philosopher in his last days. But their end is near, and there are other aspects of his life on which we now must dwell. If in his youth Jerome inherited from his father any opinion concerning guardian spirits, we have seen that in his maturity he rejected the idea that he was attended by a demon. After his son's death he manifested a disposition to maintain it, but in his old age he was to be found firm in his persuasion of the fact. He had been long persuaded, he said¹, that he was attended by a presiding spirit, called in Greek an angel; such spirits had attended certain men, Socrates, Plotinus, Synesius, Dion, Flavius Josephus, and himself. All had been fortunate except Socrates and himself, though he, too, was in a condition of which he ought not to complain. In what way he was admonished by the spirit he could

¹ De Vitâ Propriâ, cap. xlvii.

scarcely tell, but that he had been often secretly prompted he was unable to doubt. Thus, when he was walking one day in the streets of Milan, without any reason known to himself for doing so, he crossed the road, and immediately afterwards there fell from a roof, near an upper window of the house under which he should have been passing if he had not changed his course, cement enough to kill eight oxen¹. Another time, when riding on his mule, he met a coach, and had an instinctive thought that it would be overturned, for which reason he passed on the wrong side of it, and as he was passing it did overturn, in the direction contrary to that which he had chosen.

Invited to a supper at Rome², Cardan remarked, as he was sitting down among the guests, "If I thought that you would not take it ill, I would say something."

"You mean to say," one of the company inquired, "that one of us will die?"

"Yes," the old man answered, "and within the year."

On the 1st of December following died one of the party, a young man named Virgil.

"Bring me a paper," Cardan said to an old pupil of his, Gianpaolo Eufomia, who was then at home—"I have something to write for you." The paper was brought, and the physician wrote under the young man's eyes, "You

¹ De Libris Propriis. Lib. ult. Op. Tom. i. p. 150.

² De Vita Propria, cap. xlii, for the three next incidents.

will die soon if you do not take care." He was taken ill eight days afterwards, and died in the evening. But, says Cardan, I saw that in no mysterious way; it was plain to me as a physician.

Though treasuring up every incident of justified foreboding that arose out of the incessant watchfulness for omens, Jerome was conscientious in his superstition, and where there had been no foreboding he did not claim as a mystery the chance fulfilment of words lightly spoken. An instance of this he set down in his old age: "I remember," he said, "when I was a youth, that a certain Gian Stefano Biffo had been persuaded that I was a cheiromancer, when I was, nothing less. He came and asked me to predict to him something of his life. I told him that he was befooled by his companions; he urged me; I then begged his pardon if I should predict him anything too serious, but that he was in great danger of being promptly hung. Within a week he was seized and put under torture; he pertinaciously denied the charge against him; nevertheless, in six months he died by the cord, after his hand had been cut off."

It is not at all necessary to doubt any of the marvels that Cardan relates. A man who sees in almost every occurrence of the day a portent upon which to speculate, who is thoroughly and honestly superstitious, may be able, in the course of a long life, to store up a very large

number of extremely curious coincidences upon which to feed his faith. Of this fact we will select as a final illustration the story of a morning spent by Cardan at Rome¹ only six months before he died, he being then seventy-five years old. It seemed to him so wonderful, that when he went home he set it down at length in his book "Upon his own Life;" an elaborate thesis on his own career and character, which he had just time to complete before he died:—On the morning of the 26th of April, 1576, he mounted his carriage—for he used it at Rome as at Bologna—to go into the forum. On the way he got out, because he wished to dive into a narrow court that led to the house of a dealer in gems, with whom he had business. As he left the carriage, he bade the driver, who, he says, was a torpid fellow, go and wait for him at the Campo Altovitaro. He answered "Yes," but misunderstood the direction, and the old man, when he himself went to the place appointed, found no carriage. He was loaded with bags which he had brought from the jeweller's, considering that he should not have far to carry them. With these in his hand he walked towards the residence of the governor of the castle, to the vicinity of which he thought it likely that his driver had gone by mistake. On the road he met an old friend, Vincenzo, of Bologna, a musician, who was surprised to see the feeble

¹ De Vitâ Propriâ, cap. xlix.

old gentleman with his hands loaded and without his carriage. Jerome went to the castle, and not finding his man there, was compelled to journey back again over the bridge. He might, he said, have begged a carriage from the governor, but in so doing there would have been risk. Commending himself, therefore, to Heaven for the gift of patience, he went back over the bridge, and when he had crossed it, obtained rest at the other end by going into the house of the banker Altovito, professing to ask something that he wished to know about a late change in Neapolitan money, and sitting down to recover strength while he was being told about it. While he was so sitting, the governor came in, and Jerome at once rose and departed. Outside he saw his carriage, the driver having been met by Vincenzo, who told him of his error. Still the old man was in doubt whether to go home, or what to do, because he suffered not only from fatigue but from long fasting. But then, having mounted into the vehicle, he found three raisins in his pocket, and so his difficulties were entirely ended. "Here," he said, "you must observe the sequences: the meeting with Vincenzo, his meeting with the driver, my going into the bank, the governor's coming in, my going out, and because I went out just at that time, my meeting with the carriage, and upon that the finding of the raisins. Here were seven things, of which it was necessary that every one should fall out

exactly when and where it did for the attainment of the required result. Such things do not happen to every man."

Jerome Cardan was not forbidden to exercise his profession during those last days at Rome; but at the period to which this last incident refers, after his seventy-fifth year, he had abstained from all labour for the sake of money, unless he liked the people with whom it was desired that he should deal¹.

Looking back upon the life that was almost completed, and conscious that its leading events had all been more or less revealed in his past writings, either by scattered hints or by brief narratives, Cardan, in the book upon himself which occupied his latest leisure, and was the summing up of his intellectual accounts with this world, rather presupposed a knowledge of his career than engaged himself upon the composition of a distinct autobiography. Brief narrations in earlier writings had been so contrived, that, as he said when giving one of them, "What I have told elsewhere diffusely I tell shortly here; what I have told elsewhere shortly I tell here at length²." In the last book, therefore, devoted wholly to his life³, there is one short chapter

¹ De Vitâ Propriâ, cap. xxiii.

² De Ut. ex Adv. cap. ii. 112.

³ It was first published in 1643 by Gabriel Naudæus, who prefixed to it a judgment on Cardan that has done much to disseminate a false opinion of his character. The same "judgment of Naudæus" is unluckily prefixed also to Cardan's collected works. Its narrow reasonings have therefore influenced most readers of Cardan's last book.

of rapid narrative, and all the rest is self-dissection; it contains a chapter on his vices and another on his virtues; one on his honours, one on his disgraces, a long one on his friends, a very short one on his enemies, of whom he will not speak. One chapter compiled by the old man is a long list of the illustrious contemporaries who had named him in their works. The book abounds, of course, in personal information and self-revelation; but his mind was bowed down to the dust when he was writing it. He was the sorrowful old man whose hopes were wrecked, and who was to be met in the streets of Rome walking with the strange, unsteady gait of a lunatic¹, dressed unlike other people, a man to be wondered at by strangers, and by his own friends apparently considered mad. His book contains everywhere traces of the rack on which his spirit had been tortured. Grief for his dead son is still the ruling thought, and one of his very latest writings is a *Nænia*²—a funeral song—placed near the end of his last

¹ De Vitâ Propriâ, cap. xiv.

² Ibid. cap. I. The lines translated in the text are these:

“O sanctissima conjunx,
Felix morte tuâ, neque in hunc servata dolorem!
Ipse ego, nate, tuum maculavi crimine nomen:
Pulsus ob invidiam patria, laribusque paternis,
Debueram patriæ pænas, odiisque meorum;
Omnes per mortes animam sontem ipse dedissem,
Contra ego vivendo vici mea fata, superstes.
Sed tamen æternum vivet per sæcula nomen,
Nate, tuum: notusque Bactris jam notus et Indis:
Mortuus es nobis, toto ut sis vivus in orbe.”

book, to the memory of Gianbatista. The old man, too, from the edge of the tomb looked back to the wife who had shared his earlier and lesser sorrows:

“O hallowed wife, most happy in the gain,
By death, of freedom from this weight of pain!
O son, whose name is stained by my own sin,
I too neglected suffer through my kin.
From home and hearth thrust out, I conquer fate.
Hurts from my country, from my kindred hate,
Of envy born, kill me, and yet I live.
But through all ages shalt thou, son, survive;
For Ind and Bactria shall his tale rehearse,
Who quitted me to fill the universe.”

Such were the latest thoughts of Jerome Cardan in his desolate old age. Beyond them there was in this world nothing but the grave. He died at Rome on the 20th of September, 1576, when he was seventy-five years old, and his body was deposited in the church of St. Andrew. Afterwards, probably by his grandson in fulfilment of his own desire, it was removed to Milan, to be buried at St. Mark's¹. There he again slept with Fazio his father.

¹ Thuanus, loc. cit.

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CARDAN, JEROME.

Leading Events of his Life.

VOL. I.

1501. Sept. 24th. Born at Pavia, p. 6. His father an old lawyer, studious of geometry, his mother a young widow, 1-6.

- 1501—1504. Among nurses, a neglected infant, 8—12; 35.
- 1504—1508. With his parents in Milan, a tormented child, 11, 12—17; 35—37.
1509. After a severe illness dedicated to St. Jerome, 18.
- 1509—1519. His youth, 24—32. Early instruction, 26, 28, 31, 32. Admonished by the death of a young man, 25, writes on the Earning of Immortality, 25, 91, also a geometrical tract, 27, 91, and, being already a gambler, a Treatise upon Games of Chance, 28, 92—95. Is taught music secretly at his mother's charge, 45, and earns money by giving lessons upon dialectics, 45. Claims proper education, 31, 42, 43.
- 1520 is sent to the University of Pavia, 44.
- 1521—22. His mode of study there, 46, 47. He teaches Euclid, 46, and begins another treatise, 47.
- 1522—23. The schools being closed by war, remains at home, writes mathematical commentaries, abjures law, and determines to study medicine, 48, 49.
- 1524 goes to the University of Padua, 50; his father dies, 51; there are disputes about inheritance, 55, 56.
1525. Assumes the costly office of Rector Gymnasii, 58—63; to his mother's loss, 63. Forms a friendship with a student named Ottaviano Scoto, 63, 64.
1526. Graduates as M.D. after two rejections, 70, 71, and by advice of a kindly professor begins practice at Sacco; goes there on his birthday, Sept. 24th, 73. His sense of impotence, 73.
- 1526—32. At Sacco, 71—86. Writes treatises, 75, 95—99, 101—103; gambles, 77, 78; in 1528 has tertian fever, 78; in 1529, quits Sacco for a few months and attempts to establish himself in Milan, 78, but returns defeated and very ill, 79, 80. Towards the end of 1531 marries at Sacco Lucia Bandarini, 83—86.
1532. In February, goes with his wife to Milan, 112, 113. Is excluded from the College of Physicians, 114; fails to establish himself; his wife miscarries twice, 115. Believing that they see an opening, 116, in the year towards the end of April, they remove to Gallarate, 116. Fortune still frowning, Jerome writes a treatise upon fate, 117.
- 1533, May 14th, eldest son born, and named Gianbatista, 120. Having only earned forty crowns in nineteen months, returns with his wife beggared to Milan, and they go into the poorhouse, 123. Archinto, a young patron, obtains for him a small appointment as lecturer on five subjects under the endowment of one Thomas Plat, 125. He begins five books, 126, 131.
1534. Physician to Augustin Friars, 129; cures their prior, his first patient of note, 130. Writes on the Bad Practice in Use among the Doctors, 139, and other works; among them begins an Arithmetic, 142.
1535. His college friend, Scoto, becomes a printer, publishes "The Bad Practice in Use among the Doctors," and Cardan appears for the first time in print, 142, 143. The book fails, and damages its author, 145—147.
1536. In the same year Lodovico Ferrari comes to Cardan as a servant, 148, 265, is made a pupil and associate, 266, and shares his studies in mathematics, 149. Cardan is invited to teach medicine at Pavia, but declines to do so without certain stipend, 150. He tries in vain to please the Pope, to whom he journeys (to Placentia), 150, but acquires some other strong friends, 151, 156; makes a strong enemy, 151—153. Is cried down as an astrologer, 153, 154. Begins a Life of Christ, illustrative of his Nativity, 155, and has a daughter born named Clara, 161.
1537. Writes books on Wisdom and Consolation, 159, 188—198. Dallies with the

- College of Physicians, 161. On the 26th of July his mother dies, x., 162. By the friendship of a drug-gist he is introduced as a physician to the Senator Sfondrato, whose sick child he cures, 163—165, and whom he wins for a warm friend, 166. At this time he believes and writes that he has cured cases of consumption, 168.
1538. At work on his *Practice of Arithmetic*, 171, which next year is published, 172—179, with his portrait on the title page (title to Vol. I., vignette). On the second of January in this year, Tartalea at Venice is applied to on the part of Cardan for certain mathematical rules known to him, which it would be advisable to publish in the *Practice of Arithmetic*, 222, 227. Tartalea replies uncivilly, and there ensues a correspondence, 227, 246, which results in an interview on the 25th of March, at which Tartalea communicates to Cardan the rules known to him under a vow of secrecy, 246—253. Tartalea, however, fears that his secret will be divulged, and is uneasy until he receives from Cardan a published copy of the *Practice of Arithmetic*, sent from Milan on the 12th of May, 253—258. Tartalea's discontent grows during the remainder of the year, and by the succeeding January becomes permanent, 258—264. In this year, 1539, Sfondrato, and other friends, including the Marquis d'Avalos, force an entrance for Cardan into the body of the Milanese College of Physicians, 173, 174. Appended to the *Practice of Arithmetic* is a manifesto, 182—184, calling attention to the author's many unprinted works. In consequence of this, Osiander, a scholar of Nuremberg, and Petreius, a printer, offer respectively to edit and publish anything he will send, 184,
1540. which is the beginning of his fame, 185.
- A Milanese patrician, Antonio Vimercati, gambling with Cardan, and losing to him about a gold piece daily, 201, 202; other means of livelihood fall into abeyance, during this year and the next,
1541. when he is rector of the College of Physicians, 200; writes little, but studies Greek, and gambles. In the year
1542. at the end of August, Vimercati forswears dice, 202, and Jerome is left in sudden penury. He goes then to his friend the Marquis d'Avalos, who is at Florence, and on the way home visits Sfondrato, who is now governor of Sienna, 203.
1543. On the 25th of May his second son, Aldo, is born (vol. ii. 26), 205. The University of Pavia, driven by war to teach at Milan, cannot maintain professors, and offers the chair of medicine to Cardan, 204. He accepts it, since it will not take him from home.
1544. The university returning to its own town, Cardan, through Sfondrato's influence, 206, is asked to retain his chair, but intends to decline. On the night before giving in his refusal his house tumbles down. Accepting the omen, he revokes his determination, and goes to Pavia as Professor of Medicine, with a salary of 240 gold crowns, 205.
1545. The information obtained from Tartalea, having developed since 1539, by the continued application of geometry to algebraical investigations, 274, in this year Cardan publishes, through Petreius of Nuremberg, his *Algebra*, 272, an original work, in which the whole doctrine of cubic equations is first made known, and many great improvements are made in the science, 275; 269—276. This work following upon a series of other publications, 277—284, establishes

- him in great fame, 284—309. In the succeeding year,
- 1546, there being no public funds at Pavia, Cardan does not lecture there, 302, but writes at Milan for six months, almost without intermission. Lucia, his wife, dies at the close of this year, 303, 304.
- VOL. II.
1546. In the same year law-suits, that have lasted since his father's death, are ended prosperously, 1, and he is offered a handsome pension if he will enter the service of Pope Paul III., 2—5; this he declines, 5—8. He declines also 800 crowns a year, with maintenance for a household of five, and three horses, offered on the part of the King of Denmark for his services, 9—14, desiring to educate his children, 9, 15.
1547. His salary at Pavia is raised to 400 gold crowns. He becomes the friend and colleague of Alciat, the jurist, 24, 25; visits a patient at Genoa, 28; and on the way home writes a Book of Precepts for his children, 28—41, to whom he is much attached, 42—49.
- 1548, 1549. Prospers at Pavia; writes books, and educates his eldest son and a young relative, Gaspar Cardan, for his own profession, 52—54.
1550. There being again no money in the hands of the authorities, Cardan remains in Milan, writing books, 54.
1551. The lectures resumed, and Cardan's XXI Books on Subtilty appear at Paris, 56—69. They become extremely popular, and are reprinted in many places, 57. At the end of this year, Sfondrato being dead, and Pavia hemmed in with wars and troubles, the professorship there is resigned, 70, 71, and Cardan goes to Milan, where, at the end of November, he receives a letter from William Cassanate, body physician to the Archbishop (John Hamilton) of St. Andrew's. In consequence of his fame, and of the statement that he had cured Phthisis, which had been met with in one of his books, he is requested to meet the archbishop professionally at Paris or Lyons, 74—84. Accordingly, in
- 1552, on the 12th of February, Cardan sets out, with five followers, 125, for Lyons, 90, where he finds no archbishop, and practises among the French nobles for thirty-eight days, 90, 91. Hamilton being unable to leave Scotland, 89, Cassanate arrives at Lyons with a letter from him to Cardan, 92, 94, and Cardan, stopping by the way at Paris, where he is heartily welcomed, 96—106, and receives offers from King Henry II., and on behalf of Mary Queen of Scots, 98, 99. Proceeds then to Edinburgh, and arrives there on the 29th of June. He remains in Edinburgh till the 12th of September, studying the archbishop's disease, asthma, 111—125, then leaves him much relieved, and in possession of a code of rules concerning medicine and regimen, by obedience to which he may continue to improve in health, 125—128. He goes then to London, 129, where he converses with King Edward VI., 136, 137, calculates his nativity, 138—140, and becomes acquainted with the English court, 141, 142. He observes the English people, 143—145; and travels home by way of the Netherlands, the Rhine, and Switzerland, 147—153, taking with him William, an English boy of good family. He reaches Milan again in
- 1553, on the 3rd of January. At the height of his fame, 159, he practises among the magnates of the town, writes books, and neglects the English boy, 167, 168.
1554. Cardan, still prospering greatly, hears from Archbishop Hamilton at the

- end of this year, 160—162, that his health has been constantly improving. Being questioned on the subject, he declines to fix himself in Edinburgh, 163.
1555. Julius Cæsar Scaliger having written a book for the purpose of confuting Cardan's celebrated work on Subtilty, is replied to without being named, 176—185.
1556. In this year, Gianbatista, Cardan's eldest son, after two rejections, obtains his degree of doctor, 203; and it is probably in this year that Cardan's daughter Clara marries Bartolomeo Sacco, a young Milanese patrician, 166.
1557. Dec. 21, Gianbatista Cardan marries secretly a worthless girl, Brandonia Seroni, 187, 204—206;
- 1558 he is left to himself, and struggles with difficulty, 207, 208; but Jerome relents, and gives him an allowance for the maintenance of his new household, 188—198;
- 1559 which he receives during seventeen months, 234.
1560. Early in this year Cardan returns to his professorship at Pavia, 198, but is recalled in a few weeks to Milan, 213, where Gianbatista's wife is dead of poison, and both his sons have been arrested for the murder, 207—212. Gianbatista owns his guilt, 216; his father sacrifices all to save him, 213—219, pleads for him in person, 219—236, without success. Gianbatista is condemned and executed on the 7th of April. Within the same week his eldest child dies, and there remains only his infant, which, although born in adultery, Cardan adopts into his household as his grandson Fazio, 238.
- After this stroke Cardan droops and grows mistrustful, 239—241. His reputation is destroyed, 213, 238, and his mind filled with sick imaginations, 242, 255—260. He betakes himself to book-writing, 244—246, to dice-playing and night-watching, 275, and tortures his body to relieve the torture of his mind, 274.
1561. He remains unwillingly at Pavia. William, the English youth, apprenticed to a tailor in Milan, 248, 249, 250, is, after the payment of the premium, overworked and misused, 251; finally he dies of fever in the poor-house, 252. Jerome is deeply afflicted, and begins to erect to him a literary monument, a Dialogue on Death, 253.
1562. Shrinking from the faces that he knows at Pavia, Cardan endeavours, through the influence of Cardinal Borromeo, to effect an exchange to Bologna, 254. Being answered favourably, he resigns his chair at Pavia, 255; but the offer from Bologna comes to him fettered with dishonourable conditions, and he refuses it; is, therefore, without employment, 264, 265. Fearing accusations, he submits his books to the authority of the Church, 269. Being ill in Milan, he discovers by experience a new remedy, and acquires with it some return of his old fame, 269, 270. It is proposed that he shall take a professorship in Milan, 270; while his fortunes are thus mending, he is suddenly banished by a decree of the senate, 271. Having been partly set right by the intervention of the Church authorities at Rome, 271, and the senate of Bologna having removed its most objectionable conditions, Jerome goes, though for a small salary, to teach at the University of Bologna, 272, 273.
1563. At Bologna surrounded by discomfort and disputes, the printing of his books stopped, and his small income from rents withheld from him, 284.
1564. In July, through Cardinal Alciat's help, rents reach him; in August books come to him printed. In this year one of his rivals quits Bologna.

- 1565—1570. Cardan at Bologna not unprosperous—has the freedom of the city, 285, writes books and lectures to a full class, 287. On the 13th of October, 1570, is thrown into prison, 290, on a charge of impiety, 293—297; removes to his own house on bail, 290, 291. Is liberated by the intervention of the friendly cardinals, 292, but prohibited from lecturing or printing books, 297.
- 1571—1576. His lost income supplied by a pension from the Pope; he enters Rome in March of this year, and remains there writing books, and living as a private person till his death, on the 20th of September, 1576, 293—314.
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