THE ZOIST.

No. XXXII.

JANUARY, 1851.

1. *Distressing effects produced in a Doctor upon the removal of a Disease from a Cow with Mesmerism.* By Miss HARRIET MARTINEAU. Communicated by Dr. Elliotson.

"— tantæne animis cælestibus iræ?"*
VIRGIL, *Æneid.* i. 11.

THE following letter could not but suggest to me this exclamation of Virgil when about to relate the conduct of one in a very high situation.

"Ambleside, Oct. 23rd.

"Dear Dr. Elliotson,—Something has just happened which has amused my household so extremely that I am tempted, as you are a party concerned, to tell you of it, and let you share the laugh. It appears that not only are sick brutes like sick people under the power of mesmerism, but that the analogy extends to the respective doctors. The cow-doctor has just been here in a prodigious rage. Somebody has read him the account of Ailsie's cure from a newspaper, and he has come all the way from Rydal to abuse us,—in the very same words that some other doctors have abused us before, about my own recovery, and my maid Jane's, and some others'. He says we want people to believe that his medicines and doings did no good,—that we cured the cow and not he, and so forth. He adds, however, something more liberal than I have yet heard from anti-mesmeric doctors,—that the next time my cows are ill, we may cure them by mesmerism, for he will give them no more medicine: we may try by ourselves what mesmerism will do. This advice is liberal, and it comes in corroboration of my own opinion.

* "Can heavenly creatures get so furious?"

"Though this incident is ludicrous enough, there is a serious aspect of it. It is a striking instance of the likeness of human nature everywhere, in similar circumstances of stimulus or temptation. I should be glad if any medical man should be struck with this, and (if he deserves the mortification) should see himself reflected in the case of this cow-doctor. The cow-doctor's case is the boldest, because he is cut off from the commonest resort of the opponents of mesmerism,—imputation upon the patient. He cannot say that the cow is an impostor; so he gives us the plain truth, declares his rage to be because we think there is something better than his craft. As he cannot blame his patient, he quarrels with nature and those who study nature and use her benefits. I am sorry for the poor man's passion: but we are obliged to him for thus making himself a mirror of professional nature.

"I am very truly yours,

"HARRIET MARTINEAU."

I can imagine some physicians falling into an extasy of delight on learning the truly professional, disinterested, scientific, and manly and uncompromising indignation of the cow-doctor, wishing it were possible to propose him for a Fellowship, and exclaiming with the medical chorus in Molière's *Malade Imaginaire*:—

"Dignus, dignus est intrare
In nostro docto corpore."

Some exclusive Fellows, however, would object to his admission, and not allow the cry of—

"Phœbe fave; novus ingreditur tua templa sacerdos,"

even though his supporters should promise to make him sweet and clean, and comb his hair, and provide him with an Oxford or Cambridge gown, worn by so many Fellows who never saw either university, and to urge him to a respectable appearance in the further words of the same Roman poet to the god:—

"Sed nitidus pulcherque veni: nunc indue vestem
Sepositam: longas nunc bene pecte comas."

TIBULLUS, *Elegia*, ii. v.

It is, therefore, probable that a subscription for a testimonial will be set on foot: and a statue may be agreed upon. The cow-doctor may be represented taking mesmerism, in the shape of a formidable bull, by the horns; and the various proprietors, editors, and sub-editors of the medical journals, and their allies of all professional grades, may

be also represented as spectators in high excitement at his prowess. A statue represents but one moment of an action: and the subsequent events of his being tossed into the air and coming down a senseless carcase, while the bull looked round in triumph and contempt upon the spectators, who then took to their heels and were heard of no more, will be handed down to posterity in the pages of *The Zoist*.

JOHN ELLIOTSON.

II. *Striking utility of Local Mesmerism upon a Steer's inflamed leg and foot, and upon a human finger agonized through a wound with a rusty nail.* By Mrs. VON DER HEYDE, Lewisham. Communicated by Dr. Elliotson.

"Our readers will very well remember that years ago Miss Martineau made some noise by the publication of her personal mesmeric experiences—and by the blindness that could not, or the self-will that would not, see, even after they were pointed out, the large holes in the argument by which her positions were sustained. Once more the same lady appears publicly in the character of a mesmerist,—once more leaning on the logic which proceeds by the conversion of the coincidence into the *sequitur*,—but this time having a patient that announces a great enlargement of the field of mesmerism. Miss Martineau has been mesmerising a cow. The case of the cow bears a strong resemblance to Miss Martineau's own. The cow was taken violently ill, and the cow-doctor was sent for: which in our opinion was a very rational proceeding under the circumstances. The doctor said, that if the cow did not get better, she would die; and, that she *might* get better, he proceeded to bleed her and apply other active remedies. After the remedies had had sufficient time to act, the cow did get better; but as she had not got well at once, Miss Martineau had in the meantime had 'passes made along the spine,'—and, as in her own case, the passes have the credit of the cure which was in progress under the administrations of the doctor at the time when they were made. We have a group of three leading facts—based on the illness of the cow. The cow was bled and took 'strong medicines,'—the cow was mesmerised—the cow got well. The first of these facts, for the sake of simplification, is discharged altogether,—and the two remaining propositions are strung together, and married by Miss Martineau into the relationship of cause and effect. Suppose, now, the cow had not been bled and physicked:—has Miss Martineau no misgiving as to what might have been the result?—Not that we mean to affirm that a cow is not as good a subject to *conjure* with as an artful servant girl,—and a great deal more to be depended on as far as the evidence goes. In all physiological facts relating to the mere animal organism of the human body, we may expect to find the same phenomena exhibited by the lower animals. Thus, if the decillionth of a grain of charcoal makes a man drunk, as alleged by Hahnemann,—it ought to produce the same effects on a dog or a cat. If human beings may be sent to sleep by staring at them, or flourishing in their faces,—so may animals. Even the circumstance that the cow fell asleep while the man was mesmerising her, fails to convince us. It is a well-known fact in natural history that cows sleep without mesmerism:—that sleep precedes a favourable termination of disease is also well known. Whatever may be the real condition of the nervous system during the cataleptic sleep occasionally observed in susceptible persons, *we know too little of its curative effects to say that in any case it produces a beneficial effect on the animal system.*—In fine, we ask Miss Martineau to reconsider the evidence, and be just to the cow-doctor."—*Athenæum*, Oct. 26, 1850.

THIS article of the *Athenæum* is one tissue of falsehoods. Mr. Dilke, in his supreme ignorance of cerebral physiology,

and indeed of all science, issued an order that all writers in the *Athenæum* should scout phrenology as nonsense; when mesmerism attracted public attention, he issued an order that mesmerism should be scouted as another quackery: and those with whom it is an object to earn his money wrote and write accordingly in all abjectness, and will till fresh orders are issued by a wiser man.*

Miss Martineau had a complaint which disabled her from exertion and rendered her life miserable, and was treated for five years by medical men absolutely in vain; and the most experienced declared she would never recover. In truth the means employed never cured such a case and never will. She was well mesmerised by a powerful mesmeriser, Mrs. Montague Wynyard, and perfectly recovered. Those who wish to be satisfied of all this, and to learn the disgraceful, aye, and disgusting and heartless, conduct of some persons who ought to hide their heads for ever, must read *The Zoist*, No. IX., pp. 86—96. An article in No. XII., and one in No. XIV., are worth looking at.

The cow-doctor did *not* say the cow would die if she did not get better; but that he was sure she would die if she were not much relieved *before* his evening visit: and there were no signs of relief *at* his evening visit, soon after eight o'clock, and he then absolutely said she could not recover, and it was a chance if she lived till morning. At ten she was worse; in a desperate state: struggling for breath, quivering, choking, and in a flame of fever: her eyes were starting: her mouth and nostrils dry: and the functions suspended as they had been all day. At *midnight* there was still no improvement nor promise of any: and she was then mesmerised, and *in a few minutes* her breathing became easier, her eyes were less wild, her mouth moist, and before morning she was relieved in all ways. On calling in the morning he exclaimed that he had "never thought to see her alive again."† The cow did not get better after the doctor's remedies had time to act. Moreover the cow had a relapse at noon and was almost as bad as ever. No bleeding or medicine was employed: but she was mesmerised for an hour, and in two hours was out of danger, and has never been ill since. The writer's conscience allowed him artfully to suppress this.

The writer who could pen such a wicked perversion of truth walks among civilized men, among *Christians*, and is

* For an example of the iron rule of the editor of the *Athenæum*, see an account of the humiliating position of Mr. Robert Hunt, one of his reporters, in *Zoist*, No. XXIX., pp. 104-6. Also in the present number, p. 342.

† See No. XXXI., p. 301.

tolerated! His vocation is to earn his livelihood by attempting to obstruct a mighty truth and the alleviation and cure of the sufferings of his fellow-creatures—human and brute. Unhappy is the man who is in such a case.

How different was the impression made upon a lady will appear by the following letter. Of all bad beings a bad woman is in my eyes the worst: of all insufferable creatures a vain or superstitious woman is to me the most insufferable: but of all beings in my eyes a thoroughly sensible, conscientious, benevolent, and fearless woman is the most noble and delightful. JOHN ELLIOTSON.

"Vale Cottage, Sydenham,
"Nov. 2nd, 1850.

"My dear Sir,—If the following simple narrative will aid the cause of mesmerism, I shall be highly gratified.

"Having read your account of Miss Martineau's cow in *The Zoist*, I determined to try it on a steer, which my husband had purchased of a drover. The poor beast from being overdriven had a very inflamed leg and foot, so that he could scarcely move. The parts were poulticed for two days and a half, and, as our man says, the foot looked as if rotten. I now went into the farm-yard, and saw it, and had the poultice removed, and directed the man how to make passes. He did so for nearly a week, when the foot was *quite well*. The passes were made for a quarter of an hour three times a day, and nothing was applied from the day the poultice was removed. Our simple-minded man was quite astonished.

"But now for my anecdote. Impressed with the wonderful cure of the steer, John Howell, the man who mesmerised it, having run a rusty nail into his finger and suffering excessive pain, thought he would mesmerise the part. He did so with his other hand. He declares he felt the agony darting out of his finger-end,—it *was well*. If this statement requires his signature, here it is:—

"'I, John Howell, do here certify that the steer was cured, and likewise my finger, by my mistress's directions.'

"I remain, dear Sir, yours very respectfully,
"CHARLOTTE A. VON DER HEYDE.

"Dr. Elliotson."

III. *Two Cures of violent Fits.* By Mr. Rawe, Lemaile, Wadebridge, Cornwall.

"Homœopathy and mesmerism are the nearest approaches to the *laissez-faire* in medicine that can be conceived; and if the prophets of these *mysticisms* would only go a step further in that direction, they would find that Nature could perform her own cures without the globules and without the mesmeric passes. The *trick* in each case is a mere redundancy. It does no harm—except so far as the MORALS of medical practice are concerned, and except so far as reliance on it may stand in the way of active remedies when active remedies are imperatively demanded,—and no good. Whatever of real and useful appears to exist by the side of these *modern quackeries* is traceable—as was elaborately shewn by Mr. Noble in his *Mesmerism: True or False?*—to the action of natural forces, unconnected with the mysteries of mesmerism, odylism, homœopathy, and so forth." —*Athenæum*, Nov. 16, 1850. The wise writer and Mr. Noble are *Par Nobile*.

TO THE EDITOR OF THE ZOIST.

Sir,—I beg to offer you a brief account of two cases of fits treated mesmerically, thinking you may judge the communication, either in its present or an abridged form, of sufficient interest for insertion in your journal.

Residing in this remote part of the country, and debarred as I am from any opportunity of personal communication with other mesmerists, the arrival once a quarter of my copy of *The Zoist* is an event of much interest with me, and, in return for the pleasure and instruction derived from it, I would willingly contribute anything which might be considered of any value in my mesmeric experience.

I am, Sir, yours obediently,

Lemaile, near Wadebridge, Cornwall, Nov. 3, 1850.

John Rawe.

N. Tom, a lad about 15 years of age, engaged in farm-work, was in November, 1848, attacked with fits attended with a degree of insanity. He received medical treatment from Mr. Wilkins, a talented surgeon of this neighbourhood, but *without benefit*. I heard occasionally of these attacks, and concluded that the probable result would be his becoming an inmate of the lunatic asylum. Being a rather large payer to the poor-rate of this parish (Eglashayle), to which the boy belongs, I took the first opportunity of consulting with some of the parish officers on the case. I met Mr. Pollard, the much-respected guardian of the poor, and Mr. Lakeman, agent to Sir William Molesworth, and they agreed that some steps ought to be taken at once, and proposed sending him to the Truro Infirmary. I stated my opinion to be that nothing but a course of mesmerism would cure the boy. I heard nothing more of the matter for a week or two, when one evening the boy's father called on me, accompanied by his

son, and made the following statement:—An application had been made to the infirmary, but was refused on the ground that cases of fits were not received there. It was then proposed for him to be removed to the union-house to be under the care of the surgeon of the establishment. This the authorities refused on the ground of the appearance of insanity in his attacks. The poor man expressed himself perplexed what to do, and, having heard that I advocated mesmerism for such complaints, said he should feel greatly indebted if I would try it on his son. I told him to send the lad up next day, and, if he could do any work on the farm, he should have his wages for it. The man described the attacks as generally coming on about eight o'clock in the morning, the first symptoms being pain across the forehead and coldness of the extremities; the lad would at times fall down quite insensible, but generally would attempt to run straightforward, sometimes falling to the ground and rising again, the countenance appearing wild and distorted: if restrained, he would threaten violence. After the fit he would remember nothing of what had passed, was greatly relaxed, "as limp as a piece of cloth," to use the parent's words.

I commenced mesmerising N. Tom on the 31st of January, 1849, and continued the process half an hour daily for a fortnight, and every other day for the succeeding two weeks. He did not appear a susceptible subject during the first five sittings: the eyes never closed, but, to my surprise, the *head-ache and coldness of the extremities, which I found had before been felt every day*, whether a fit came or not, had *entirely disappeared from the first day of mesmerising.*

On the sixth day the eyes closed for a short time; and this effect gradually increased, so that in the half hour there would generally be three or four dozes of a few minutes each.

The fits *entirely left*, and the boy soon acquired a *healthful appearance;* and *from that time to the present*,—a year and ten months,—he has enjoyed *uninterrupted health.* This I am enabled to state, as I have had the boy in my domestic service.

This was the first serious case I ever undertook, and it occasioned me anxiety as well as labour: but I felt the gratifying success attending my efforts to be an ample reward.

Case II.—M. A. Osborn, aged 31, a married woman, and mother of six or seven children, had epileptic fits for *four years and a half;* sometimes several in a week, and was never free more than a week or two at a time.

She has had several narrow escapes when seized with the

fits. On one occasion, having fallen on the hearth with her baby, her clothes were beginning to burn when her mother accidentally came into the house: she has fallen down stairs: and one dark evening, when going to her father's house, she fell with her face in a drain of water; some one happening to pass heard a struggling, and, getting a light, came in time to prevent suffocation.

M. A. O. applied to a medical man, and says his answer was, "*that he could do her no good; that all the drugs in his surgery would be of no avail.*" He recommended her to get a bottle of spirit, and, when she felt any symptoms of a fit, to take a dram. This was tried, but not long persisted in, as the effect was to increase the severity of the fits. The struggling had not previously been very violent, but, in the attacks which followed the use of the spirit, it required three strong men to hold her.

This woman applied to me to be mesmerised on the 19th of March, 1849. There had been *no improvement up to that time*, but rather *an increase* of the disorder. I found her very susceptible to mesmerism, being rendered comatose in five minutes at the first sitting, and subsequently less than one minute was sufficient. I commenced to mesmerise her regularly half an hour every day. From notes made at the time I extract the following.

Her usual head-ache disappeared at once. In a few days she reported to me that a *great* change had taken place in her *nights' rest.* In time past she had been very wakeful and restless at night, and, when asleep, frequently moaned and started: now she had a profound slumber from bed time to rising time. She observed, that it seemed to her as if she was going to make up for all the lost sleep.

April 1st. M. A. O. has occasionally suffered pain in the *stomach* and in the *back:* to-day these are *quite gone,* but there is a rather severe pain in the right *leg.* She never, that she can remember, felt pain there before. In mesmerising her I have sometimes made long passes from head to foot.

5th. The pain in the leg *gone;* much pain in the *foot.*

7th. Pain in foot *gone.*

10th. Last night she was taken with trembling and a slight twitching of the limbs.

14th. She has felt rather poorly to-day: complained of a trembling sensation about the heart, similar to what she used to feel when a fit was coming on.

16th. From the unfavourable symptoms apparent for some days past, I feared that the sanguine hope I had indulged in

would receive a check, and that a fit would occur. After a month's exemption from them, it was with some anxiety that I looked for the arrival of the woman, and was relieved to find there had been *no fit*.

The cure had moreover been put to a severe test. The temper of this woman I knew to be very excitable, and she confessed to having been thrown into a great passion last evening by some domestic occurrence: formerly such a misfortune would have certainly been followed by one or more fits; now there was a trembling for about an hour.

Mesmerism was used every second day for about a week longer, and two or three times at irregular intervals afterwards. *Her cure then appeared complete.*

It is now *a year and a half* since I last mesmerised this woman, and she has had *no return* of the complaint: she has not had a fit since the first day of mesmerising.

J. R.

*** Having seen this communication, and being intimate with the family of the Molesworths, I mentioned it to the Dowager Lady Molesworth, who immediately said she would write to Mr. Lakeman to know who Mr. Rawe is. The following is his answer. What an example is Mr. Rawe to the Cornish gentry and medical men! JOHN ELLIOTSON.

"Coslelost, Nov. 29, 1850.

"My Lady,—Mr. John Rawe is a highly respectable yeoman: he farms principally his own land; and his veracity is undoubted. Dr. Elliotson need not doubt his report of the cures he has made by mesmerism.

"I remain, my Lady,
"Your faithful and obliged servant,
"JOHN LAKEMAN."

IV. *A Cure of Epilepsy, by Dr. Kenny, Stoke Newington.* By Mrs. COOPER, Stoke Newington. Communicated by Dr. Elliotson.

"We have *all along* maintained, with regard to mesmerism, that it embraces *psychological and physiological phenomena which deserve investigation.* We accept Baron Reichenbach's book as an attempt to explain the latter;—and very glad we should be if some one could as satisfactorily, under the former head, explain the condition of mind into which Dr. Ashburner and his brother mesmerists have got in this country."—*Athenæum*, Oct. 19, 1850.

THE ATHENÆUM HAS "ALL ALONG MAINTAINED, WITH REGARD TO MESMERISM, THAT IT EMBRACES PSYCHOLOGICAL AND PHYSIOLOGICAL PHENOMENA WHICH DESERVE INVESTIGATION!" The Pope and the cardinals have always maintained that the

sun does not go round the earth, but the earth round the sun, even as Galileo maintained these truths! Satan has always maintained that he wished all men to be good, and he has always preferred holy water to any other!*

The editor of the *Athenæum*, like many others, begins to suspect he must turn about or be in the minority.

On March 15th, 1849, a young lady, eighteen years of age, was brought to me labouring under epilepsy. It is my habit to abstain from proposing or even mentioning mesmerism to medical men in consultation, or to patients who seek my advice unaccompanied by a medical man, before it is mentioned to me. I therefore after taking down her case prescribed medicine. But the question of the propriety of mesmerism was put to me, and instantly, as is also my habit, I gave my opinion in regard to it without reserve. In order to encourage all the parties, I advised that the medicine and mesmerism should both be employed. The patient was cured, and the grateful mother eagerly offered to write out the case for publication, the patient and whole family joyfully assenting:—an example worthy of all imitation, and a sad contrast to the fear too frequently entertained of the ignorant and malicious.

"To Dr. Elliotson.

"9, Church Street, Stoke Newington,
"London, Dec. 20, 1850.

"Dear Sir,—As all who, either by themselves or their relatives have experienced the restorative powers of mesmerism,

* "The details of many of these cases of possession are so like the *wonders of mesmerism*, that they may be penned as proof that there is no *folly* so exposed, but that it has a chance of being revived; that there have been FOOLS AND KNAVES in all ages, and pretenders to *imaginary* sciences, whom the great vulgar and the small are always ready to credit."—*Athenæum*, Jan. 11, 1842.

"Hydropathy is, in fact, but one head of the great hydra *quackery*,—and is sprouting up at the expense of its scotched sisters, *mesmerism*, phrenology, and homœopathy. They are all the offspring of the same stock—*phantasies* of overwrought German abstraction; which, long after they had ceased to trouble the parent mind, are imported at second hand for the amusement of us English."—*Athenæum*, May 13, 1848.

"We would have been better satisfied to have seen mesmerism introduced among other mental *delusions*, than to find it used as the fly-wheel to carry the other parts of the machinery round the 'dead points' of the work, if such a mechanical phrase be permitted."—*Athenæum*, Review of Mr. Robert Hunt's *Panthea*. Mr. Hunt instantly fell on his knees before Mr. Dilke, and said he meant all the time to include it in delusions, "and that self-delusions and often, he feared, inexcusable fraud mark the small amount of truth upon which it lingers." I have heard that Mr. Dilke kept him on bread and water in a corner with a certain cap upon his head for a whole day, notwithstanding the naughty boy's blubbering and repentance.

See also the mottos in the present Number to Articles 2 and 3.

are indebted to your sagacity which perceived, and your truthfulness which asserted, its efficacy, in the face of prejudice too presuming to investigate and too angry to be fair, I beg you to accept a mother's gratitude, and a statement of a few particulars respecting the very severe disease of my daughter, and her recovery by the agency of *mesmerism only*.

"My daughter, Elizabeth Naish Cooper, although she had been vaccinated in infancy, sickened of the small-pox in the year 1846; this was succeeded by violent head-aches, and she had been subject from childhood to sick head-ache with which she awoke in the morning: the head-aches at length ceased, and epileptic fits began in December, 1848. The fits gradually increased in severity, duration and frequency, until we almost began to despair. She not only fell suddenly down senseless and went into strong convulsions by day, but after a time was attacked in the night, though never during the first three hours of sleep, and she sometimes was not awakened at all by the fit. They were often very numerous in her sleep. At last, the fits took place most frequently when she was getting up, or turning in bed before waking. In the convulsions she would bite her tongue and roll her eyes upwards. Besides the strong fits she had very many slight ones, almost merely threatenings. After an attack she usually vomited, and always had pain at the pit of the stomach, stupor and head-ache. Before the fit she always had pain in her jaws; and before, during, or after it, nettle-rash, which would not spare her eyelids, tongue, &c. She was always very thirsty, and had a voracious appetite: and her feet were always cold.

"Two eminent medical gentlemen in vain attempted her cure.

"The sea air, and likewise the air of the interior of Hampshire, were ineffectually resorted to. The disease gained upon her till, on March 15, 1849, I brought her under your notice, she being 18 years old. After you had taken down her case and prescribed sulphate of zinc for her, she herself, being a believer in mesmerism, though at that time I was not, because its phenomena had not come within the scope of my observation, nor the testimony as to its reality and curative power to my knowledge, earnestly asked you if she might not hope for a cure from mesmerism. You encouraged the idea, and shewed her how her sister was to make the mesmeric passes, and at the same time recommended me to read Sandby. Afterwards when you saw her sister and observed how nervous and delicate she was, you remarked that she was more fit to be mesmerised than to mesmerise. Her sister, however, mes-

merised her regularly: but never was able to produce the mesmeric sleep. She took the zinc three times a day for two months, in doses of four and five grains after the first fortnight; and at the close of the year a sharp attack of illness obliged her sister to desist from mesmerising her. The fits had long become less severe and of less duration. Elizabeth then grew worse, and, on the 15th February of the present year, fell down in a violent fit in Abney Park Cemetery. The assistance of Dr. Kenny, of High Street, Stoke Newington, was called for, and this gentleman kindly offered to try upon her the effect of daily mesmerism. On the 16th he gave her a cleansing medicine. On the 18th he began to mesmerise her; at the same time directing her to take no more medicine, to let her diet be like that of the rest of the family, but to abstain from fermented liquors; which indeed, with the exception of a short interval of six weeks, she had abstained from for the last two years.

"On the first day the effect was very slight; but, on the second, irrepressible streams of tears for hours coursed down her cheeks. I opened my eyes in wide astonishment, because she was a girl who never would indulge in tears, however keen her distress. On the third day she fell into a deep mesmeric sleep, from which it was twenty-four hours before she was completely awakened. Afterwards she was, from one to three hours daily, under the mesmeric influence, and often a great deal longer. Her *natural rest soon began to improve; she was no longer, by night, slumberous and semi-conscious, but soundly asleep.* The next advance towards health was marked by the *cessation of that obstinate constipation of the bowels by which her malady had all along been attended,* though they were invariably kept regular by strong medicine; then came *relief* from the *aching* and sense of *tightness* in the chest, which had generally preceded, and always succeeded, her fits. Subsequently the *sickness ceased,* and the stupor, that used to last for *hours,* passed away in about *twenty minutes.* At this stage of her recovery, Dr. Kenny pressed her, while she was in the mesmeric sleep, to tell him of some means of completing her cure. She replied, 'Mesmerise me every day; do not let me drink much of warm liquids; make me rise at five o'clock, and do not permit me to eat after seven o'clock in the evening.' These, her instructions, were strictly attended to, and though, through the ensuing three weeks, nature seemed in hard conflict with disease, and Elizabeth had many fits, yet they were unaccompanied by their former formidable symptoms, and the 14*th of May witnessed her last.* Nearly eight lunar months have now elapsed without the slightest return

of her disorder. For five months the mesmeric treatment has been discontinued. Her digestion is good, so also are her spirits, and she has every indication of *vigorous health.*

"*Phenomena.*—The phenomena which Elizabeth presented while under the mesmeric treatment were very curious; and some of her illusions excited somewhat of apprehension in me, though they did not so in Dr. Kenny, to whose patient skill and generous and persevering benevolence, in the application of mesmeric power, she owes the cure of her awful malady. Shortly after she had been submitted to its agency she became highly somnambulic, and always then mistook the doctor for some other person; and, when the mesmeric influence had completely sealed up her eyelids, she used to charge him with taking away her sight, and allege that as a proof that he could not be Dr. Kenny;—'For Dr. Kenny is benevolent: the person therefore who has taken away my sight cannot be Dr. Kenny.' And if, either through design or inadvertently, he offended against a grammatical rule, she seized the circumstance as another evidence that he could not be Dr. Kenny;—'For Dr. Kenny is an educated gentleman, and would not fall into such an error.' She was always respectful to him when she was capable of perceiving that he was Dr. Kenny, and most discourteous when she took him for another person. But, though she quarrelled with and scolded him, she never failed of an excuse for keeping fast hold of him; generally observing that she must detain him, otherwise he would go and injure Dr. Kenny.

"She used to lock her left hand into the right hand of her mesmeriser so tightly that he could not always disengage himself. When asked why she grasped his hand so firmly, she would reply, 'Because it does me good.' I watched her anxiously; and, from the pertinacity with which she seized on every opportunity of glueing her hand, as it were, to that of the mesmeriser, and the sense of injury she expressed when not permitted so to do, I am persuaded that a healing effluence passed from it into hers.

"Whatever the mesmeriser ate she always tasted, and almost immediately. On one occasion, when she was in the mesmeric sleep, not being aware that raisins set her teeth aching, he ate of them. She then began to feel pain in her teeth, accused the doctor of putting raisins into her mouth, and, having in vain tried to find them with her own fingers, compelled the doctor to try to find and take them out with his, and this of course, as they had not been in her mouth, he

failed to do: and the irritation of her teeth did not cease till some little time after he had desisted from eating raisins.

"She often, during the sleep-waking state, required the mesmeriser to recite for her amusement the passages from Shakespeare, Pope, and other poets, with which he had stored his memory in youth. Her own was then so accurate that she at once detected any deviation from the received reading, and visited it with a no very gentle rebuke.

"Her sense of touch was greatly disturbed,* and often far from being nicely perceptive. On one occasion she accused her mesmeriser of taking her to sea in a crazy boat, and, as she stumbled against and felt the different articles of furniture, she called them rocks; and, when, to allay her fear and dispel the illusion, she was made to feel the carpet, she observed, 'This is sand, such as is always to be found near rocks and about the sea.' When with extended arm I leant against the mantel to keep her from the fire, she struck against me, and exclaimed, 'O we are at Spithead now, and here is a part of the Royal George;' and then, seizing my hand, she said, 'I'll have a relic of this;' and, taking a pair of scissors from her pocket, she was proceeding to cut a piece from my thumb, when the doctor came to my rescue. A circumstance or two, besides this, occurred to teach that somnambulic patients should be deprived of knives, scissors, and instruments of mischief previously to being mesmerised. On another occasion she saw tigers and heard thunder, and asserted that she had been taken to the deserts of Africa; and, when the doctor said that the noise was from the waggons in the street, she exclaimed, 'What ignorance! and you call yourself Dr. Kenny. But who ever heard of streets in the deserts of Africa?' With a strength that overpowered mine and the doctor's, she forced open the door, and rushed away from the room which she called the deserts of Africa.

"One afternoon, when she had been more than four hours in a mesmeric sleep, from which the doctor had in vain endeavoured to awaken her, the motion of her lips and her looks evinced that she was holding a conversation, though her eyes were perfectly closed and her voice inaudible: and, when the doctor came the second time, and partially awoke her, she instantly gave him his dismission, saying that a gentleman had visited and promised to cure her, and had brought a green vase as a token that he was sent to do so. This personage was a mere creature of her imagination; yet, of all her

* This was in reality cerebral hallucination.—J. E.

strange doings under the influence of mesmerism, and all her strange visions and imaginings, this apparition has alone left a trace behind. She faintly remembers talking to a gentleman with a green vase who came to cure her.

"While under delusions respecting the identity of the doctor, she always knew his ring, and, unable otherwise to account for its being on the finger of the mesmeriser, she would accuse him of obtaining it unfairly, and insist on having it transferred to her own finger, that she might restore it to Dr. Kenny. She constantly required him to deliver to her whatever money he had about him, always knowing my money from that of the mesmeriser. On every occasion that I stealthily handed it to him that he might give it to her instead of his own, she indignantly threw it away. She shewed a great abhorrence of me during the mesmeric state; sometimes angrily asking, 'Who are you?' at others asserting I was a creature whom the mesmeriser had brought to torment her. She shrank from contact with me; unless, during her somnambulism, I became an obstacle in her way, when she would seize and hurl me from her with a strength almost incredible. While in the sleep-waking state she generally exhibited a wonderful degree of power.

"Once, after the mesmeric treatment had caused the complete sealing up of her eyelids, finding a piece of paper on the mantel, she wrote a note, of which the wording is good, the spelling correct, and the writing rather graceful. It bears in itself evidence that she could not see, for it is a complaint to Dr. Kenny, that some person (assuming his name) had taken away her sight. It is properly folded and directed; and she charged the mesmeriser, whose identity she failed to recognize, to deliver it to Dr. Kenny: the mesmeriser being then, as always, Dr. Kenny. Her behaviour to this gentleman during the sleep-waking and somnambulic states was very unceremonious, imperious, and sometimes vindictive. Occasionally he was obliged to manage her by making the mesmeric passes down her arms, when they would remain, in whatever position he had placed them, rigid as marble.

"This irregular action of the imagination and perceptive faculties I have mentioned more in detail, in order that, as the issue has been so highly beneficial, some, who may be called to witness similar phenomena, may thereby be exempt from the apprehensions with which I was sometimes disturbed.

"I am, dear Sir, with the highest respect,

"Your obliged servant,

"Ann Cooper.

"P.S. Lest I should have been in anything incorrect, I

have submitted this letter to the perusal of Dr. Kenny. He affirms the accuracy of the facts stated."

Every particle and every phenomenon of nature deserve our admiration and study. But the phenomena observed by mesmerists transcend the facts of anatomy, common physiology and pathology, the ordinary observations of even microscopists, and experiments on the agency of various substances on the functions of the lungs, liver, kidneys, muscles, &c., as far as the study of the Parthenon or St. Peter's, of the steam-engine or electric telegraph, transcends the study of gas-pipes or the process of soap-making. For the properties and functions of the human brain tower high above all other objects which we can witness in nature. The phenomena of the present case are calculated to rivet the attention of the philosopher: but are as lost upon the mass of medical men as the works of Phidias and Michael Angelo upon the birds which fly around them.

The phenomena of this case are those continually observed in all countries and in persons, some in one and others in another, who never heard of each other or of such phenomena.

The sleep-waking state differs from the ordinary waking state of the patient, as far as my own observation and my knowledge obtained from others extend, in some particulars of the intellectual or affective faculties. At the least there is more openness and ease, and sometimes a total disregard of any superiority, however great, of those around. Sleep-wakers are usually at their ease with persons of the highest rank: may disclose what they would not mention in their ordinary state, and, if displeased, speak in a manner not observed when they are awake. In some the altered character of the patient amounts to a degree of delirium, and this may vary in different patients and in the same patient at different times.* In a beautiful case recorded by me in No. VI., p. 219, the patient always mistook every body.† Some mis-

* See my observations on Mr. W. Salmon's striking case in No. III., p. 323. "We should always remember that, in the sleep-waking state, there is often a touch of morbid mental condition, of endless variety, and of all degrees, up to decided insanity, though perhaps some faculties are at the time extraordinarily acute, and faculties not seen in the healthy state present themselves to our astonishment. The ignorance or forgetfulness of this puzzles many persons who witness sleep-wakers and makes them fancy imposition." See also Mr. Griffiths's case, No. IV., p. 409.

† "She never knows who or where she is, what time it is, or to whom she is speaking. Though attracted to me she never recognizes me, but mistakes me for some one whom she likes,—her father, mother, &c., but far more frequently for her favourite sister. Her conversation is perfectly rational, and as full of intelli-

take the mesmeriser only or certain other individuals only. I have had cases in which individuals could be recognized only by the patient feeling a ring or something else belonging to the mesmeriser: and sometimes there is such determined want of recognition that the thing intended to lead to recog-

gence as in her waking state, with every power and feeling of its degree habitual to her waking state; and she says exactly what she would say under the circumstance in which she mistakes herself to be. Whoever she fancies me to be, her conversation with me is precisely what it would be with that person. When, for instance, she considers me her sister, she tells me things and makes remarks which she would utter to none but her sister. Fancying no one present but the person she addresses, she will tell things in the presence of those whom she begs may never be informed of what she tells. Wherever she fancies herself, any impression you attempt to make upon her, if the circumstance would be impossible there, she misapprehends. If my parrot or cockatoo makes a noise while she fancies herself at home where there is no bird, and I tell her the bird makes a noise, she will declare it not to be the noise of a bird but something else. When she fancies me her sister, she persists that mine is a female voice: and, if I speak very gruffly and pretend to be a stranger, she will laugh at me (her sister) for imitating so charming a person with my voice. She has fancied herself at home with her sister and taking tea and reading, while squeezing one of my hands in each of her's: and declared she held a cup in her right hand and a book in her left. I told her to give me the cup, still keeping my hand in her's: she replied that I would not take it. I withdrew both my hands, and she then said she had given me the cup. I replaced my hand in her left, and she said I had given her the book back after having taken it away. I withdrew my hand, and she said there was nothing in her hand and that she had put the book in her pocket. When she was again squeezing my hands with this same fancy, I caused her to relax them by breathing, and she then said she had put both cup and book down. When imagining me her mother, and both of us at tea, if her sister touched her, she instantly withdrew her hand complaining that I—her mother—had put the cold bread and butter upon it. She has fancied herself at work, putting a cord through a cape; and then declared she had the scissors in her hand. Her sleep-waking was always a beautiful display of rational dreaming: the internal activity of her faculties representing everything to her with the vividness of external impression so as to be mistaken for reality, and all external impressions being mistaken for circumstances in perfect harmony with her current of fancy.

"Her fancy could be directed: her judgment led entirely by her feeling. She could be made to fancy herself with a sister or some other person she liked by my speaking to her: and with some one she disliked by another speaking to her: and the rest of the circumstances which she fancied would all harmonize with the circumstances of the relation of herself and the favoured party. While she fancied me her sister and squeezed my hand affectionately, she repelled this very sister's touch, fancying her some one she disliked: because the touch of every other person than myself was usually disagreeable to her, and gave her a fancy that it was some one she disliked. If she fancied herself at home with none but those she loved, and any one but myself (for instance, her sister) touched her, she did not fancy any disagreeable acquaintance had touched her, this being impossible in her view, but that a cold wet towel had been put upon her.

"Her fancy often changed. One moment she fancied me her sister, and then her father, and then some friend, or her sister again. She would talk to me immediately in each fresh view of persons, place, and time, exactly as she would have done to the fresh fancied person; forgetting what she had just said to me as the other imaginary person, if the time of that fancied interview had been posterior to the time of the present fancy. Otherwise she could not be brought to remember. She sometimes mistook another person's *voice*, not touch, for mine, and, having fancied me her sister, continued speaking, but to the fresh person, still as her sister."

nition is not admitted as an argument: its characters are absolutely denied though it is examined by the patient.

It is remarkable that the mesmeric attachment to the mesmeriser exists with equal strength though he appears to be not recognized. But a patient may really recognize the mesmeriser, and yet not be conscious of his recognition.* Yet, just as a hypochondriac may be the prey of a fancy which he cannot shake off though all the time he knows it to be unreal—cases of which kind I continually see—two convictions coexisting, or rather being felt in alternation so rapid that they seem to coexist—so mesmeric attachment with open recognition may coexist with anger. A patient may be powerfully under the influence of mesmeric attraction, while very angry, absolutely savage, with his mesmeriser for some little annoyance, as in common existence lovers will love and hate at the same moment. I have now such a patient in whom the mesmeric attachment is very strong: but it is quite intellectual: for, if through my cheating him he mistakes me for another, he repels me: and, if he mistakes another for me, he retains the hand of that other person: he has no hallucination and cannot open his eyes for the least vision. In some cases there is an occult power of distinguishing the mesmeriser from every other person by the touch: his hand is grasped, and the hands of all others repelled, however carefully means may be adopted to cheat the patient, and even though the latter always deliriously calls the mesmeriser by the name of another and denies his identity.†

* See No. XXIV., p. 375, and No. V., p. 70, on this curious subject.

† See two exquisite cases related by me in No. VI., p. 213-15. "She had occult senses,—senses which in her waking state she had not. However blindfolded, even if a large doubled cloth was thrown over her head and chest, she could readily distinguish the point of my finger upon her hand from that of any other person; or my breath from that of any person upon her hand: and even the proximity of any other person's hand: nay, anything first held in the hand of another was disagreeable to her. My breath, touch, and anything I had touched, were agreeable and warm to her: but the breath, contact, proximity, or anything from the hand of any other person gave her the sensation of coldness.

"If others stood close to her, she began to shudder; and the proximity of several was distressingly cold to her."

"I have a patient who, in his silent sleep, with his eyes perfectly closed, and any thickness of cloth thrown over his head and chest and drawn close round him, is instantly distressed beyond a measure by a piece of gold placed upon the back of his hand after lying in the hand of another person, but not at all if it has been taken from my hand. Any one with gloves on makes the experiment, placing the sovereign first on my hand or the hand of another at pleasure, in every succession and with as many repetitions as are thought proper. Nay, if the gold is taken off my right hand and placed upon his left, or off my left and placed upon his right, he is distressed, and shakes it off, and, if it is placed in his palm, violent spasm of the hand occurs; though he expresses no uneasiness when it is taken from my right and placed on his right, or from my left and placed upon his left. Neither temperature nor anything but occult property can explain these wonderful facts. The silliness of those people who pronounced that the Okeys

Community or sympathy of sensation is a perfectly established fact, and is no doubt cerebral* as much as the sympathy of thought and wish or willing:—all phenomena, however, perfectly unknown to the medical profession, and in vain to be searched for in the chapters on sympathy in medical works.

As the disagreeable feeling from raisins in the mouth arose from the presence of raisins in the mesmeriser's mouth, the attempt to remove it by performing the action of removal in the patient's mouth was necessarily fruitless, and the proper plan was to remove the raisins from the operator's mouth. When Mrs. W. Snewing felt her mouth burning from the various spices which had been in my mouth causing me to have a burning sensation, she was instantly relieved by my

were impostors and knew by their warmth, moisture, &c., what metals had been mesmerised, does indeed appear preposterous to me, now that every class of facts in those two sisters have been carefully verified by me in so many other patients.

"This youth, like the present patient, can distinguish the touch of the point of my finger from that of any other person, though his eyes are always firmly closed and turned up, and however much his head is covered; and the touch of every one else makes him withdraw his hand, unless indeed they are under the influence of mesmerism, and he then is never annoyed by them. The present patient disliked the touch of others in even their mesmeric state, always frowning, but did not find their touch cold she said, in answer to our enquiries when we placed the hand of others asleep upon her; yet she could not by any possibility see whose hands touched her. Her attachment to me was only to me as her mesmeriser; since, last Sunday (June 23), the first time for nearly three years, another person than myself tried to mesmerise her: Mr. Atkinson sent her, by pointing and looking, to sleep in ten minutes: she then smiled when he touched her hand, and frowned when I did, sight being impossible: she awoke in a few minutes suddenly, without precursory symptoms: I then sent her to sleep in one minute, and she smiled on my taking her hand; but the relation to him that had existed just before continued in some degree, for she allowed him to touch her, and was pleased, though her smile was faint and she did not grasp his hand. As soon as I put my hand upon his, while it lay upon her's, she smiled; my impression actually being conveyed through his hand. We repeated these trials again and again, with the same results invariably, vision being impossible."

The latter circumstances mentioned in this quotation give me an opportunity of remarking that the mesmeric attachment has nothing sexual or sensual in its nature: it is simple attachment, and much like that of a child to its parent or nurse, fearing separation and dreading all others. If the mesmeriser is changed, the attachment is equally strong: and this whatever the sex, age, or appearance and character of the person who has induced the mesmeric state. Of course, dissolute persons may be mesmerised and retain their habitual character in the mesmeric state: but this is not mesmeric attachment: merely the manifestation of vicious feeling at that time just as it might occur on another opportunity. If any disposition to impropriety is observed, a mesmeriser should firmly refuse to mesmerise the party again: and, if mesmerism would be a mercy to the patient, a mesmeriser of the same sex should be selected.

* See a fine example by Dr. Engleduc in No. VI., p. 269; by Mr. Topham, No. XVIII., p. 126, in which only one half of the patient sympathized, but with either side of the mesmeriser; by Mr. Holland in a blind gentleman, No. XVIII., p. 140; by Mr. Hockley, No. XIX., p. 307; by myself, No. XIX., p. 241—6.

These cases are a full exemplification of the subject; and merit the deep reflection of every philosophical person.

putting cold water into my mouth. I was thoughtlessly about to give her water when she complained; but on it being handed to me I took some myself before I advanced with it to her, and she to my surprise exclaimed, "That is nice and cool;" both of us being relieved at once from the burning sensation. (No. XIX., p. 243.)

It is remarkable that, although raisins in the operator's mouth produced habitually no unpleasant sensation in him, the sympathetic sensation of raisins in the patient's mouth was as disagreeable to her as when raisins were in her mouth. Of course, I presume, if she had not suffered uneasiness habitually from raisins in her mouth and the operator had, she would sympathetically have suffered the uneasy sensation which he would have felt.

The phenomena illustrating the great force of imagination in the mesmeric state perfectly coincided with those which I have observed in so many patients. In common sleep imagination produces effects which no force of imagination produces in the waking state. We cannot "hold a fire in our hand by thinking of the frosty Caucasus:" but Miss Collins, when I told her I had given her sweet cake and kept the points of my fingers upon the organ of Alimentiveness, munched bitter aloes with exquisite relish and in a quantity which produced great subsequent effects.* When Thomas Russet fancied I was a respectable young woman of his acquaintance with whom he was taking a walk, I could make him fancy that I had given him sweet cake, whereas I had given him dried wormwood, which he chewed and swallowed with delight, though, on my suddenly waking him after he had been eating for some time, he was so disgusted that he ran out of the room and spat it all out and vomited.† The Okeys in their mesmeric state would have fits of partial delirium, in which they held conversation with an imaginary being. In a very striking state of the elder Okey, she fancied she saw a *beautiful negro* and continued whispering questions to him and then resting in silence for his answers. My observations on this point in No. XXIV., p. 372-3, may be worth perusing by those who are learning the mesmeric phenomena.‡

* No. XII., p. 461-2. This case, and others in the article, are a fine study to the mesmerist.

† The patient from King's College Hospital (see No. III., p. 340, &c.), whose phenomena were so interesting as well as his cure, though Dr. Todd calls them hysterical only, and felt not the least interested in them. A pretty word is hysteria to enable us to disregard wonders of human nature. See No. XXXI., p. 237.

‡ See also Mr. Parsons's most interesting case, to which my observations are appended as a note. That gentleman's patient, a youth, uttered predictions fancied to be communicated to him in a book to which a ghastly figure pointed.

The augmentation of muscular strength, and of the force of memory during the mesmeric state, are occurrences seen by all of us: and in truth any faculty or power of any part of the brain or of other organs may be augmented or diminished in this state, as in similar states not produced artificially.

The benefit from holding the mesmeriser's hand deserves attention. The good might arise from the happiness experienced from holding it: but nervous energy might be positively imparted, for we know that healthy, robust, active, happy persons in the prime of life, and with a warm fleshy hand, produce far more health in mesmerising than others: and that some mesmerisers who are in apparently perfect health frequently disagree with many persons, from something discernible but not previously known to us, or from something occult.

JOHN ELLIOTSON.

V. *On the Psychological Theories of modern German Physiologists.* By Mr. R. R. NOEL, Rosavitz, Bohemia.

(Concluded from p. 294.)

AMONGST the other curiosities, so abundant in Lotze's article, I may as well communicate one, taken from the fifth chapter, "On the formation of conceptions." The Professor, treating of the development of the conception *I*—of our individuality—says:—"The observation that, as regards the existence of the *I*, many of the bodily parts can be dispensed with, the contemplation of dead bodies, and other observations, cause the image *(bild)* of the living body to become insufficient for the expression of the *I*; and in its place the conception of a constant, change-outliving, imperceptible, thinking substance is formed. In this we see the analogy of that process, through which the common perceptions of the senses give place to the conception of a thing, or of soulless substance *per se*. And, just as this conception of substance *per se* is held to be the seat of those powers which operate in nature, so also the ultimate cause of inward experience is sought for in the mind *(seele)*. In this manner, however,—through the process of thought,—has only the general conception of the mind arisen; and it is not thus that his *I* has become clear to each individual. The principal feature in individuality is not, therefore, to be found in the mind itself, as a thinking, unchangeable substance, but in the empirical *I* alone." A little further on, he adds, "The peculiar tone of the mind, the temperament, we consider to be a nearer seat of this sought for *I*."

It is unnecessary to waste words in criticizing the above passages. To do so fully, I must report more of Dr. Lotze's lucubrations on the mind *per se*, and on the empirical *I*. We shall speak on the latter subject in another article.

Professor L., who understands enough of the principles of physiology, of the results of combinations of parts and systems, of their mutual relations, actions, and reactions on one another,—in short, of the conditions of organic life,—to reject the old notions of a peculiar power of life *(lebenskraft)*, yet will not allow that there is any analogy whatever between the facts and arguments which have at length dispelled this phantasm of physiologists, and those which materialists bring forward against the acceptance of a "peculiar principle" or power as the ground of the phenomena called mental. I shall, however, not take up time with the Professor's arguments on this head, for they have no physiological weight, and scarcely any speculative interest.

Having now shewn enough of the manner in which our author treats two of those circumstances, which, according to his view, prove the necessity of the admission of a "*peculiar principle*" to explain mental phenomena; viz., the consciousness displayed in perceptions, feelings and desires, and the oneness of consciousness, we come to the third circumstance,—the peculiar freedom of action that the mind displays. The Professor is obliged to confess that this circumstance is not a fact of observation, but merely an admission. In the course of his argument he says:—

"The difficulties which are connected with the idea of free-will are too great to allow us to build upon it our further psychological views. But, although it is not necessary to express here a decisive opinion on this point, I should be sorry if the declining to do so were to be thought to imply that, merely out of reverence for generally received opinions, I disregarded the importance of the subject. It has often been said, and to me particularly in a tone of reproach, that regard for freedom of will—a point we consider so necessary to be acknowledged—should not deter us from admitting the thorough dependence of the mind on the body, and that it must be left to faith to satisfy our moral wants. Those who express themselves thus should consider that this dependence is by no means proved, and, apart from this much contemned regard for our moral wants, that there are difficulties opposed to the materialist views that have never yet been overcome." Again he says: "All scientific investigations must in the end conform to views embracing the whole universe, and we must never allow any science to develop its doctrines in such a manner that, however well they may harmonize in themselves, they should nevertheless take a direction in which other no less important requirements cannot be satisfied. I require the investigating

mind to employ its whole powers on every subject, however unimportant, and all the requirements of the mind, not the theoretical only, to be fully attended to, so that whenever scientific results do not satisfy all mankind, they should at least not be permitted to close the door to further satisfaction. In scientific investigations of nature, we are not to be led by our mere theoretical wants, like lower animals by a one-sided instinctive idea; on the contrary, we must consider that in those analytical examinations of things where we proceed from that which is before us to its grounds, we arrive at a plurality of possible explanations, and that it is not the first best suggested by impressions on the senses that is to be taken, but rather that we have to choose that one which agrees with our æsthetical and ethical requirements. Such requirements may appear untenable to *thinking brain-fibres*, but minds *(geister)* will approve of them."

Such sentiments as the above would sound very prettily in the mouth of a mere speculative moralist or a divine, but are rather curious, to say the least, as the creed of a physiologist. Professor L. backs out very readily from the examination of the question of free will from the physiological point of view. He does not apply to it the light of that philosophy which has for its basis scientific research; the experience that, in the so-called inorganic or organic worlds, we know of no states or conditions of things but what result of necessity from foregoing states and conditions. But, apart from this question, it may be asked, What is Dr. L's interpretation of man's æsthetical and ethical wants? There are doubtless some views on this head that, in so far as the elements of human nature and a certain amount of the external and social circumstances in which men are placed are everywhere the same, may be called universal and absolute. But we cannot deny that the conceptions of the beautiful and the moral have, in the history of all nations, displayed, and do at this present moment, amongst the most highly educated communities, shew, a varying, relative, and individual character. What standards does Dr. L. set up for his æsthetical and ethical judgments in general? May they not have been formed under the influence of those objects and conceptions of beauty, physical and moral, concrete and abstract, which in especial prevail in his country, amongst his race, and which the schools of art and the schools of philosophy in Germany have embodied and taught? And as regards his condemnation of materialism because it will not satisfy our æsthetical and ethical requirements, cannot a conscientious materialist be of a totally different opinion? When we consider the doctrines of spiritualism in their origin and their results, we can, on the one hand, acknowledge their foundation in the nature of man, and their influence in the history of his moral development. But, on

the other hand, we must not overlook the dark side of the picture,—the awful crimes, the deeds of blood, the cruelty and injustice,—which have been sanctioned by blind faith, yes, even by ethical and æsthetical dogmas. How many naturally not cruel and depraved beings, calling themselves Christians, have not regarded with indifference, if not with pleasure, the torturings, the immolations of fellow creatures, pronounced to be heretics or witches, and have not believed that such *barbarities* were gratifying to their God? And even in our days, despite the humaner views which science has promoted, do we not find narrow-minded antipathies and animosities grounded only on a difference in belief?* A Spanish lady of the present day will witness with feelings of agreeable excitement, even if they be tinctured with some emotions of pity, the combats, the tortures, the agonizing deaths of brutes and men, and without doubt call the spectacle beautiful. Her conscience is at ease, for no father confessor has told her that it is sinful to visit the arena of the bull-fight.† But I need not dwell on this topic; for all who have studied history and traced the progress of civilization must be aware that something more than mere faith or than hitherto prevailing scholastic dogmas of the ethical and æsthetical must be taken into account, if we would understand the main agents in promoting real virtue and happiness. In our times, especially, something more is wanting, for no one who attends to the state of things in Europe can doubt that a spirit of criticism is abroad, and that, as regards many ancient and once venerable doctrines and institutions, a process of dissolution is apparent, which, unless the sound education of the people becomes the principal aim of statesmen and those possessed of power and wealth, threatens society with fearful convulsions. What is wanted is practical moral science, based on the knowledge of man's nature, on the principles of materialism, on the understanding of the connections of things, of their mutual relations in the great causal chain of phenomena. The

* Look at the intolerant feelings fiercely raging in Great Britain at this moment, of Roman Catholics and Protestants, of the Church of England and other Protestant sects, nay, of the various divisions of the Church of England, and of the varieties of Protestant dissenters, against each other; and at the private persecution constantly at work in conversation by every religious sect, both of all the rest, and of truly good, elevated and high-minded men, who are rational enough to use with thankfulness and a strong feeling of duty the common sense with which they are endowed. Read our article on the Rev. H. Wilberforce, in the number for July, 1846, headed *Arrogance Unmasked*. He is now a Popish priest, and was with difficulty brought to see it his duty to leave the Church of England.—*Zoist*.

† See *Zoist*, Vol. III., p. 277, for an account of a visit of the queen of Spain to a bull-fight, and of her attendance at church, and being blessed by a bishop shortly after.

philosophy of necessity offers more practical lessons than any speculative theories founded on the immateriality of the mind. The advantages, the necessity, of moral conduct to the promotion of happiness—mankind being considered as a whole—are plainly demonstrable, and arguments to this effect can be supported at every step by physiological and pathological facts. Indeed, until the principles of physiology and the science of anthropology be thoroughly understood and generally taught, moral progress can be but slow; and there is little chance of those mere abstract and mystical doctrines, which even now-a-days enchain the mind and cause men to be uncharitable to one another, falling to the ground.

But to return from this digression, into which the pompous sentences of our professor of physiology about the æsthetical and ethical wants of man have led me. In further explication or modification of his doctrines, he informs his readers that he "believes we have no right to assume a peculiar principle for the explanation of conceptions, feelings, and propensities, since the *whole nature* of such a principle could only consist in producing these phenomena in consequence of excitements from without."

"We must rather acknowledge," he adds, "that these faculties pertain to a subject already characteristic of itself, and which by no means requires to be always the same."

Further on, Dr. L., speaking of those objects in nature that may be presumed to be endowed with soul, says:—

"It is a difficult question to decide which of their manifestations are to be deduced from the *attributes of spiritualism;* which from other sources."

The foregoing extracts, so remarkable for their profundity, lucidity, and consistency, have been taken from the first chapter of Lotze's article. In conclusion, we will glance at a few passages in the sixth chapter, "On the mind and the central organs."

Lotze commences here by saying that observation and experience form the only means by which to increase our knowledge of the mutual influences, the actions and reactions, of the mind and central organs on each other, of the way in which these take place, and of their limits. Here he again speaks of the mind as something entirely distinct from the body; something which can be stimulated by the latter, and can react upon it. In several parts of the work much stress is laid on these mutual influences, and actions and reactions of mind and body. There is no difficulty, according to the principles of materialism, in understanding what is in reality

implied in such expressions. In the relations of human beings to the outward world, and in those of the manifold parts, systems, and organs in the human frame to each other, actions and reactions are continually taking place. But mental philosophers and certain phrenologists* are constantly dreaming about the actions and reactions of spirit and matter, of mind and body, whereby they argue as if some particular supernatural power or essence—some mere phantasm—having no analogy with sensible objects, or with the so-called imponderables, were yet amenable to *natural* laws, and can be affected by matter and react upon it. It is high time that such absurdities were desisted from by men professing to be students of nature.

Lotze, however, directly after the mystical passages just glanced at, candidly confesses that materialism, one point excepted, is a "*clear and plain view.*" The point excepted is of course the oneness of consciousness. "Not the same can be said," he adds, "of those views, according to which the brain is the organ or instrument of a supposed independent mind." Strange to say, the Professor actually strikes here into the right path, and he shews up the absurdity of the orthodox phrenological doctrine. But he cannot march straightforward, for he delights in byeways, dark and tortuous paths; and he therefore immediately qualifies his condemnation of the above view, by adding that it "at least deserves praise, for entering a protest against the complete amalgamation of mind and body." (Has he forgotten his own "*unity of mind and body,*" his "*unknown substance,*" his "*subject, combining psychical and physical attributes in one?*") "When I hear of an organ of thought," Lotze continues, "the question immediately arises, in how far can this action require an organ, or in what way can any given mass of the brain, together with its supposed powers, actually serve the purposes of thought? In the common opinions on this question I find no answer; for the perfectly *brainless idea,*† according to which particular motions and changes in the brain are called thinking, I naturally cannot allow to pass as such." It is rather amusing to find our psychologist, in his eagerness to vindicate the immateriality of thought, call the converse view to his own a "*perfectly brainless idea.*" However, those physiologists who actually regard the brain as the mere organ of the mind, *i.e.*,

* Herr Struve, for instance, though an ultra-destructive in politics, is very conservative as regards the old doctrines of the mind. In his German work on Phrenology, he attaches much weight to the actions and reactions of spirit and matter, mind and brain.

† German, "*kopflos,*" headless; but brainless is the English equivalent.

of a spiritual power, or what not, are guiltless of the crime Lotze condemns. Not so those who use the term mental organ in a sense analogous to that in which physiologists speak of bodily organs in general; for instance, of the lungs, as the organ of respiration. Functions, thus abstractedly conceived, are not elevated by physiologists into immaterial powers; effects are not mistaken for causes. Lotze seems to confound two very different employments of the term organ. I long ago, in my German work on Phrenology, expressed my opinion, that there will be much more chance of physiologists paying due attention to Gall's discoveries of the functions of the brain, when phrenologists shall cease to speak of the brain as the *mere organ* or *instrument* of an *immaterial human mind.*

In the course of his arguments against organologists, Dr. L. asserts that the formation of conceptions, that thinking and reasoning, and all higher mental processes, will not admit of the co-operation of the organs for their explanation; nevertheless, he adds, all conceptions and thoughts, in so far as their contents are derived from outward perceptions, certainly do require this co-operation: this much, and no more, being shewn and confirmed by experience.

"But the nerves do not appear in the process by which perceptions of the outward world obtain, and give rise to subjective sensations, to act as organs, properly speaking," continues our Professor; "their states are merely the conditions which give to the *in itself unbodily sensation,** in each case, a particular character. This one point is certain (?) with it a second, but uncertain one, is connected. Neither common observations, nor any theory well-founded in itself, force us to admit that the actions of bodily organs have anything to do with conceptions, in so far as these are acts of memory, and not direct perceptions. Experience shews us nothing in this respect, and neither anatomical nor physiological observations support the view that memory depends on bodily organs. This view, too, is not necessary in itself, for it is not the question here, whether the mind shall learn the form of a succession or combination of external objects—which to be sure it could only have done, in the first instance,

* Professor L., in the chapter "On the qualities of sensations," develops at full the theory to which the words in italics refer. Sensation itself, he asserts, is a phenomenon pertaining only to the mind *(seele) per se.* He allows, however, a certain "proportionality" between the nervous states which act as stimulants for the mind; modifications resulting from the varying *tone* of the nervous system being taken into account, and the contents of sensation. That "another changeful element, the states of the central organs, should stand between nervous processes and sensation, and have an influence over the latter," Lotze holds to be "thoroughly improbable." The wondrous arguments, the ambiguities, the twistings about, in this and all the other chapters, must be read *in extenso* to fill the cup with enjoyment or disgust, according as the reader may have a turn for mysticism, or for scientific investigations and sound inferences.

through the intermediation of bodily impressions; the mind has to reproduce only what it *actually possesses in itself*, and, without doubt, there is just as well room in it for the variety of conceptions, as for these, like endless complications of sound-figures, as it were, to imprint themselves on the separate elements of the brain.

"In support of the latter view, a few extraordinary cases only can be brought forward, in which the destruction of a part of the brain has been attended with loss of memory in general, or of a certain class of ideas only. We shall speak of these cases presently. We repeat here, what we have already admitted, that this view, however deficient in foundation, does not imply anything totally impossible. We can, if we will, consider the mind to be to that extent *sluggish*, that it never works itself out of its unconscious existence, into a state of consciousness, unless motions of the *body stir its substance too;* thus the course of the associations and reproductions of conceptions may, at all times, develop themselves, as the chain of bodily changes becomes unrolled. But if we are willing to concede this much, still the central organ in this case would only, through its inward processes, afford a succession of influences, owing to which mental consciousness—a thing existing of itself, and by no means to be thus explained—receives its direction to particular subjects. And in this case the brain would not so well appear as an organ, by means of which the mind thinks, but rather it might be *compared to a rudder*, which directs a vessel in its course, without assisting in its onward progress. On the other hand, this view (that conceptions in memory depend on bodily organs) contains, if it were to be carried out consistently, and supposing *this possible*, the same concession which the most complete materialism demands, indeed, it may be said, even a worse. He who amalgamates mind *(geist)* and matter, has at least ground for the assertion, that the former cannot be without the latter; but he who separates the two, and yet allows the first to dangle in this way after the latter, constructs merely a machine, and cheats himself with the hope that faith will work wonders and reanimate this abortion of science."

Lotze continues in this strain to express his opinions regarding mental organs, and sums up at length as follows:—

"We must admit that, owing to changes which previously take place in central organs, every first perception of an object, every first conception of things, is forced upon the mind; neither necessary, nor probable, though not impossible, is the second view, that all consciousness likewise is a forced state of the mind, forced in so far as without the continual stimulus of the ever-changing nervous processes the *mind would fall back into an unconscious state;* impossible, however, is the third view, that the brain is an organ which the mind makes use of to become capable of forming conceptions in general. It is only by the procuring of the materials on which thought may occupy itself, that the central organ can, in fact, promote the purposes of thought, but no bodily co-operations whatever —the knowledge of outward objects, once for all, being presupposed

—can ever promote *the necessary connection in logical reasoning*, or *in æsthetical and moral judgments*. We see, therefore, that there cannot be any organ whatever which the mind makes use of, but that there are merely conditions on which the *direction* of its activity depends. On this account, I have already stated the opinion that there can be no bodily organs for the *higher* mental states, since the mind is bound to the co-operation of the body only in so far as it may require to receive impressions from without, and to manifest inward states externally."

But, even after this *resumé*, Professor L. cannot resist the pleasure of dwelling further on this theory, and he leads the patient reader into a labyrinth of arguments intended to prove that logical reasoning, æsthetical and ethical judgments, and other "higher mental states," do not depend on bodily conditions. I must humbly confess that I have been totally unable to find the logical thread to lead me, through this intricate psychological labyrinth, to new scientific facts or sound inductions. I can find only vague speculations, inconsistent hypotheses, and tortuous arguments, to escape, as it would seem, from the consequences of strict physiological principles. According to Lotze's theory, Caribs, and other savage and next to idiotic tribes, must possess logical reasoning, æsthetical and moral judgments; it is some bodily hitch only, we presume, (our Professor vouchsafes, however, no special information on this head,) which prevents these high qualities being manifested by individuals of such tribes, although their minds, *per se*, always possess them. In respect to insanity, the Professor allows that the above-mentioned higher mental states are often absent; but in this case, he adds, "they never can become lost to the mind; it is their applicability only, depending, as this does, on the manifoldness of the world of conceptions, which may be spoilt."

Some insight has been already given into Lotze's doctrine that moral judgments are independent of bodily co-operations. But in another part of his article, this, like each of his other psychological views, is considerably modified, and we find the "perhapses," and "not seldoms," the "buts," &c., again acting a prominent part. "We judge morally," he says, "of every action in a twofold manner; firstly, theoretically, by subjecting it to our general principles, which have an absolute value in all men (?) secondly, by looking to the feelings called forth in us by the conception of the action which has taken place, which feelings not seldom betray their origin in bodily sources." He speaks, too, of "æsthetical feelings" being seldom, perhaps never, entirely separated from "sensual feelings," which latter form "*a gentle running accompaniment*

to the former." And, even as regards thought, he cannot entirely shut his eyes to the fact, that this pure mental action has something to do with bodily states. On this head, he thus enlightens his readers:—

"A chain of scientific thoughts does not," he says, "pass abstractedly *through the head*, without exciting a recollection of ourselves, or without becoming perfectly amalgamated with the picture of our *I*. Self-observation teaches us, that even in this process the separate links of the chain obtain for us a certain objective clearness, and that *we move about amidst them*, not without feelings of ease or awkwardness, of freedom or constraint. Thus on the whole, even our abstractest ideas and trains of thought are accompanied by a continual symbolizing, whereby we appropriate to ourselves their import, by the aid of sensual feelings, and in such a manner that we seem no longer to be performing an act of pure thinking, but rather one of the entire, individual concrete *I*. In this transformation of pure mental actions into such as excite not merely the abstract mind *(geist)*, but the concrete whole of the individual, we find a ground of probability, that in the acts of memory our conceptions are likewise accompanied by a weaker nervous process, resembling that which they would have originally produced when the outward perceptions actually took place. But, we must distinctly add, this probability is far from being a certainty, and that, even if it were, still conceptions could never, in the first instance, receive their excitation through the nervous processes, *but, on the contrary, the latter through the former(!)* We are further of opinion that the conception of a red color, for instance, does not reproduce that state of the optic nerve, or of the *optic central organ*,* owing to which the conception of a red color would originally take place—although this is not an impossibility—but rather the conception awakens the nervous affections, which moreover are always the consequences of conceptions. And it is exactly in this sense that the sensorium would prove itself to be an organ of the higher *mental actions*, namely, as an instrument which these make use of, to give to *their* conceptions a higher degree of clearness and interest."

I fear I have taxed the patience of my readers rather too much in giving so many extracts from Lotze's work. And yet they will but suffice to convey a general idea of his theory of the "mind and the mind's life." It would require volumes to enter into all the details. The passages selected have been translated conscientiously, as regards the author's words, and may be said to belong to the least obscure. We plead guilty only to faults of style, in attempting correctness as to sense. To have given a mere digest of the Professor's theory would have been a more agreeable task, had it been possible to do

* Lotze speaks in several parts of his work of central organs in general, and in particular of an optic central organ, and of a central organ of hearing.

this in a few words. The specimens communicated will suffice to shew that such an attempt would be nearly as difficult as to square the circle. In justice to Dr. Lotze, we must add, however, for the edification of English readers, that he enjoys a vast reputation in Germany, amongst this nation of thinkers.

That such a profound psychologist should reject phrenology must be taken as a matter of course. One of L.'s objections to the science is founded on the absence of logic and consistency in the phrenological doctrine that the brain is a mere organ or instrument of the mind; yet we have just seen that our Professor himself speaks of organs and instruments which *mental actions make use of* to give to *their* conceptions a higher degree of interest, &c. ! This is like seeing the mote in a neighbour's eye and disregarding the beam in one's own. Lotze is entirely ignorant of the fact that there are many phrenologists who base their doctrines on *nature only*, and eschew mere metaphysical and mystical assumptions. Lotze reproaches the followers of Gall, too, with departing from the doctrines of their master. "Gall," he says, "never taught that there are organs for higher mental states, but tried merely to connect those actions with particular central organs, by means of which the mind inwardizes (to coin a word for the nonce) outward objects, and expresses outwardly inward states."

We see by this, how attentively Professor Lotze must have studied Gall's works; and now we will take our leave of him.

R. R. Noel, Rosavitz, Bohemia.

VI. *Cure of chronic Scrofulous Ophthalmia,* by Mr. Amor. Communicated by Mr. Kidd.

"With a due sense of the exalted power of emotion, imagination, and fancy, *we* would, at all times, discountenance conduct tending to reverse the natural order of things. In the economy of God's providence, it is clearly the rule that Mind or Intellect should govern the emotions and passions; whereas the works and practices of mesmerism reverse the order of education, and render the lower impulses of human nature predominant."—*On Healthy and Diseased Structure, and the true principles of treatment for the cure of Disease, especially Consumption and Scrofula; founded on Microscopical Analysis.* By William Addison, M.D., F.R.S., Wimpole Street; 1849; p. 177.*

"To the Editor of *The Zoist.*

"Sir,—I beg to enclose you a letter from Mr. Kidd, together with the statement of Lydia Saunders, the mother of the little girl men-

* What is the good man dreaming about? The best way to promote his own interest?---*Zoist.*

tioned by him, and to testify to the truth of his statement; and if you think it worthy of a place in your valuable journal, I should, as the mesmeriser, feel delighted to answer any questions relating thereto.

"Should any lady or gentleman doubt the cure of scrofulous ophthalmia by mesmerism, I will produce the little girl if called upon to do so, when she can tell her own tale.

"I am, Sir, your most obedient servant,

"135, New Bond Street, "JOHN AMOR.

"7th Dec., 1850."

"To the Editor of *The Zoist*.

"Sir,—I have, for very many months, been narrowly watching the progress of the newly-revived science, called mesmerism; and, being naturally of an enquiring mind, I have given no inconsiderable attention to the subject in all its wonderful ramifications. The 'cases' which have from time to time been introduced to the public through your journal, have startled me not a little.

"The respectability of the sources from whence your information has been derived; the signatures attached to many remarkable authenticated cases of cure by mesmerism, when all medical aid from the 'old school' had failed; these and many other weighty considerations, the result of much observation on my part, have induced to the belief that there is more in the science than meets the general eye,—'more things in heaven and earth than are dreamt of in our philosophy.' Once a perfect infidel, I am now an avowed believer in the truth of what I have witnessed 'with my own eyes.'

"I will not, being one of the laity, exercise myself in discussing the various phenomena attendant upon persons in a state of mesmeric somnolency. They are sufficiently curious, and afford *materiel* for intense thought,—seeing that, after all that has been said about the 'vital principle,' and after all that *can* be said about it, the question remains still an open one,—'WHAT IS IT?'

"The simple 'case' annexed, is one of a girl aged 12, the daughter of poor but respectable parents, residing in the New Road, Hammersmith. She was seen one day, in October last, seated in an omnibus, with her face tied up, and her eyes partially bandaged; the latter presented a *most appalling spectacle*. There were two abscesses, one on each eyelid, and the eyes were considerably inflamed. The child's face was *deadly pale from debility*, and her general appearance indicated that she was in a *deplorable state of suffering*.

"It so chanced that Mr. John Amor, of New Bond Street, was present on this particular occasion. Seeing what a miserable plight the poor child was in, he kindly asked what ailed her? The girl's answers were so simple and straightforward that Mr. Amor felt particularly interested in her welfare, and he humanely went to see her parents at once."

"It was then arranged that, if Mr. Amor would kindly try the effects of mesmerism, the child should come to his house regularly

every morning (Mr. Amor lived in the New Road) to be mesmerised. I heard of this, and, being an intimate friend and neighbour, felt pleasure in watching the daily and weekly progress of the operations. I should here remark that Mr. Amor, like myself, is non-professional; that he is perfectly independent in all his actions and opinions; and actuated in all his amateur experiments by one single motive,—the desire of benefitting his fellow-men.

"When I first saw the child, the abscesses on her eyelids it was painful even to witness. Within *a short week*, however, one of them had *nearly disappeared* altogether, and the other was gradually being reduced. In *ten days* the child's whole appearance had undergone a *complete metamorphosis*. Not only were her eyes becoming '*clean*' *and healthy*, but her habit of body was *altogether changed*. Instead of the attenuated, sickly being I first saw, behold, there stood before before me a *little plump damsel*, merry, *playful, and animated*. Her eyes, too, had gained in this short space of time strength sufficient to enable her to do *needlework without any sensation of pain*. A month previous, to do needlework was with her a matter of impossibility.

"Thus has she progressed until the present time. The ravages of the disease will never, of course, permit her eyes to be free from *all* disfigurement; but since they were strengthened, they have in no degree 'gone back,'—which is marvellous exceedingly. To renovate her stomach, she has had given her one glass of port wine daily. I need hardly say, the medical profession had given her up as 'incurable.'

"Several of my neighbours accompanied me in my visits to Mr. Amor's house, and can equally well attest the truth of what I here relate. The 'case' itself, as jotted down by the child's mother, will tell its own tale; but as all these 'great facts' ought, for the sake of truth and for the benefit of society, to be corroborated, I unhesitatingly append my name, and remain, Mr. Editor,

"Your obedient servant,

"William Kidd.

"New Road, Hammersmith, Dec. 7, 1850."*

Maria Saunders, 12 years of age, has been suffering for *years* with diseased eyelids, which commenced with repeated styes after her vaccination at ten months old. I have tried many things that were recommended to prevent them; but to no effect. At three and a half years old she had the measles, which seemed to cause severe affliction. From that the eyelids have been very bad, sometimes bunches arising, eyelids very much swollen, and, although she has been attended by many medical men, such as Mr. Alexander, Cork Street, Dr. Simpkins, Curzon Street, Dr. Routh, Dorset Square, and Mr. Obré, Lisson Grove, who *drew the eyelashes all*

* For a similar cure of ophthalmia and references to others, we beg our readers to look at No. XXX., pp. 191-5.—*Zoist.*

out, and burnt the lids with something which turned them quite black and caused a *deal of pain every morning*, with a view of curing them, until I could not bear to take her any more. I then tried Dr. Savage, of Upper Gloucester Place, for some weeks, but to no avail. I was then recommended to try Dr. Stewart, of West Cottage, South Bank, who strongly recommended port wine and new-laid eggs. I had not got it in my power to get that for her, and finding his application of no use I left him. I have tried many things for their cure, such as ointment that Mr. Watts, chemist, Edgware Road, recommended, repeated pots of the golden ointment, and different eye-waters. She has been to the Eye Institution in the New Road, as out-patient to the University College Hospital, Gower Street, and to Dr. Epps, and all to little or no good. I went to Dr. Malan, the homœopathist, who told me there was no cure in the old school for that disease, and that he could not cure it. I at length resolved on going to no more medical men, but merely keep them clean and trust to Providence. (Signed) LYDIA SAUNDERS,
Mother of the child.

Starch Green, Hammersmith.

NOTE BY THE ZOIST.

This cure was a mere coincidence—a mere *post hoc*, without any *propter hoc;* just like Miss Martineau's own cure and *all* the other mesmeric cures recorded in our *eight* goodly volumes. No rational being would think otherwise. "*Certainly not*," says the *Athenæum:* "*Certainly not*," says the *Lancet:* "*Certainly not*," says the *Medical Gazette:* "*Certainly not*," says the *Medical Times:* "*Certainly not*," says the *Institute:* "*Certainly not*," says every teacher to his pupils: "*Certainly not*," says the family doctor to the mother of the family,—"cer-tain-ly not, ma'am: and those who think mesmerism had any share in the cure are weak-minded persons, not fit to be consulted. Besides, ma'am, mesmerism always debilitates, and causes irritation of the brain: and is very dangerous: and what is more, ma'am, it is complete humbug. I should be ashamed to look into the subject, for Sir Vinegar Won'tsee, Sir Fiddle-faddle Coldheart, Dr. Curechest, Dr. Curenerves, Dr. Cureliver, Dr. Curekidney, Dr, Hurryon, Dr. Plausible, Dr. Holyman, and every leading consulting physician and surgeon in town and country, all who will live long after they are dead, ma'm, though I cannot hope for so much, albeit I have sent some interesting trifles to the journals and seen my medical speeches in print, all laugh at it, I assure you, ma'am."

We can imagine Mr. Amor, when standing at his door in Bond Street, and seeing the endless sons of Esculapius hurrying along, some in aristocratic vehicles, some in humble ones, and some on foot, smile at the consciousness of his knowing important facts in physiology and pathology, and powerful methods of alleviation and cure, all which are, to the cruel misfortune of their patients, totally un-

known to them. We could excuse him for saying loud enough to be heard,

"Omnia vincit AMOR;"—

The time will come when all medical persons who may happen to hear him must finish the verse and say,

"— et nos cedamus AMORI."

VIRGIL. *Eclog.* X.

VII. *Account of "The Historical Relations of ancient Hindu with Greek Medicine in connection with the study of modern Medical Science in India: being a general Introductory Lecture delivered June,* 1850, *at the Calcutta Medical College.* By Allan Webb, M.D., *author of the* Pathologia Indica; *Surgeon Bengal Army, Professor of Descriptive and Surgical Anatomy, lately* OFFG. *Professor of Medicine and Clinical Medicine. Calcutta,* 1850." Communicated by Dr. Elliotson.

"QUACKERY.

"It will form no part of our policy to ignore the existence of any species of quackery, until it is, indeed, wholly suppressed. It is our intention rather to grapple with its hydra heads in detail. Mesmerism, doubtless, finds many believers still. Faith is a normal principle of the human mind; we instinctively believe everything which is confidently related; it is only by painful experience that we come to doubt of alleged facts, when we have discovered the infinite variety of motives which actuates men to practise deception. The followers of Mesmer continue to make bold assertions, and to find unwary persons to receive them as truths. Amid the multitude of subjects claiming the study of young medical men, it is no wonder that they can give no time to the history of frauds. So long as there are living exponents and upholders of them, with address and talent, so long will there be inadvertent disciples.

"Thus it is with the question before us. Our respected correspondent, Dr. D'Alquen, whose letter we print in another column, claims our notice, as he is certainly an example of a class in the profession, not large indeed, but still respectable, who, for various reasons, entertain the opinion that there is actually *something* in mesmerism. We pledge ourselves, before we lay aside the subject, to shew that there is *nothing* but the old staple of all quackery—bold assertions, half-observed facts, and multifarious inventions.

"At the foundation of the whole, lies the allegation that certain phenomena may be elicited by and upon certain favoured individuals of the human race, which phenomena, although purely physical, wholly fail to appear when others—and these a majority of mankind—are operated on. Here is a contradiction at once to all physical science, and a case calling for an entirely new set of rules for our scientific logic. If chemical affinities only manifested themselves in the hands of individual philosophers; if the electric shock, or the magnetic motion of the needle, only shewed themselves at the bidding of one, or, at most, a few persons scattered widely through time or space; then we might listen to an account of other physical phenomena equally marvellous. But surely it must be at once perceived that any man pretending to be able to elicit actions or properties from natural agents, which refuse to appear at the bidding of others, throws the question of his credibility at once back upon his personal character.* We must ask, is he honest and trustworthy?—is he credulous and deceivable?—can we be sure he is neither deceived nor capable of attempting to deceive us? Nothing of this kind is applicable to true science. The greatest rogue in Chris-

* Opium *always* causes sleep, purgatives *always* act, people are *all* sick at sea.—J. E.

tendom might discover a new metal, or a new test for arsenic. The experiment would only have to be repeated, to fix the fact in the records of science for ever. Nothing alleged of mesmerism is similar. We are referred to what Mesmer did (and, by the way, we may observe it is our intention to shew the character of that miscreant to our readers in a future article; we are told what has been done in Calcutta; what was *once* done *somewhere* or *other*, not what may be demonstrated anywhere with due precaution and ordinary skill! We are not speaking of miracles, as we apprehend mesmerisers do not pretend to miracles in the ordinary acceptation of the word.

"To return to our correspondent, does he think that Dr. Elliotson quitted his position at University College on a question of mere professional etiquette? If so, we refer him to the *Lancet* of the period, and he will see reason to change his opinion. Mesmerism actually began an alliance with demonology! Whilst, at the same time, the attempt was made to shew that the alleged phenomena followed the usual course of science by subjection to the influence of various metals. All its pretended facts were scattered to the winds by the application of a little common sense, and a few experiments made by Mr. Wakley. For which service he has our thanks.

"Dr. D'Alquen quotes a passage from Dr. Forbes; but does he forget, or did he never hear of the exposure of the fraud attempted by a certain Alexis, by that physician. We suspect, that the passage quoted from Dr. Forbes was written before the adventure in question. It would be more to the point to have his present opinion. Is it possible to receive the testimony of persons once so exposed, so convicted of either incompetency to deal with physical science, or unfaithfulness to the holy cause of truth and honesty? We think not, and therefore reject as fabulous the alleged power of 'manipulations' and 'passes,' to render any one insensible to the pain of surgical operations. We have now several definite physical agents, ether, chloroform, &c., to effect this purpose completely; but the influence of these anæsthetics gives no support to the power of mesmerism."—*The Institute:* a weekly medical journal, Nov. 30, 1850.*

This lecture was published at the request of the Council of Education of India. It opened the 16th Session of the Calcutta Medical College, which was instituted in 1835.

"The finest medical education is freely offered gratis, to all comers; of whatever creed, of whatever caste, of whatever clime. No wonder where all is thus freely given, that we find this goodly gathering of students, of all kindreds, and countries around us. From the Punjab to the Burman Empire, from Ceylon to the snowy mountains of the north, our young men assemble here; without any other jealousy than that of professional honour, any other distinction than that of science. All are equally welcome, equally rewarded, equally respected, if they do well."

The Bishop, in his address upon the Queen's birthday, said,—

"Her Majesty will, we are persuaded, be also pleased to learn, that the Indian Government has succeeded in a truly wonderful manner in diffusing through the land the soundest principles of medical science; that graduates are being educated at the Medical College in a manner not inferior to some of the most celebrated schools of medicine in Europe; and that their skill and talents are successfully exerted for the mitigation of human suffering, in the various dispensaries of the provinces."†

* See p. 377.—*Zoist.*

† *Christian Intelligencer*, June, 1850.

Dr. Webb states that the ancient Hindoos were far behind the Greeks in anatomical knowledge: but that both nations were upon a level in physiology, though there is little doubt of the Greeks having derived their systems of philosophy and medicine from the Hindoos. Galen, the Greek physician, who flourished in the reign of the Roman emperor, Hadrian, taught from his own experiments

"That the nerves were not ligaments as they seemed to be to others, but conductors of sensation and motion, by means of a subtle animal spirit, passing through their tubes: that the arteries and left ventricle of the heart contained blood, not air, as was then believed and for a thousand years afterwards, until our great countryman, Harvey, reproduced proofs to the contrary, derived from Galen. Again, that the lungs got rid of the fuliginous part of the blood; that blood in the veins was darker than that in the arteries; that anastomosis took place between the extreme vessels; lastly, that the valves of the heart prevented regurgitation of blood, was distinctly asserted by him. When we see him proving, in spite of all cavil, that the voice did *not* proceed from the head as Zeno declared, but from the larynx; that arteries *do not* degenerate into nerves as Praxagoras affirmed; that the heart *is not* the seat of intelligence, as said to be by Chrysippus, but the brain; that the carotid arteries *do not* carry spirit to the brain as Erasistratus maintained, but blood; when we see bones and ligaments, joints and muscles, and viscera and senses described, reverentially admired, and understood, we are constrained to admit that he was really worthy of that glorious estimation in which he was held: a fame to which no one in our profession has since attained. For to the right methods of investigation which Galen introduced, *i. e.*, experiment as opposed to conjecture, medicine owes its establishment as a science, and its emancipation from false theories and absurd conceits. Grand steps are these which I have enumerated towards our present physiology; few of which appear to have been known to the Hindoos.—They knew, however, of the existence of the lacteals which he did not; nor we either, until 1615. They asserted that the chyle (globule) got its red colour in the spleen, which is, I think, probable.

"But so prodigious are the attainments of some men now-a-day, so intuitive their '*subjanta genius*,' that they exclaim against the folly of searching out medical opinions before the time of John Hunter! John Hunter was a great man, Astley Cooper, and John Abernethy too were eminent, but they might have learned from a greater still. Both these surgeons taught that a broken spine was incurable. So I believed; but tried to reduce one once, here, in Calcutta, and cured my patient. But when, elated with my success, I was about to publish this novel and wonderful case, I found Galen had been before me, had got it all in '*his book*.' I remember too a case (not mine,) of removing a piece of the sternum, and so exposing the heart, to relieve matter pressing upon it behind the bone. This was quoted as a daring feat of *modern* surgery. I found it done sixteen centuries ago; and *old* Galen rather glorifies himself thereupon.

"For one thousand years at least, wherever medicine was taught as a science, the works of Galen were appealed to as infallible. With a regard not less reverential than that of the Hindoos for their Vedas and Shastras, did the Christian world of Europe, and the Moslem world of Asia, look to him, as respects matters medical. He, and Avicenna his successful imitator, were the chief authorities upon medicine during that long, dark night, when monkish superstition overshadowed, and well-nigh extinguished in Europe, the light of science. The invention of printing in 1440, and the glorious Reformation, dispelled this Egyptian darkness. The mind of Europe awoke. But no such light broke upon India. Until the institution of this College, as regards the science of medicine, India had not advanced one step since invaded by Alexander. In Europe even, those powerful levers of modern medical science, chemistry and the microscope, have but lately burst open the hidden secrets of physical existence, and finally dispelled the elemental theory. 'How little progress had been made till a very recent period in the examination of the nature of bodies as opposed to their movement, may be well understood from this fact, that in the popular works on science which were in circulation in our own childhood, fire, air, earth, and water, were still represented as the four elements of the universe. To what point the inquiry into these subjects may be carried hereafter, it seems impossible to anticipate; the doctrine of atoms appears indeed to be bringing us to the very elements of physical existence; while the study of the phenomena of electricity, of magnetism, and, ABOVE ALL, OF WHAT IS CALLED ANIMAL MAGNETISM, seems to promise that in the course of years, or it may be of centuries, we may arrive at some glimpses of a yet higher mystery, the relations of physical and moral existence towards each other, and the principle of animal life.'*

"During these middle ages little was added of importance to medical science. India was perhaps in advance of Europe as respects practical medicine. Anatomy was not taught by dissections till, in 1315, Mondini di Luzzi publicly demonstrated at Bologna in Italy. The Arabs, more strictly fettered by their religious creed than the Hindoos, were prohibited absolutely from the practical study of anatomy; whatever they did know upon the subject they derived from the Greeks, and Galen was their chief authority. For many years after I became attached to this College, the students who formed the great majority of the Hindoostani class, being Mahomedans, it was supposed impossible to engage them in practical dissections. Many an earnest consultation have I had with Pundit Moodoosoden Guptoo upon this subject. He was sanguine of success as respects them, if in dissection they should be allowed the same opportunities with the English class. When the dissecting-rooms were placed by Government under my charge, the wish of my good friend was accomplished; and he did succeed, with one or two exceptions, in engaging the military students of the class in actual practical dissections. I had at that time, and have often had it since, the great satisfaction of recording publicly the efficient attainments

* *Divisions and Mutual Relations of Knowledge.* A Lecture, by T. Arnold, D.D., Rugby, 1839. p. 11.

of this class of students. Taught in the Oordoo language, their only manual of anatomy, the notes they had taken at the Pundit's lectures, the admirable perseverance of these young men overcame all difficulties under the kindly guidance of their preceptor. This College achieved another triumph, and Pundit Moodoosoden Guptoo gained another laurel, when for the first time, in India at all events, Mahomedans were seen in classes, engaged in dissections; studying anatomy in their own language."

Dr. Webb next says that practical medicine has been thought to have attained to greater eminence among the ancient Hindoos than the ruins of their knowledge of disease would lead us to suppose. Greeks and Arabs borrowed from their *materia medica;* and cures of epilepsy and leprosy are said to be effected at present by combinations of drugs of great antiquity.

"*But among the ruins of ancient Hindoo medicine, the practice of mesmerism may, I think, be mentioned as most curious.* By passes and breathings those itinerant priests of Esculapius, the '*Jhar phonknawallas*,' profess to cure, and do cure, rheumatism, palsy, epilepsy, just such as mesmerism is known to cure. Assiduously muttering their munters, they yet continue to make passes from head to foot; the body of the operator being kept steadily in contact or relation with his patient. To these, and these only, may be fairly attributed the cure. And so general is the practice, that there is hardly a village in India in which it does not exist.

"IN THE MESMERIC HOSPITAL, SO SUCCESSFULLY ESTABLISHED BY GOVERNMENT IN THIS CITY UNDER THE SUPERINTENDENCE OF DR. ESDAILE,—YOU HAVE ALL WITNESSED, OR YOU MIGHT HAVE DONE SO AT ANY TIME THESE LAST TWO YEARS,—THE POWER OF ANIMAL MAGNETISM TO RENDER THE HUMAN FRAME ABSOLUTELY INSENSIBLE TO PAIN DURING THE MOST FORMIDABLE OPERATIONS OF SURGERY. But what is of still more importance, you might have seen also the power of this subtle agent to cure different forms of paralysis. A Hindoo student was brought to me as acting professor of medicine by one of your fellow students, probably now present, from a place some twenty-five miles off. The patient could express himself by writing in Persian or in Bengali, but had been dumb for a year and a half; after coma and fever. The tongue was immoveably retracted. He was said to have consulted in vain the most eminent physicians in this city. I advised mesmerism, the liberality of Dr. Esdaile provided means, he was cured in his hospital by his native mesmerisers in about a fortnight; and can now speak as well as ever he did. This is not a solitary instance.

"The practicability, which has been daily demonstrated in the Mesmeric Hospital in this city, of performing the most dreadful operations of surgery without pain to the patient, must be regarded as the greatest medical triumph in our own days. I cannot now recall without astonishment at what I witnessed the extirpation of a can-

cerous eye, while the man looked at me unwinkingly, unflinchingly, with the other eye. Another man looked dreamingly on with half-closed eyes, the whole time of an operation, even whilst I examined the nature of the malignant tumor I had removed, and then having satisfied myself, concluded the operation. *The use of chloroform and other anæsthetic agents, which are universally adopted now, followed as necessarily upon the discovery of the anæsthetic power of animal magnetism,* as did the use of the ligature to suppress bleeding, upon the discovery of the circulation.* Now the surgeon being able to command the effusion of blood either by pressing upon the blood-vessels or by tying them, and by mesmerism or chloroform to render his operation painless, there seems but little left to desire in surgery but real anatomical skill."

What must be the astonishment of the English public on reflecting that, while such an honest and enlightened lecture has been delivered in Asia, and hundreds of painless operations performed under mesmerism, together with surprising cures, our English College of Physicians and all our medical journals have remained in wilful darkness, and been pouring forth the most ignorant and vulgar abuse, and mesmerism been scouted

* "This term is used by me, as more intelligible to the students than that of '*Animal odyle, or odylic influence,*' which has been substituted by Baron Von Reichenbach, (see Researches on Magnetism, part I. p. 164,) in a work which has done more to clear up the study of what I must once again call animal magnetism than any thing ever yet attempted. This '*odylic influence*' is quite as powerfully developed in a crystal as in a magnet. The human hand may be charged with it from a crystal or a magnet; but the hand charged will not attract iron filings, neither will the crystal: therefore, although *like* magnetism it is yet different. It is *luminous* in the dark, in the magnet, the crystal, and the *human hand:* and howsoever obtained, from digestion, chemical decomposition, the sun's rays, from heat, or from electricity, its lambent light is seen by *sensitive eyes*, and the power has upon them its peculiar effects. Many people in Calcutta, not sensitives, saw light as of fire, pass between the hand of Mr. Alin and the head of his subject, whom he was attracting. This I did not see, but heard from their own lips. *I have seen* in Dr. Esdaile's Hospital bodies charged 'odylically,' (I may not say magnetized) produce the same effect upon his '*sensitives,*' (Hindoo patients,) or even more striking effects than those recorded by the Baron, as seen at Vienna. A piece of paper no bigger than a wafer, charged odylically, and dropped upon the patient's hand, has rendered it insensible, and fixed it to the bed; a brick floor charged odylically has tied a man by the leg; a good stare at a plaster wall has charged *it* odylically, so that a man passing by and his head placed against it has been so forcibly attracted he could by no means get away; a gold watch-guard charged odylically has rendered rigid and insensible any limb upon which it was wound; even a glass of water charged in like manner has had like effects. Dr. Esdaile rarely walks abroad without a spare charge or two at the service of his friends. And some hundreds of the students were present, when at my request, and for demonstration at my anatomical lecture, he put on his spectacles and charged by a good stare a poor Cooly in the next room, till he was brought in insensible; and every important group of muscles demonstrated on the *living* body, in their proper action, one after another:—the theatre offering from top to bottom a sea of living wondering heads, for it had been noised abroad in the College that '*the dead man was living,*' and standing upright!"

from all our medical and chirurgical societies and hospitals, both as a preventive of pain and a remedy of disease!

An epidemic insanity has visited the medical division of society, and the rest now look on with wonder at its wildness. "Why do the nations so furiously rage together, and why do the people imagine a vain thing?" Truly the medical world is sinning against nature herself and laughing her to scorn. The amount of suffering which would have been prevented by opposite conduct in the medical world can never be atoned for, and will lie a heavy sin for ever at the door of the profession.

JOHN ELLIOTSON.

*** In our prefix from the *Institute*, the writer says; "To return to our correspondent, does he think that Dr. Elliotson quitted his position at University College on a question of mere professional etiquette? If so, we refer him to the *Lancet* of the period, and he will see reason to change his opinion." Our readers will find a portion of Dr. Elliotson's farewell letter to his class, in No. XVI., pp. 420–6:—

"Entreated on all sides to exhibit the phenomena, I requested of the Council permission to demonstrate them in one of the theatres of the College, when this was not in use. But I was refused. One of the Council, whose goodness and liberality render him an ornament to the Jewish nation and to England, moved the reconsideration of the refusal or made a motion for permission; but in vain. I hear that he entreated the Council to witness the phenomena and judge for themselves as *he* had done; but in vain. Yes, the majority of the Council, perfectly ignorant of the subject, refused to go to learn anything of it before they passed judgment upon it; and among these were legislators, barristers, and one physician. Yet this same Council gave permission for the exhibition of a calculating boy to the public, at so much a head, and tickets were purchased by any one, as for a concert.

"On December 27th, I received a resolution of Council, from the Hospital Committee,—

"'That they be instructed to take steps, forthwith, for the discharge of Elizabeth Okey from the Hospital.'

"I immediately shewed the paper to the apothecary, who said that he had known of the resolution several days before, as well as of another, which I had not yet received from the house committee, viz., that the practice of mesmerism should be immediately discontinued. I proceeded to the house of the treasurer of the College and Hospital, and he informed me that the second resolution had also been passed. I, therefore, at once wrote the following letter to the secretary of the Council.

"'Sir,—I have just received information, that the Council, *without any interview or communication with me*, has ordered my patient, Elizabeth Okey, to be instantly discharged, and forbidden me to cure my patients with mesmerism. I *only* am the proper person to judge when my patients are in a fit state to be discharged, and what treatment is proper for their cases.

"'As a gentleman in the first place, and as a physician in the next, I feel myself compelled at once to resign my office of Professor of the principles and practice of medicine, and of clinical medicine in the College, and of Physician to the Hospital; and hereby resign them all, and will *never enter either building again.*

"'When I was made Professor, I received a class of 90,—the class is now 197,—even 13 more than at Christmas last year: and, as there were 24 entries after Christmas then, the whole number of the present session would, no doubt, have been above 220.

"'I have not received my fees this session. It is my wish that they be all refunded to the young gentlemen, who are perfectly welcome to the lectures which I have already delivered.

"'I have the honour, &c.,

"'JOHN ELLIOTSON.

"'Conduit Street, 27th December, 1838.'"

"You will agree with me, gentlemen, that, to hold office one moment on such terms, and under men capable of acting in a manner at once insulting and irrational, would have been impossible. If I was unfit to determine when my patients were in a state to be discharged, and how they were to be treated, I ought to have been dismissed. But, while I held office, I was to be considered fit to judge of these points. Had my colleagues in the hospital possessed a becoming spirit, and felt what was due to themselves and the profession, they would have resisted this infringement of their general rights, whatever their opinion of mesmerism, even if they had attended to it sufficiently to justify an opinion. Indeed they were bound to act thus, since they had resolved months before in committee, that they acknowledged '*my undoubted right*' to practise mesmerism in the hospital. But this I could hardly expect, since they were so forgetful of academic propriety, that, in their lectures Dr. Thompson designated my patient Okey 'an impostor,' and Mr. Liston, the bosom friend of the editor of the *Lancet*, called mesmerism 'the most impudent of modern humbugs,' and indeed pronounced me to the students, in a public room of the hospital, to be 'a tom-fool.' The insult was the greater, as I was senior physician, was thought to have greatly raised the reputation and numbers of the school, and had been the main cause of the establishment of the hospital, although I gave great offence at the time to some of the Professors for honestly pointing out that the medical school was inefficient without an hospital. The conduct of the Council was irrational, since the majority refused to witness the experiments upon a subject of which they were utterly ignorant, and to have an interview with me for the purpose of enquiring into the business. They suspended a practice which was perfectly innocent, simple, and devoid of expense, and had worked and was working many most remarkable cures, even in cases which had resisted all other treatment and had been sent out of other hospitals as incurable,—all which they well knew. The College was thriving this winter as

much as last; my class was larger than ever it had been at this period of the season; and the hospital was crowded with patients and pupils. The Council, completely unknown in science or literature, as they all are, with two or three exceptions, proved themselves totally unfit to conduct a place of education, and more especially one which boasted to be founded on the most liberal principles and to be free from the prejudices of old Universities. They put a blot upon the Institution which will never be erased."

VIII. *Disappearance of a Uterine Polypus under Mesmerism.* By W. R. Mott, Surgeon, Devonshire Place, Brighton.

"Quackery.

"In the advertisement announcing our views and purposes, we have pledged ourselves to the opinion, that it is the duty and the policy of the profession to demand the suppression, or, at least, the control of quackery, at the hands of the legislature. In our second number, we offered some reasons for the adoption of this course; which, if we mistake not, are irrefragable. There may be, we fear, many members of the profession, and some among our readers, who are not convinced of the expediency of, or necessity for, new legal enactments of the character proposed. From various causes, but chiefly, we are inclined to think, from amiable feelings, they entertain a hope that the force of truth, the array of arguments, the production, and reiteration of facts, will alone be sufficient in the long run to effect the purpose of bringing men back to the dominion of truth and reason; that, at any rate, people will not risk their lives by relying on pretensions which have been *demonstrated* to be false and fraudulent.

"If there be one amongst us who entertains such an opinion, we would point to the present state of that *mean and contemptible delusion*—Mesmerism. *Refuted, exposed,* and only saved from utter annihilation by the tenacity with which one individual, and he, unfortunately, a medical man, clings to it; ever and anon it raises its head, as if it had received new life and vigour. The common artifice of all *charlatans*, from time immemorial, has been first to delude, and then to thrust forward, some noble lord, some reverend simpleton, or some person with a popular reputation, as a shield against attack, and as a decoy to attract the vulgar. Amongst our titled classes, in the offices of the church, and popular writers of fiction, are found individuals, and such indeed, abound at all times, whose talents, and education totally disqualify them from dealing with anything within the region of fact. Still they are held in great respect and esteem, and properly so, for many virtues, whilst they are not proof against the flattery which raises them into the class of philosophers, and they become themselves both dupes, and ringleaders of delusions.

"The public press, unfortunately without reflection on the mischief which ensues, greedily seizes, to fill up a vacant space, on any marvel, vouched for by names so respectable. The multitude read the stories as established facts; and where the evil works and brings forth the natural offspring of *falsehood, and error,* and where the limits of that evil lie, no human tongue can tell.

"So long as these *fooleries* are practised upon the lower animals, we cannot invoke the aid of the law to suppress them. But these stories have a further purpose; in the very number of *The Zoist*, from which they are derived, mesmerism is represented as an effectual remedy against almost all mortal diseases. The obvious purpose of these *fabulous* stories of animals, is to draw *human victims to the shrine of mesmerism*—to lead unwary sufferers to trust to this nonentity, instead of having recourse to the art of healing in the hands of those who understand it." . . .

"Let us, in a few words, show the value of these tales. Who is there that does not know how utterly wanting the education of the nobility, and the clergy generally, is in natural history, or philosophy? A smattering of classical learning, the myths of the Greek, and the Roman poets, a little lying history, and

the mere rudiments of mathematics, constitute generally the entire amount of their secular information. No class of men are less capable of furnishing any trustworthy testimony to natural phenomena. The reputation of the Duke of Marlborough is neither for shrewdness of observation, nor accuracy of judgment. A coronet may seem to place him in a position to impose opinions on mankind; but such sheer folly as the above must surely destroy any illusion of the kind. What is there in the story of these dogs belonging to mesmerism? What more than any dogs of spirit would do, when confronted by a gentleman using such foolish gesticulations, and who kept fairly out of their reach for 'forty-five minutes?'

"Next comes the Rev. T. Bartlett. In charity we will only say, that thirteen* years too often convert our dreams into apparent realities; and the reverend gentleman no doubt met with this adventure in his easy chair. Should this meet his eye, and find him unwilling to admit this inference, we invite him to exhibit his prowess on an infuriated bull in Smithfield, before competent witnesses. *That* would convert us to mesmerism.

"But what of Harriet Martineau and her cow? Miss Martineau is a lady who has earned a no mean reputation by composing works of fiction. Many of her tales are amusing enough; but she has, to a judicious observer, perhaps in every one of them, shewn an entire incompetency to deal with facts and figures. In one publication, written to bring down to ordinary capacities the wretched philosophy of the Benthamites, this lady deals with the ticklish question of population. Most innocently does she display her fancy by assuming that children are brought forth by litters in any number short of a dozen; and, in order philanthropically to lend her aid to save society from being destroyed by over-population, and mankind from the horrible necessity of feeding on each other, she strongly recommends the employment of what she designates *preventive checks*, to limit the number of children. A reviewer of the day very properly attributes this to the innocent ignorance of a young unmarried lady; and advises her, instead of studying Malthus and Godwin, ratios, progression, and such profound philosophy, to ask a few questions of her mamma.

"Miss Martineau seems to have grown no wiser with age. What is the meaning of her joke about a cow morbidly imaginative? No lady of *that* species, we believe, has ever been accused of writing poetry, or fictions for children. But what child does not know that cattle will often become frantic with terror at the sight of an unknown object, with a flaring colour, especially red? We need not, however, have recourse to a theory to account for *nothing*. That her cow recovered by the unaided and unimpeded efforts of nature, we do Miss M. the credit to believe, or the morning blood-letting may have done something. The whole story may not be a fiction; nay, it may be forgiven that a lady should imagine that the passes of her cow-herd are as efficient as those of her correspondent, the Fellow of the Royal College of Physicians; but that she should permit the publication of such trash, and by this use of her name assist in deluding, and inflicting perhaps irreparable injury, on some suffering and prostrate fellow-creature, is not alone to be guilty of a folly—it is to COMMIT A CRIME."—*Institute, Nov.* 9, 1850.

I WAS called, early in the morning of June 25, 1850, to visit Miss T., a lady about 48 years of age, but not appearing more than 35 or 40, rather *embonpoint* and healthy-looking.

She was suffering from ischuria, attended with severe spasm and pains, resembling those of labour, occurring every eight or ten minutes; the hypogastrium was much distended and the abdominal muscles particularly rigid. Without any further inquiry at the moment, I passed the catheter and drew off about two pints and a half of natural-coloured urine, and gave her immediate relief, spasm and pains ceasing in-

* The fact occurred in 1847! See p. 298.—*Zoist.*

stantly. The patient then informed me she had *polypus uteri,* which, upon examination, I found to be the case. The polypus protruded through the os uteri about three quarters of an inch, and was evidently of a fibrous texture. Upon asking what treatment she had been under, I found she had consulted several practitioners, both physicians and surgeons; and that in April last she had been to London and consulted Mr. F., an eminent surgeon, who told her the polypus was not sufficiently pedunculated for him to afford her any relief (I suppose he meant by operation), and that she must wait six or twelve months before anything could be done. She then begged her sister to consult Dr. Elliotson as to the propriety of her being mesmerised. Dr. E. recommended her to try it, and kindly referred her to me as she was about to reside in this locality.

I commenced on the 1st of July, at half-past ten o'clock, a.m., by longitudinal passes from the forehead to the feet, very slow, and continued for twenty-five minutes. On July 9th, after repeating this process daily, I succeeded in putting her to sleep for twenty-five minutes; and ever since she has continued to sleep exactly that time when subjected to the magnetic, or odylic power according to Reichenbach. This treatment was persisted in every day, except Sundays, until Nov. 16th instant: an odylized saline solution being given every morning in a state of effervescence as a gentle aperient, and it invariably acting as such. By the 1st October, the polypus had *receded completely* within the uterus, and on the 15th instant, after a careful exploration with the uterine probe, it was found to have totally disappeared.

Observations.—During the curative process, this patient had ischuria twice, at the catamenial periods, from pressure of the uterus on the neck of the bladder; and so great was this pressure that considerable difficulty was met in passing the catheter. At these times her sufferings were very acute. When she first came under my care she could scarcely walk twenty yards, and generally rode in a hand chair; but, after six weeks treatment, she could walk half a mile without inconvenience.

*** The proprietor of the medical journal from which the delicious motto to the present article is taken—its Mr. Dilke—is Mr. Martin, surgeon, at Reigate, Surrey, who is responsible for all that it contains. He says that he wishes to raise the respectability of general practitioners like himself still higher in the eyes of society by his journal than they are. The nobility and clergy, of Surrey especially, and Dr. Elliotson, will all feel his compliments, and acknowledge his talents, information, modesty, and good-breeding.—*Zoist.*

IX. *Cure of Chlorosis and Dropsy with alleged diseased Lung.* By Mr. H. J. Fradelle, 13, Seymour Place, New Road.

"The October number of *The Zoist* indicates the good effects which have attended our recent castigations of that mendacious journal. It now appears to be writhing, coiled upon itself, like a wounded snake in its last agonies. There are evidences of its impending dissolution in every article it contains; and, while its limbs are quivering in this enfeebled state, *it would be the height of inhumanity to reapply the knout.** This organ of fiction set out in a tone of triumph, trumpeting forth its spurious facts under the pretended banner of philosophy; while now and then it waxed eloquent under the inspiration of preaching up its own false doctrines, just as all unprincipled gamblers become the more desperate as the game appears the more losing. But now, feeble and outworn in its dying moments, it has scarcely strength to 'make a sign,' and only sputters out a little delirious abuse on Dr. Todd and others who are beyond its reach.

"The Rev. George Sandby, we presume, will pronounce its funeral oration, Dr. Elliotson provide the cash to erect its monument, and we ourselves will write its epitaph."—*Medical Times*, Oct. 12, 1850.

Having been requested by Mr. Barton, of No. 7, College Terrace, Kentish Town, to shew him some experiments in mesmerism, of the utility of which as a curative agent he was scarcely aware, I offered to try its effect at his house on any friend of his out of health, on whose veracity he could depend, as more likely to convince him of its truth than any thing he witnessed at mine. He was anxious to witness phenomena of a different class to those of cure. I promised none; but relief from pain, should I even not be able to produce mesmeric coma.

I was introduced, May 7th, to Miss Sarah Ann Orton, 20 years of age, whose case Mr. B. had briefly mentioned to me as one pronounced dropsy and diseased lung, and I presently commenced mesmerising. Coma and sleep-waking were induced in thirteen minutes. Her breathing became affected when the passes were directed down the chest: I discontinued these and made a few transverse ones. To the question, "Are you asleep—comfortable?" the reply was, "Yes." She was easily awakened, after having slept more than an hour: was unconscious of having spoken.

Mr. B. was now convinced: but, as he was desirous of seeing more, I went to his house again a few days after, and, finding on this occasion Miss O. still more susceptible to the influence, for the coma was produced in about three minutes, I, from taking an interest in Mr. B, took an interest in the case itself, and offered my services on her behalf. These were accepted. I mesmerised her till August 9th, three times a week on an average.

I next inquired of Miss O., on whose authority this statement was made that she had water on the chest and a diseased lung? if she had had medical advice, and if so,

* Pray never spare us, *honest* man! See pp. 31, 313.—*Zoist*.

whose? Her reply was the following, made in the presence of Mr. Barton, who was present at every sitting. That she had been three months, last year, under the medical treatment of Dr. Allen, of Islington: that he had not told her of the nature of her complaints, but mentioned it as being water on the chest and diseased lung to a female friend who accompanied her, and from whom she heard it. Dr. A. in applying the stethoscope to the left lung had not said anything, but merely *shaken his head.* She was then in a state of great debility, as she had continued ever since. The powerful tonics he prescribed proved of not the slightest benefit. In truth, it must be allowed that Miss O. scarcely did justice to his treatment, as she has since told me she did not take the whole of the medicine he prescribed. He bestowed the best attention upon her most kindly and disinterestedly. Not finding any relief at the end of three months, she proposed going into the country: and he assented, requesting her to let him see her again on her return. She went in winter, and returned in May, in no way better; and, thinking her case hopeless, did not see him again. She felt a dull, heavy weight in the chest, a dragging forward. Her legs used to swell to a considerable size, especially after a walk, which, if extended to a mile, or even less, would sometimes prevent her from taking her stockings off: she has been compelled to *cut them off.* Her legs became purplish. She had little appetite, and was of a tallowy white. Her nights were bad. In the day she had constant pain in the left side, at the lower part of the lung. Any exertion, such as going up stairs, brought on palpitation of the heart. Besides this, Mr. B. informed me that her catamenial periods were exceedingly irregular; three months had elapsed since the last appearance. I enquired of her, while in sleep-waking, if the liver were in a proper condition. She replied it was not, and pointed to the spots.

In this deplorable state of things, as I did not consider the sleep of itself sufficient to cure, I determined to operate separately on the diseased organs. It occurred to me that the water in the chest might be carried off by micturition. As I had observed signs of clairvoyance, I ventured to direct her attention to what was passing in my mind, and if I were right in my conjecture. After a few moments' consideration she replied, "Yes." She smiled during the process as though conscious that benefit had commenced. Then I attended to the lung, which she described as being ulcerated at the lower part. At first she was alarmed at the state she saw herself in, but I requested her to be—and by degrees she became—composed, relief being at hand. First, I drew from it; then

made slow, contact passes, and breathed on the affected part. When awakened, she said she felt better, as if, pointing to her chest, something (meaning the complaint) had been touched: and touched it certainly had been, for I was informed by Mr. B., the next time I went, that the intended object had been fully realized. Plentiful micturition had immediately after ensued.* I learnt besides that the renal secretion had been at all times sparing. The protracted term had also been brought on by the first mesmerisation. The case progressed steadily and favourably. By the 26th I could produce the sleep in one minute. She foretold when the dropsy would be cured, and that it would never return. A fortnight later it was completely gone. From the third time she was mesmerised her legs did not swell again. Water appeared to form, as it continued to pass in quantity and freely up to this time; but it did not collect in the chest, for her dresses required to be taken in three or four inches across. In sleep-waking she declared that mesmerism had saved her life: was insensible to pinching: and had community of sensation.

Miss O. had laboured under dropsy more than a twelvemonth; to pain in the side for three years. I proceeded with the lung without varying the mode, till, meeting with Mr. Mayhew's cure of a similar case, I added mesmerised flannel with marked success. New flannel I considered the best: mesmerised it for five minutes with the intention of communicating vital heat to the affected part, and of keeping up the action during my absence. The same piece of flannel was not employed a second time. The patient told me it would retain its power four days. She could not in general bear flannel in contact with her; when mesmerised it did not irritate the skin, but diffused warmth through the affected side, which, while I was mesmerising the flannel, was drawn towards it.

One sultry summer's night she had thought proper to dispense with it; yet in natural somnambulism, to which she had always been subject, she got up, fixed the flannel exactly right, and concealed under some heavy trunks the bag which had contained it and which she could not find next morning till after a two hours' search. The first discovery was that of the flannel. This treatment was regularly continued till July 17th, when on the proposal of mesmerising another piece, she declared she did not require any more; that the ulcers, which

* We beg our readers to peruse Mr. Tubbs's cure of dropsy, No. XXX., pp. 196-7, in which mesmerism had the same effect. See the same in Mr. D. Hands's case, No. XV., p. 365.—*Zoist.*

on the 13th appeared mere dots, were completely healed; that the side, comprising the heart, would require strengthening. This has been done.

The pain in the side has since entirely left her. She can go up stairs rapidly without palpitation of the heart: and can walk seven and even eight miles without distress. Her countenance improved. Her friends tell me her appetite is threefold what it was, and find fault that she sleeps too long. One point difficult to overcome had been occasional extreme depression of spirits. Frequent dreams of ghosts, &c., would inspire her with dread. Hope could not be sufficiently excited. There was a morbid action of the brain somewhere, yet where I could not tell. But the patient did in sleep-waking; and, pointing to the left side, described the space affected, including Wonder and a portion of Melody, Mirth, and Causality; this latter making, as then observed by her, "things unreasonable appear reasonable. Time caused her to dream of church music, and Wonder created phantoms; ghosts came there." I mesmerised earnestly to withdraw excitement, and then to restore healthy function. I was fortunate enough to overcome this; but not at once. When she told me that side was well, I desired her to retain this impression in the waking state: for Miss O. was strongly impressed with the notion there was something wrong, without being able to say what or where. The impression was retained.

I have repeatedly mesmerised to impart strength to the whole system, by holding the hands and willing the influence to pass up the arms, and down the trunk, avoiding the head, to the feet: that which ascends the left arm passes to the left leg and foot, and *vice versâ*. I have also ascertained in this case that the influence can be directed to any part and accumulated at will. Having gradually gained strength, Miss O. considered herself *well*.

What I here subjoin is in no way related to her former complaints. Having on the 21st of July been on an excursion on the water with a party of friends, and walked besides a considerable distance, she increased a cold taken the day before by exposure with too slight covering to night air on the water. The next day she was completely laid up. Not informed of it, I did not call till the 25th. Her head wrapped in flannel, her face extensively swelled, she suffering from a gathering under the left eye, from tooth-ache and ear-ache, the inflammatory action had reached the throat and was spreading over the upper part of the chest. To complete her misery, two pills, given to her without advice, had been so violent in their effects that all she took passed immediately.

No time was to be lost. On this occasion a few seconds were sufficient to produce the sleep. I then set about removing the effects of the cold she had taken, relieved the pains in the head and face, and reduced the inflammatory action which was spreading. I mesmerised water for a fever draught. The patient could taste it while I was preparing it, and imitated the action of swallowing while I took some, as she had said this would do equally well, if not better. Placing the hands with intention to strengthen the viscera restrained their action and overcame their irritability. Then I mesmerised an hour later in bed to produce gentle perspiration. This came on as I intended, and assisted to remove a portion of the obstructions. On the following and next evening to that I repeated the above with the exception that I mesmerised water for an aperient, and also to assist in carrying off phlegm which was collecting. The patient in sleep-waking chose senna. Mesmerised for strength.

By August 2nd Miss O. had recovered; went on a visit for a few days, and returned on the 9th, when I mesmerised her for the last time. Has continued well since.*

X. *Cure of intense Palpitation, obstinate Vomiting, chronic Headache, and Rheumatism, with Mesmerism.* By Mr. Hazard, 4, Dowry Parade, Hotwells, Clifton.

"We shall not, therefore, allow this heresy [mesmerism] still to be propagated under the pretext of its having any pretension even to the name of a science. *Judex damnatur cum nocens absolvitur;* we shall bruise the head of the serpent, and leave it to trail its wounded length, hissing but harmless, along its tortuous paths for the remainder of its days."—*Medical Times, Aug.* 31, 1850.†

I. *Cure of Rheumatism in both Arms.*

April 5, 1850. — Simmonds, a sailor, belonging to one of the Bristol Steam Packets, had been suffering a length of time from rheumatism. So much had it increased previously to his visiting me, that he was obliged to give up his situation, not having the power to raise his arms. I mesmerised him locally for 20 minutes, three times a week for one month, when he resumed his situation perfectly cured. He has not had a return of the complaint from that period to the middle of November, when I last saw him.

* See similar cures by Mr. Parker, p. 186; and Mr. Tubbs, No. VI., p. 258.—*Zoist.*

† Heighday! When we appeared again in October, in full vigour, he was too humane to—not allow us,—to bruise our head,—to make us hiss wounded and harmless for the rest of our days; (see p. 378) and so here we are again, wishing him a happy new year.—*Zoist.*

II. *Cure of continued Vomiting.*

May, 1850. Miss T. C., a young lady, was taken with continued vomiting from a severe cold, and could not retain anything on her stomach. A medical man was sent for, who employed various means to allay it, without effect, for several days. She had no sleep, and was much exhausted.

I was sent for one evening, and found her very weak. I mesmerised her by making passes from the head to the stomach for an hour, and left her in a very composed state. Her mother told me the following morning that she had slept well the whole of the night and the sickness was entirely gone. She soon gained strength, and in a short time her usual good health.

III. *Cure of Rheumatic Headaches.*

May 14th. Charlotte James, aged 39, had been afflicted many years with rheumatic headaches and stiffness of the neck. Her eyes were but half open from the continued pain she suffered, which also occasioned a fixed melancholy in her features. She was under my care for two months: I mesmerised her three times a week. From the first week she felt relief, and from July to the present time has had the headache but twice. It is now more than two months since she had it last. The stiffness of the neck is entirely gone, and her face is resuming a happy expression. She had been medically attended without any permanent benefit, although she had had her head shaved, been blistered, bled, and cupped.

Dec. 10th. She is now perfectly well.

IV. *Cure of intense Palpitation.*

"To Mr. W. Hazard.

"Dear Sir,—Is it still necessary to give publicity to cures effected by mesmeric treatment in order to testify its truth? Assuredly not; for the benefits daily afforded to thousands of the suffering sons and daughters of humanity by its soothing and benign influence fully demonstrate its truth, and afford proof, too real and positive to be questioned, of its importance and efficacy as a curative agent. Yet it is much to be lamented that there are hundreds, many of whom are medical men, who, although thoroughly convinced of the power of mesmerism, and who are not, cannot be, blind to the fact, that its success is surely and steadily placing it on the high pedestal of public confidence and esteem, are too timid, too cowardly to venture *just yet* on an honest open avowal of their opinion. It becomes therefore, in my opinion, the duty and privilege of those who,—having tested, dare to assert its truth,—to diffuse as widely as possible the knowledge they possess for the benefit of others.

This being my conviction, I herewith enclose you a plain, simple statement of facts in reference to my case, which, should you think worth a place in *The Zoist*, or even to be sent to the editor of this valuable work, you have my full permission so to do.

"I am, Sir, very truly yours,

"Hotwells, Nov. 1850." "Ellen E."

"Not many weeks ago I was suffering from an attack of influenza. After trying the remedies usual in such cases without effect, I sent for the medical man who had attended me several times previously. He continued to visit me for four or five days, during which time I continued feverish and weak. I could not sleep, in fact, scarcely lie down in bed, in consequence of violent palpitations of the heart, and a sort of convulsive or spasmodic action which almost lifted me from off the bed. The slightest unusual noise, even the loud opening or shutting of a door, increased the palpitations to such an alarming extent that I almost gasped for breath. On the Sunday evening, being almost worn out from want of rest, and having read and heard a great deal about mesmerism, the thought struck me that I would try if it would have any good effect in my case; and, a friend coming in at the time, I requested her to send some one for Mr. Hazard, he being the only mesmerist I knew who resided near. Mr. H. was accordingly sent for, and promptly obeyed the summons. He began mesmerising me by making passes from the head to the feet with both hands for some time; then laid his hands over the heart, let them remain there some few seconds, and gradually drew them from me to each side; altering these passes, he rested his open hands, one on the top of my head, the other over my heart, for some minutes, looking me steadily in the face all the time. This he continued I should think for half an hour. He left me more calm and feeling disposed to sleep; and I slept very tranquilly for some hours, and the next morning the palpitations were comparatively slight, and my breathing more free than it had been for some days. I was not mesmerised on Monday evening, in consequence of Mr. H. being too much engaged with patients to visit me. I passed a restless night, sleeping only a few minutes at a time. On the Tuesday evening Mr. H. called, and succeeded in putting me into a sound sleep, from which I awoke at seven o'clock the following morning, free from any unpleasant symptoms.

"Ellen E."

XI. *Obstinate Uterine Hæmorrhage instantly arrested—Clairvoyance: Inflammation of a Leg, at once greatly relieved: and a case of Inflamed Knee-joint treated with Mesmerism.* By Mr. W. J. Tubbs, Surgeon, Upwell Isle, Cambridgeshire. Together with some account of a recent Lecture, by Mr. Tubbs. Communicated by Dr. Elliotson.

"The mesmeric cases reported by Mr. Capern, Mr. Mott, Mr. Parker, and Mr, Tubbs, (gentlemen whose euphonious names are at present, professionally, "to fortune and to fame unknown,") may be summarily dismissed. They remind us only of the significant couplet in the poem of Dr. Syntax, where the bookseller, shaking his head at the manuscript of the poor traveller, reminds him—

" 'We can get tours—don't make wry faces—
From those who never saw the places.'

Which may be thus travestied:—

" 'We can get *facts*—don't make wry faces—
From those who never saw the *cases!*' "

Medical Times, Aug. 31, 1850.

I. *Obstinate Hæmorrhage.*

Mary Dawson, Upwell, aged 36, had been attended by me for five days. Hæmorrhage had so weakened her that her life was hanging on a thread; and, as the discharge still continued in spite of all the astringents given, as well as the local application, of cold friction, &c. I resolved to try what effect mesmerism would have as a last resource. The very day that I began, November 22nd, the clergyman had been praying to her. Shortly after he left, I called, and her countenance was exsanguious; her pupils *frightfully dilated;* there was a sensation in the head as if a machine was at work in it, and a hammer beating the skull bones; the fingers and toes were tied up with red tape, &c. All she could uttter was, "I must die." I said, do let me try and mesmerise you, it may do good, but I cannot promise you it will. All I could hear her say was "yes." I took my seat on the side of the bed, holding each hand and looking at her eyes. In less than two moments the *pupils contracted,* the eyes turned up, and nothing was observed but the lower parts of the sclerotics, and the eyes remained half closed. I dropt her hands and closed them; and, on raising her arm, it fell; in truth she was gone into the state of coma. I mesmerised her for half an hour, and left strict orders that she should not be disturbed. However, in the course of an hour, the Welney curate called, on his way home, (at the request of the clergyman who had prayed to her in the morning) and, on his entering the chamber, she seemed half roused, and instantly said, "I know you, I saw you go past this very morning in a pony gig: it was at such an hour: you are the Welney parson." The

women present said to Mrs. Dawson, "you are wrong it is Mr. Dealtry," meaning the Outwell parson. "No," said the Welney gentleman, "she is right: I did go by this morning at the time." Now this patient had been confined to her bed, and it was utterly impossible that she could have seen any one pass her window. On calling the next day, I found her better in every respect. Under chicken broth, beef tea, milk, and mesmerism, I am happy to say she is daily improving: her sister from Little Port sends her to sleep twice a day. I was at her house yesterday, Dec. 6th, 1850, and have every reason to hope that she will get perfectly well in the course of a short time.

Mrs. Emmerson and Mrs. Barns were present when I mesmerised her the first time.

N.B. "'Tis strange, 'tis passing strange, 'tis pitiful, 'twas wondrous pitiful," that his Reverence did not offer his prayers for a poor dying woman after he had heard she had been mesmerised: but, when told so, he said, "pooh, pooh, silly nonsense."

II. *An Inflamed Leg greatly relieved by Local Mesmerism.*

One evening in November, while conversing with Mr. Everett, a gentleman who called to consult me mesmerically, when on his way from Malvern to Norwich (where he resides.) I was hastily summoned into the village to see Mrs. Andrews, who was in great pain from an inflammation in her left leg. It was tense, red, and painful; she was sitting in a chair with her foot on a stool, and immediately that she saw me, she said, "Oh doctor, what am I to do? my leg must burst, and I am fit to go crazy." Of all things in the world she had been putting tar ointment on the inflamed sores. I said, let me see if I can ease your leg of the pain by mesmerising it. Her reply was, "O yes, try it and welcome." I held my hands for a short time over the knee, and then made downward passes slowly, and as near the skin as I could without touching it. The heat I instantly felt running up my right arm, and but slightly that of the left; in less than ten minutes I had perfectly removed all heat from the leg; the redness at once disappeared, and the patient said, "I am quite easy." I told her to let the servant mesmerise the leg half an hour, and to take a draught I should send at bedtime if required. The next morning, I called with Mr. Everett, and Mrs. Andrews met us at the door, saying, "she had been quite free from pain, and I might have the draught again." She told Mr. Everett how she felt the heat go from her leg.

III. *A violently Inflamed Knee, treated with Mesmerism.*

Thomas Maywood, aged 10 years, living in Upwell, was brought to my Infirmary by his father, at the recommendation of Dr. Burt, to be mesmerised. He was a pretty curly-headed lad of the strumous and sanguineous temperament, had had a hollow cough for some months; one knee was puffy, and, upon examination, I found an enlarged bursa which was chronically inflamed. He was first mesmerised on the 2nd June, 1850, and after a few days went into the sleep-waking state. His amendment was gradual, and he was discharged on the 10th July *well.*

I was requested to see him a few days afterwards, as he had received a severe kick on the knee from one of his playmates. I found him in bed, with all the symptoms of inflammation of the interior of the whole joint; and his sufferings were intense, as suppuration was actively going on. I mesmerised him generally and at the knee, and could then roughly handle his knee while he was in the sleep. One of my assistants then mesmerised him daily. I found it necessary in a few days to open an abscess which occupied the outer side of the knee, and I did so in his father's presence, leaving the instrument in the abscess while I asked him how he felt. His reply was, "very well." He kept his bed about a month, was mesmerised twice daily, and his knee dressed with warm water and oiled silk. He was then enabled to walk up to my Infirmary to be mesmerised, and was discharged in September; his cough having left him, his knee being quite well, and his health altogether improved. On the 27th November, he was present with my other mesmeric patients, at a lecture I delivered before the members of the Wisbech Scientific Institution.

*** We are not in the habit of publishing mesmeric lectures, but, when a medical man has the courage and honesty to deliver one, and that medical man boldly advocated and practised mesmerism in the earliest days of *The Zoist* and became a real martyr, and, being a widower and a father, was compelled to relinquish the subject on account of the great diminution of his general practice and was persecuted by many of his medical brothers in his neighbourhood, we feel it a duty and pleasure to make an extract from the *Wisbech Advertiser* of Dec. 6.

"On Wednesday evening the 27th ult., Mr. W. J. Tubbs, of Upwell, delivered a lecture on the above subject, in the Lecture Hall, Crescent Passage, to the members of the Scientific Institution. The

lecturer stated that, being a lover of science in the aggregate, he had for several years past made choice of the study of mesmerism, which was his favourite science, and having adopted it he was anxious, to the extent of his ability, to communicate to his audience and to others who felt interested in scientific matters his views upon the subject. The science derived its name from a German philosopher, Anthony Mesmer, who was born in 1734, at Mesburg, on the shores of the lake of Constance, and died in his native place in 1815, at the advanced age of 81. He published a thesis on taking his degree at Vienna, upon the influence of the planets on the human body. The professor of astronomy at Vienna believed in the efficacy of the loadstone as a remedy in human diseases, and invented a peculiar form of magnetized steel plates. Mesmer, being an intimate friend of the professor, employed them in his own way; and effected many cures, which he communicated to the professor, who published them and attributed the cures to the form of the plates. This offended Mesmer, who had discovered the peculiar mode of using them to insure success, which was by manipulations, now called 'passes.' He left Vienna and arrived in Paris in 1778, and from his success there was called the great magnetizer. The French government then took up the matter and offered him a large annual income if he would make known his secret: but this he refused to do. He then returned to his native place, and in his last illness sought relief from his own discoveries. After passing through the French ordeal, a Frenchman named Dupotet came over to England and was introduced at the Middlesex Hospital. Dupotet practised the science with great success in the metropolis; at length came its great English champion, Dr. Elliotson, who, despising the threats of those whom the world calls great, the ridicule of the weak, and the frowns of his social friends, openly and boldly took his stand as the unflinching advocate of mesmerism. When he (the lecturer) viewed Dr. Elliotson suffering the persecution of old associates, deprived of his medical honours, cast from the society of almost all his medical attachments, and all for the best intentions towards his fellow men, language failed him to speak his praise; and, if he had the power to do so it would be—

> " 'To gild refined gold, to paint the lily,
> And add a perfume to the violet.' "

His (Mr. Tubb's) convictions arose from witnessing Field's experiments in this town in 1843. He went to laugh, and came away a convert. He soon investigated the subject, and his labours were not in vain. The first four persons he tried were susceptible of the mesmeric influence; upon two of them extraordinary effects were produced. These cases were so full of interest that he would read them from a publication called *The Zoist*. After reading the cases, Mr. Tubbs proceeded to enumerate a multitude of others in which successful operations had been performed by him under the influence of mesmerism, and then introduced several of his patients who had been cured of various disorders under its influence. The first, Henry

Ayliff, of Nordelph, apparently about 50, stated that he had been cured of rheumatism by means of mesmerism. After making this statement, he was invited by Mr. Tubbs to take a chair on the platform, and after a few "passes," mesmeric sleep was induced and the individual was evidently insensible to pain and external impressions. The next, Susan James, a young woman, who had been a sufferer from wry neck and been cured by the same means, was also 'passed' to sleep; and two little boys of the age of 12 were similarly treated. Harriet Bell was put into the mesmeric sleep, and in that state was made to exhibit powers of imitation, which excited the admiration of the audience. A verse of 'The Wishing Gate' was sung by Master Groom, in which the female mesmerised followed every word and tone with great precision. This was more fully exemplified subsequently in her exact imitation of 'Molly Bawn,' Master Groom taking the lead. A gentleman present (Mr. Stavely) put this faculty more strongly to the test by reciting a passage in French which was 'echoed' to his entire satisfaction. Another very interesting case was that of Frances Payne, aged 20, who stated that ten years ago she was an inmate of Bury Hospital on account of a diseased arm. She had there been strapped down to a table for the purpose of having her right arm amputated, but in consequence of a difference of opinion among the surgeons the operation was deferred, and she returned to her home and came under Mr. Tubb's mesmeric treatment, which was, happily, successful, as she is now in the service of Mr. Gregory, of Nordelph, and has the use of her arm perfectly restored to her. In several of the patients rigidity of the muscles was produced and the most complete mastery was exhibited by Mr. Tubbs in his treatment of his subjects. The last person operated upon was a young man, whose phrenological organs, being excited, developed manifestations strictly in accordance with the phrenological system. In all the cases the patients retained the powers of hearing and speech, and while in the mesmeric sleep replied to questions put to them by Mr. Tubbs, which was accounted for on the principle that only a portion of the brain was in a dormant state. In conclusion, the lecturer said he had endeavoured to show some of the happy effects of mesmerism. He had been able by its influence to relieve much pain and had effected some cures in cases where medicine had failed. Those individuals present who had received mesmerism as a fact would need no further proofs: those to whom it was new, would, he trusted, examine well for themselves before they ventured to condemn it: and, if there were any present, although he felt convinced there were none, who were disposed to call it by the title 'humbug,' he trusted they would be manly enough to state their objections in a philosophic manner. He thought there was not one amongst the persons present who would assume to himself the knowledge of all the phenomena of the human intellect, or who would say that it was capable of no further advancement, and that every dormant faculty had been brought into action. He hoped that his efforts that evening would be received with that goodwill which he entertained towards them, and he assured them that he would be ready at any time to afford them any further informa-

tion which they might require. At the conclusion of the lecture, Mr. Bays, who was chairman on the occasion, proposed a vote of thanks to Mr. Tubbs for the very interesting lecture which had been presented to them. The attendance was good, particularly as there was a less scientific exhibition at the Exchange Hall, under high patronage, and the audience displayed great interest in the proceedings. There were several scientific gentlemen present, who all appeared thoroughly satisfied that everything was perfectly fair and straightforward on the part of Mr. Tubbs and his patients, without any attempt at concealment, or any display of effects merely to excite the wonder of the audience."

With Mr. Tubbs's cases Dr. Elliotson has forwarded the following extract from a letter of Mr. Tubbs to him; and a letter from Mr. Everett to Mr. Tubbs.

"To Dr. Elliotson.

"— Either the public must have progressed in their views of mesmerism since my lecture at Chatteris, or I must have become more convincing and persuasive myself; for I am surprised, when I think of the universal approval I meet with at Wisbech, no opponent having dared to make the least stricture upon my efforts. I hope that for your own sake and that of mesmerism you will be long spared amongst us, and in the full possession of health and spirits.

"Believe me, sincerely yours,

W. J. Tubbs.

"N.B. Thomas Wainwright whose cure of enlarged liver and dropsy is reported in No. XXX., p. 196, is quite well, and is a very curious little clairvoyant subject. Dr. Whitsed called for me to visit a patient with him, during Mr. Everett's stay here, and saw the boy's power of clairvoyance, and expressed himself satisfied.*

"Upwell Isle, Dec. 7, 1850."

"To W. J. Tubbs, Esq.

"Dear Sir,—I was glad Dr. Whitsed called as he did, and had the opportunity of witnessing the powers of your little clairvoyant boy Wainwright, the strikingly correct way the boy described the various engravings as well as cards, &c., &c., that were indiscriminately placed before him, must I think have been sufficient to have set him thinking upon a subject which the medical profession above all others are bound dispassionately to investigate. Had I entertained any doubts as to the beneficial effects of mesmerism in alleviating pain, they must have been dispelled after hearing the account Mrs. Andrews gave me of her sufferings from an inflamed leg, which she described as having been perfectly free from pain from the time you mesmerised her the evening before.

"Wishing you every success, I am, yours truly,

"Norwich, Nov. 20, 1850." R. Everett.

* Dr. Whitsed has since eaten his words. We expected nothing less of the old gentleman. See No. VI., p. 254; XXX., p. 195. He is not worth a moment's attention from so intelligent and straightforward a man as Mr. Tubbs.—*Zoist.*

The excitement of the faculty of imitation in Harriet Bell (p. 389) was still more strikingly shewn afterwards. For—

"On December 10th, at the termination of Mr. Hay's Concert, Harriet Bell was introduced, for the first time, to Louisa Foote Hay, by Mr. Tubbs, and having been by him thrown into the mesmeric state, at once, and without the slightest preparation, sang songs of exceeding difficulty, presenting most extraordinary and incredible effects. Harriet Bell's imitations being of the most perfect character, some gentlemen, who witnessed this, being anxious for a public display, arrangements were made to give a Concert on the 11th. Mr. Tubbs kindly consented to attend and exhibit the wonderful effects of mesmerism on the organ of imitation. Louisa Foote Hay was to introduce impromptu snatches of ballads in various styles, so as fully to test Harriet Bell's extraordinary power. No communication was to be allowed with Harriet Bell previously to her appearing before the audience."

On the 11th the Concert took place, and Harriet Bell in her sleep-waking state sang some difficult songs with Miss Hay delightfully, to an audience of about seven hundred.

XII. *A Case of Clairvoyance.* By Mr. Hayman, Market Place, Sidmouth. Communicated by Mr. Janson.

"A great deal of talent is lost to the world for the want of a little courage. Every day sends to their graves a number of obscure men who have only remained obscure because their timidity has prevented them from making a first effort; and who, if they could only have been induced to begin, would in all probability have gone great lengths in the career of fame. The fact is, that in order to do any thing in this world worth doing, we must not stand shivering on the bank, and thinking of the cold and the danger, but jump in and scramble through as well as we can. It will not do to be perpetually calculating risks, and adjusting nice chances: it did all very well before the Flood, when a man could consult his friends upon an intended publication for a hundred and fifty years, and then live to see its success for six or seven centuries afterwards; but at present a man waits, and doubts, and hesitates, and consults his brother, and his uncle, and his first cousins, and his particular friends, till one fine day he finds that he is sixty-five years of age,—that he has lost so much time in consulting first cousins and particular friends, that he has no more time left to follow their advice."—The Rev. Sydney Smith, *Elementary Sketches of Moral Philosophy*, &c.

About the beginning of September, 1848, Elizabeth Baker, of Otterton, Devon, a married woman, aged about 27 years, was in sleep-waking, and I asked her if she could see. She replied, "Yes, but not very clearly yet: but in five minutes I shall be able to see across the seas to Australia, India, or in any part of the world." When the time was up, I asked her if she could see now. "Yes," she replied, "very clear." I then said that I wanted her to find out a young man in India, a nephew of mine. She said, "I will try." After two minutes she replied, "I don't like to look there, as there has been a dreadful battle." She felt very hot and was much

affected at what she saw. She did not like to stay there, as she had such a dislike to see battles. I told her that I did not wish her to look at the battle if it made her ill: but I only wished her to see if the young man was living or not. She replied, "I will see:" and, after a pause of about two minutes, she said, "Oh! he is living." But, to make sure, I requested her to describe his person and features, and she did most accurately. I was then convinced she saw him: and said, "are you sure you see him?" "Quite sure," was her reply. She said, he was a soldier, but had *not* been in the battle, as he was ill: she saw him standing behind with a large military cloak over him: he was very thin and pale: he had been very ill, but was getting better. She said that his friends all thought he was killed. I asked her where his father lived. "In Bath," she said; "that he was in great trouble about him, as he never expected to hear from him any more." I asked her if he had written or was about to write to his friends. She said, that "his father would not hear from him for some time to come, but he would write when he was better, and when they were removed from that part of India." She then felt fatigued with her long journey, and fell into a deep sleep. After ten minutes, I awoke her, and questioned her about India, &c., &c. She knew nothing about India, nor had she heard of any battle having been fought there. About three weeks after, I put her into the sleep-waking state again. My wife was present. After she had been in the state for ten minutes, I asked her if she could see; "Yes," was her reply: "I see the young man again in India, and Mrs. Hayman is thinking about him now." My wife asked her how he was looking. "Oh, better; he is getting better: he has more colour in his face: he is gaining flesh." "Has he not written yet?" "No," she said; "he will get over this illness, and his father will hear from him."

About a fortnight after when I put her into the state again, she saw him again. He was then standing by the side of a horse with his cloak over him: he was better. She said he would write to his father soon. I put her after a time into the state again. She saw him; he was looking much better, and he had written to his father. She said that his father had given him up: and many other things were told of him by her.

I wrote to Mr. P., of Bath, giving him a statement of what I had heard E. Baker give of his son George in India, and that I had every reason to believe he was living, and would not give him up. Mr. P. did not know what to think about it: but I am happy to state that his father has received

two letters from his son George, confirming every particular of what my patient had stated concerning him, which letters I have seen. He said he had been very ill, laid up in the hospital; was now much better: had not been in the late engagement. I could give you the names of the parties and of the regiment he is in, if you wish it; but, he being a family connexion, I think proper to suppress it.

I can vouch for the correctness of the above statement: I had several witnesses at the time, who heard what passed.

STEPHEN HAYMAN.

To H. U. Janson, Esq.

*** We have seen a letter from Mr. Janson in which, speaking of this account, he says, "You may depend on its truthfulness, for Mr. Hayman is a *downright honest fellow*, quite as much so as Capern; and in fact something like him." —*Zoist*.

XIII. *Cure of obstinate Hysteria; painless Tooth Extraction; ready cure of Loss of Voice.* By Mr. THOMAS CHANDLER, Surgeon, Rotherhithe.

"How many *were* deluded by the Hohenlohe quackery—by Morrison's pills—by MESMERISM—by magnetic rings—by brandy and salt."—Mr. WAKLEY, *Lancet*, Oct. 12, 1850.

TO THE EDITOR OF THE ZOIST.

SIR,—The following extracts from my note-book are at your service if you think them worthy of record.

Obstinate Hysteria.

Miss M. B., æt. 16, fair complexion, lymphatic temperament, applied to me in April, 1849. She had suffered from violent hysterical fits for about *two years:* she has them *two or three times a week*, sometimes two in a day: struggles very much, and bites her hands during the fit. Has frequent attacks of globus hystericus, and suffers from severe pains in the head and back. Catamenia regular, and health otherwise tolerably good.

April 9th. I commenced mesmerising her. She went off in two minutes. After remaining asleep ten minutes, she awoke and went into one of her fits, which promised to be a very severe one. But I placed my fingers on her eyes and made contact passes over them; when in two or three minutes she became quite tranquil again, and went to sleep. I awoke her by transverse passes after fifteen minutes more, and she remained comfortable.

The next day she went to sleep in a minute and a half; and awoke in ten minutes looking wild. But contact passes quieted her. I let her sleep half an hour. She said she was conscious but could not speak or move. After awaking her, I put the alum crystal into her hand, and she went off in twenty seconds. She had never heard of it before.

May 25th. She has been mesmerised daily, and has only had two slight fits, caused by excitement. She is now very susceptible—going off with one pass—unconscious during the sleep, and cataleptic. She is very sensitive to mesmerised water, and goes to sleep every night on taking a sip, waking when the clock strikes seven, because I have told her, when in the sleep, to do so.

Shortly after the above date, she told me she considered herself quite well, and, as it was inconvenient for her to attend me, she would get a friend to mesmerise her who lived near, and would come to me occasionally. *She has never had another fit.*

Painless Tooth Extraction.

About two months ago, she presented herself accompanied by her mesmeriser, wishing me to extract a tooth for her in the mesmeric sleep. She was sent to sleep without a pass; her mesmeriser merely saying, "Go to sleep Maria." I then extracted the tooth—a bicuspid—not loose; and I think it must have been a very determined sceptic who could have doubted. The perfect relaxation of every muscle was beautiful: no practice could have enabled her to perform in such perfection. She still remains quite well.

Loss of Voice.

Mrs. Moss, whose mesmeric accouchment and tooth extraction have been reported in former numbers of *The Zoist*, applied to me about a month since, suffering from aphonia (loss of voice) and inflammatory symptoms arising from cold. I immediately mesmerised her, but without any relief; and, as on other occasions, I had usually given her immediate relief from whatever she might be suffering, I did not persist, but gave her medicine, ordered leeches, mustard poultice, &c. This was on a Tuesday. I went on *secundum artem* until the following Friday, when, finding her worse rather than better, I said, "mesmerism must cure you after all." I accordingly put her to sleep for half an hour, and left her. I then returned, and made local passes over the throat and chest, and made her take mesmerised water during her sleep (she cannot even look at it when awake, she is so very sus-

ceptible), and, when I awoke her, she spoke out to the astonishment of her husband and neighbours, as she had not spoken out for five days previous. She did not again lose her voice, and two or three more mesmerisings on that day and the following removed all the pain in the chest and other symptoms.

I have for some months past been mesmerising a gentleman, aged 83, for what he terms chronic lumbago: and the relief he has experienced is truly wonderful.

In conclusion, permit me to add my testimony to the wonderful clairvoyant power of a patient of Major Buckley's. I was never before thoroughly convinced of the existence of the phenomenon of clairvoyance. I can now no longer doubt it. After seeing several packets that had been read unopened, I sealed up a sentence in an envelope myself in such a way that it would have been utterly impossible for any one to have opened it undetected: and it was read accurately. When will the whole science obtain a thorough and impartial investigation?

I remain, yours faithfully,

THOMAS CHANDLER.

58, Paradise Street, Rotherhithe,
Dec. 6th, 1850.

XIV. *Cures of Insanity; Rheumatism; and extreme Nervousness, with inflamed Eyes.* By Mr. ELLIOT.

MRS. SUTTON, age 30, No. 5, Queen's Road, Chelsea, was brought to me to be mesmerised under a severe attack of rheumatism. She carried her left arm in a sling, and it was very much swelling from the hand to above the elbow. Her legs and feet were also very bad; she was hardly able to stand. She had been under medical treatment for about a month, but did not get any relief from her pains, which were constant day and night and deprived her of all sleep. She was mesmerised every other day for three weeks, and was quite restored to her former health.

Rheumatism and Debility.

Mrs. Kendall, age 36, No. 35, Lower George Street, Queen's Road, Chelsea, had been very ill for about nine months with general debility and loss of appetite. She then had an attack of rheumatism, and was obliged to keep her bed and lie on her back. The pain extended over her whole body, but at length became more violent in the legs and

feet, which were swollen. By being mesmerised a few times she lost all her pains, and fast recovered her former strength.

Insanity.

Charlotte Kendall, age 46, sister to the above Mrs. Kendall, some time back lived as cook and housekeeper in a gentleman's family at Brompton, and from some cause unknown she unfortunately became quite insane. Her friends were about trying to get her into the Lunatic Asylum, but wished to try mesmerism first. I treated her with mesmerism, and she is quite restored to her reason, and now gone to service again in her right mind and in good general health.

Miss Ann Elliott, aged 23, Stanhope Road, Bromley Common, Kent, has been a great sufferer for the last four years from a general debility, loss of appetite, and lowness of spirits, palpitation of the heart, frequent faintings under the least fatigue, and great nervousness, and for a long time had been subject to weak and inflamed eyes. The young woman has been mesmerised daily for about three weeks, and is now returned to the country quite well.

EDWARD ELLIOT.

29, College Street, Dowgate Hill, City,
December, 1850.

XV. *Researches in Cerebral Development; Averages and Progress of the Human Head from Infancy to Fifty Years: with some practical Applications.* By Mr. JAMES STRATON.

IN two previous papers I discussed at some length the imperfections of the ordinary method of estimating and recording cerebral development *(Zoist,* No. XXIII., pp. 291—301, and No. XXV., pp. 53—64). These papers are avowedly brief and imperfect. To have discussed every point of the subject fully would have required more space than I felt justified in asking, and more time than I thought the subject worth. I take leave to presume that enough was said to demonstrate that an extensive reform is necessary before the followers of Gall can do either their science or themselves justice. If that point has been attained, we are prepared to consider the nature and extent of the change required; and that consideration will in its progress point out many of the imperfections of the ordinary system, more clearly and effectively perhaps than lengthened arguments for the special purpose.

Since the papers referred to appeared, I have been favoured with remarks by various esteemed cultivators of our

science on some of the points discussed. A few of these remarks I think it valuable to quote, as anticipating objections which are likely to occur to others. Several of the parties think it would have been better to go on with improvements, leaving imperfections to die a natural death. It would have been much the more pleasant way, but others think I delayed too long in drawing attention to imperfections with a view to their removal. I have successively participated in the sentiments of both parties. I hoped when it was shewn that the cranium could be measured scientifically, it would then be seen that this was only a first step in improvement, that others would follow in due course, and that we would hear no more of the *impossibility* of improvement. I found my mistake. At every turn I met with evidence to convince me that the nature and extent of these imperfections were unseen, and unsuspected. It then appeared improper to avoid discussing the subject so far as was necessary to lead candid thinkers to look at the matter, and leave it there.

The next step in cerebral observation, after the absolute size of the head is obtained, is to discover the relative or comparative size. This is a very laborious process in the first instance, as the sequel will shew, but the easiest possible afterwards. I have now completed that labour to such an extent as enables me to submit the results with considerable confidence, and this is the primary object of the present paper. It will be found important to preserve a consecutive view of our subject, I therefore briefly repeat the conclusions reached in the preceding articles, noticing by the way one or two objections just referred to. I put these conclusions into the form of comments on the following "note of development."

P. G. (male) aged 10 *years.*

DEVELOPMENT.

No.		No.		No.	
1.	Amativeness 11	12.	Cautiousness..... 10	24.	Size 14
2.	Philoprogenitiveness.. 14	13.	Benevolence 12	25.	Weight..... 13
3.	Concentrativeness.... 11	14.	Veneration 13	26.	Colour 12
4.	Adhesiveness..... 11	15.	Firmness 13	27.	Locality 12
5.	Combativeness 11	16.	Conscientiousness.. 11	28.	Number 14
6.	Destructiveness..... 11	17.	Hope..... 11	29.	Order 13
†	Alimentiveness 10	18.	Wonder..... 12	30.	Eventuality .. 14
7.	Secretiveness..... 12	19.	Ideality..... 12	31.	Time..... 12
8.	Acquisitiveness 11	20.	Wit 10	32.	Tune..... 13
9.	Constructiveness 10	21.	Imitation 13	33.	Language 13
10.	Self-esteem 12	22.	Individuality..... 14	34.	Comparison .. 14
11.	Love of Approbation.. 10	23.	Form..... 14	35.	Causality 13

SCALE.

1.	6. Small	11.	16. Rather large
2.	7.	12. Rather full	17.
3.	8. Rather small	13.	18. Large
4. Very small	9.	14. Full	19.
5.	10. Moderate	15.	20. Very large

The subject selected is a boy at the earliest age recognized as suitable for phrenological investigation. What does the note of development enable us to predicate of the boy, and to predict of the man?

Absolute size of the head.—The series of measurements given does not enable us to discover by any specified rules what the size of the head is. It may be either the average, or above or below the average, of the male head at 10 years old. We neither know the truth nor the possible extent of error.

Comparative size of head.—Knowing neither the absolute size of the head, nor the average of the sex at the given age, it is impossible to institute any comparison, and equally impossible to say what alteration (or if any) the head will undergo in subsequent years.

Development of parts.—To appreciate accurately the development of regions and organs, it is, first, essential to know the equal balance, and the average proportions in all sizes. Neither of these have yet been determined—they are still matter of opinion, and claimed as such by all observers; whilst the variety of model-heads in existence prove the great difference of opinion, the great importance of the question, and the difficulty, not to say impossibility, of solving it by ordinary practice. Secondly, it is necessary to ascertain the absolute development of each part, but this is never attempted. An estimate of the "relative development" is thought quite sufficient in all cases. Here the most ample scope exists for variety of opinion, and ample latitude is taken. Even among observers who agree about the equal balance proportion, some find three or four, whilst others find six, eight, or ten degrees of development in the same case. Thus is matter of fact involved in all the uncertainty of matter of opinion, and that which should be determined and uniform, is doubtful and variable as the tastes and the tempers, the talents and the training, the intelligence and the ignorance of human beings.

Objection.—We may know that one part is large and another small, without knowing either how large the one, or how small the other is.

Reply.—This is the popular mode of evading instead of meeting the general question. We may grant the affirmative, but must add what a little reflection will confirm,—that just in proportion to our knowledge of *how* large, and *how* small the parts are, so is the value of that knowledge, our confidence in its certainty, and our willingness to be guided by it. We may put our case thus:—An important point (say the fate of a fellow-creature) is depending on the question of the deve-

lopment of certain parts of his brain. Three witnesses having taken the development "by the estimate of the eye and the hand," on being separately examined declare that Acquisitiveness is "rather large, or large;" and that Cautiousness and Conscientiousness are "rather small, or small:" a rare unanimity, but we take the most favourable view of the case. Other three witnesses having found the development of the parts by measurement (assuming that possible for a moment), state, not the *precise* "how large" and "how small," we will suppose, but that Acquisitiveness exceeds in development that organ in the average man of thirty years, and that Cautiousness and Conscientiousness are below those in the average boy of seven years. The different degrees of weight which the respective items of evidence would carry to every rational mind need not be commented on.

Scales.—To preserve a useful record of our observations for future comparison, confirmation or correction, and to convey our ideas of development accurately to other minds, it is necessary to use a scale, each term of which has one clearly-defined and unchanging meaning, which could be understood in one sense only by all parties at all times. Instead of this we have a variety of scales, each term of which is understood in a somewhat different sense by different persons at the same time, and by the same person at different times.

It follows, then, that a "note of development" of any case simply shews the writer's opinion of the "relative proportions" of the organs in words or figures, which perhaps no two individuals understand exactly in the same sense, and which the writer himself may not understand in the same sense at any future time. Taking it for granted that the observer's opinions are correct regarding the equal balance proportion, and the degrees of deviation from that balance, the sum of the information conveyed by the "note," is, that certain parts are developed in a greater degree than certain other parts; but how much or how little the greatest exceeds the least or any intermediate part, or what is the absolute development of any part, we are not informed.

Thus much, or rather thus little, can we say of the boy. Of the man we can say nothing; knowing neither the size of the head given in the note, nor the average alteration in either size or form between 10 years old and maturity.

The note of development reviewed is as explicit in every essential particular as such notes usually are. Every specified condition is fulfilled, and the only orthodox means whereby to convey additional details, is to furnish each reader with a cast of the head If this were conveniently practicable, then

each party would find the phrenology of the case for himself, would reach the conclusions which he thinks most proper, and believe these to be the conclusions which every other phrenologist either had reached, or might, could, would, and should reach. If it were farther practicable to collect a hundred or a thousand notes from as many observers practising in widely separated localities, and to submit these to one who knew not what was meant, it appears to me extremely improbable he would ever suspect that any considerable number of the notes referred to the same case. Some would give one series of measurements, some another; some would call the head one size, some another; some would use one scale, some another; some would use one part of a scale, some another; and the estimated development of the regions and organs,—modified partly by conflicting ideas of equal balance proportions, and partly by the talents and training, the proficiency and the pretensions of individual observers,—would in all probability be variable to an extent only limited by the number of notes compared.

Objection.—The proportions stated by each good observer will coincide, particularly if the case is a marked one, such as those in our museums, though their terms differ.

Reply.—First: I have always found the best observers the first to acknowledge the imperfections I have sketched, and the readiest to regret the impossibility of coinciding either with themselves at different times, or with others at any time.

Second: we must judge of the proportions stated, *by* the terms used. If the latter differ, we may suppose in some instances that the former agree, but that is only our supposition.

Third: agreement in marked cases,—the very rare and by far the easiest cases would be the least possible proof of the suitableness of the system for indiscriminate use. Still less are the cases in our museums suitable tests. They were our "school-books," so to speak. We studied them in connexion with notes of development in the published treatises, and the known character of the individuals. We are therefore neither independent nor always impartial observers of such cases.

It sometimes happens, however, that just when a marked character emerges into public view, a few independent estimates may be collected before "professing phrenologists" have time to take one from the "higher powers." These form curious commentaries on the points we have discussed. I close this department with one or two illustrations. T. Leith, who was hanged at Dundee some years ago for poisoning his wife, was long well known in the place as a leading man

among the sect called Ranters. He had at various times got five separate notes of his cerebral development; all highly favourable. A sixth observer, however, who manipulated the condemned in his cell, found "that Conscientiousness shelved completely away behind, as did also the intervening organ;" "and his Secretiveness very fully developed, in a peculiar way indicating that it had increased from its original development;" and many other strange things (see *North British Mail*, 8th October, 1847). Leith held to the previous five, and requested a cast of his head to be taken after death, obviously believing that it would support his plea of *not* guilty which he maintained to the last. Copies of the head are now in many collections. I heard the accuracy certified by several gentlemen, one of them an excellent artist, who were present when the mould was taken. It is a valuable specimen of a low type and a large head. I need hardly add that it refutes all the six estimates very completely.

The next is the much more famous case of Rush. I give six estimates of a few of the organs. The first three (Edinburgh, Paris, and New York) shew the differences consequent on different ideas of equal balance proportion. The fourth (London) is from "Clark's *Life of Rush*, 27th edition;" and the two last are from respectable local papers.

James B. Rush, the Stanfield Hall Murderer.

	Edinbur.	Paris.	N. York.	London.	Manches.	Wolverhampton.
Amativ. ...	Very large	Very large	Very large	Very large	Very large	Very large
Concen. ...	Rat. small	Moderate	Moderate	Very full	Very small	Almost wanting
Combat. ...	Full	Full	Full	Full	Very large	'Enormous'
Destruct.	Moderate	Full	Full	Full	Very large	Enormous
Secretiv...	Moderate	Moderate	Moderate	.....	Very large	Enormous
Acquisit....	Large	Moderate	Full	.....	Very large	Enormous
Cautious.	Small	Moderate	Moderate	Very full	.....	'Not large'
Benev.....	Full	Full	Full	'Wanting'	Small	'Almost entire. wanting'
Vener.....	Full	Full	Full	Wanting	Small	Almost entirely wanting
Hope	Full	Full	Full	.....	.....	Almost entirely wanting
Ideality...	Moderate	Full	Full	Very defic.	Very small	Almost entirely wanting

This is pretty well, but we want one or two "notes" of date when Rush was quite a respectable man, to make the *melée* more complete.

The question of which is right we may pass by: it is the "enormous" difference of the "proportions stated" that is worth looking at. Gall's method is barely borne out. There is great variety of estimate of all the marked organs except one, Amativeness. As to the modern improvements whereby we pretend to discriminate to a hair's-breadth in all cases—where are they? what are they? It were easy to charge with incompetency, and as useless as it is easy; to prove where, and to what extent, would be another and a very different

matter. One of what I think the most preposterous of the estimates, is by one of the oldest phrenologists in the kingdom; a person who had all the advantage of Dr. Spurzheim's instructions, and has ever since been in public practice. But though proof of incompetency was complete, *Cui bono?* what is accomplished? The mischief would be neither killed nor cured;—not even arrested for a moment. Uniformity among observers in estimating cerebral development without measurement, is obviously as hopeless as between the Esquimaux and the Caffre in estimating the heat of the air without the aid of the thermometer. Whilst uniformity is impracticable, accuracy is impossible. Almost any change which would secure uniformity would be an improvement. Though it were impossible at first to avoid error to some extent, if uniformity even in error were secured, the nature and extent of the error would sooner or later be discovered and removed. A change is not less required to enable the honest, the talented, and the industrious to compare their observations, to verify their facts, to establish their principles, to vindicate their superiority, and advance their science, than to harness the senseless zealot and expose the ignorant quack. As the case stands, we have only the certainty of error, without the certainty of where, how, or to what extent, Gall's discoveries are caricatured and prostituted, minds disciplined in the stern school of modern science are turned away, and the progress of truth is indefinitely retarded.

To illustrate the practical bearings of my investigations, I will continue the case of P. G. through all its stages; keeping steadily in view the conviction that our scientific duty will not be performed until we not only shew what he *now is* (in cerebral development) both in capability and tendency—both positively and relatively, but what he has been since birth, and what he will be at all ages to the latest period of life.

The human head (always excluding the face, of course), or cranium, is a singular exception to all other parts of the body in the facilities afforded for accurate measurement. The soft muscular tissues of the arm, the hand, the leg, the thigh, and the trunk, yield to the touch of the most delicate instrument, yet they are measured every day with great accuracy; but the brain in its perfectly fitted case of bone is as susceptible of instrumental measure as if it was a solid mass of ivory, iron, or stone.

Absolute size of head.—The only difficulty in obtaining the absolute size, or volume,—the cubic measure of the cubic mass,—is in the irregularity of its shape. This difficulty is removed. In my *Contributions to the Mathematics of Phre-*

nology,* I have shewn how the size of the head can easily be determined. By the method there described, I find that the head of P. G. is 7 inches average length, 5·1 average breadth, and 3·4 average height; the size is therefore 121 cubic inches

Comparative or relative size—Averages.

Our next question is the comparative size. Is 121 cubic inches a large, a small, or a medium male head, at 10 years of age? And farther, supposing the progress of the head to be average during the subsequent periods of life, what will be the size (and shape also, we must ask) at 20, 30, 40 years, and upwards.

This at once brings us to the questions of progressive development, of average size, and range of sizes of both sexes at all ages. The importance of these questions, both to science and to art, has long been extensively recognized, and their solution attempted by many parties; or rather, I should say, attempts have been in this direction. Skulls have been gauged, brains have been weighed, and heads have been measured in a variety of ways, but the systematic investigation of cerebral development is still to begin. Of the little that has been done, the greater part is labour lost. Notions, alike varied and vague, seem to be entertained both as to what is to be done and how to do it. We must consider both points for a moment. We have to trace the cerebral development of both sexes separately, through all its changes both of size and shape, from birth to the latest period of life. There is a great variety both of sizes and shapes of the same sex at the same age, and of each sex at all ages. We have therefore to discover (1) the average shape, and (2) the range of shape from the highest type to the lowest. We have also to discover (1) the average size, (2) the range of sizes from the smallest to the largest, and (3) the laws of grouping, if I may so speak; that is, the proportion of cases at each point or step in the scale of size from the smallest to the largest. All this has to be investigated in each sex at all ages, and in each community, tribe, nation, and race. Herculean task this undoubtedly is, which will require much time and labour to execute. I can only "break ground" in a corner of the great field; but every item is an acquisition to real knowledge, and every subsequent addition made will not only have its own value, but increase that of all the previous store.

The terms average, mean, and medium, are frequently

* Simpkin and Marshall, Stationers' Hall Court, and Baillière, 219, Regent Street, London.

spoken of and written about as if they were synonymous. They may, or they may not, be so in our department, and must therefore be clearly understood. Let the numbers 100, 108, and 110 be three heads, composing a group of which we wish to find the average. The *mean* of the group is 105, being equidistant from both extremes, viz., from 100 and 110. The *medium* is 108, there being an equal number of cases (viz., one) in the group above and below that point. The AVERAGE is 106, being the size which the three heads would be if they were exactly equalized. The average is, next to the laws of grouping, the most important particular to be known. It is that size of head which we would obtain in any group of few or of many cases, if we could take from the larger and add to the smaller until all were of one and the same size. The *average* is therefore the most appropriate *single* term which can be used as a general representative of the cerebral development and power of any group, tribe, race, or nation. A knowledge of the average is of great importance for philosophical purposes,—for general comparisons and deductions; but it takes for granted for the moment that all the heads composing the group are of the same size. This is very far from being consistent with the facts however, and for more minute comparisons we therefore require much more definite knowledge.

Laws of grouping.—If we take at random, or without selection, any group of several hundred individuals, of the same age and sex, say boys in their eleventh year as an example: on measuring each in the group, we find some of the smallest heads only 90, whilst some of the largest are above 150 cubic inches. These are the ordinary limits of size, or the length of scale over which the entire group ranges. The next question is, Are the sizes spread equally over the scale, or do they cluster more numerously at some point than at others? Plate I. illustrates this question. Fig. 1 is the scale of size, viz., cubic inches, of our imperial standard. Figs. 2, 3, and 4, are groups of twenty; and Figs. 5, 6, and 7, groups of a hundred cases each (males in the eleventh year), taken at random as they were measured and entered in my book; a dot being placed for each case opposite its size in the scale. In Figs. 2, 3, and 4, the cases are too few (twenty each) to give a single ray of light on the subject. In glancing the eye over group, Fig. 5, the law seems to be a pretty equal distribution of sizes over the whole range; but in Fig. 6 the tendency to cluster near the centre of the range is seen; this tendency is still more obvious in Fig. 7; and Fig. 8, which is the three preceding groups combined, makes the

Plate I. Cerebral Development.—Laws of Grouping.

4	3	2	1	5	6	7	8
M. C. 20	W.C. 20	P. C. 20	Cubic inches.	100 Paup. Class.	100 Work. Class.	100 Mid. Class.	300 Three combined.
			92				
			93	•			•
			94				
			95				
			96	•			•
			97				
			98	•			•
			99	•			•
			100				
			101	••			••
			102	•			•
		•	103	••			••
•			104	•	•	•	•••
			105	•••••	•		•••••••
•			106	••	•	••	•••••
	•		107	••	••••	•	•••••••
	•		108	•••	•••		••••••
			109	••	••		••••
•			110	•••		••	•••••
	•		111	•••••	••	••	•••••••••
•	•	••	112	•••••••	••	••	•••••••••••
•••	•••		113	•••	•••••••••	••	•••••••••••••
•		•	114	••••	••	•••••	•••••••••••
•	••	•	115	•••••••••	••	•••••	••••••••••••••••
	••	•	116	•••••	••••	•	••••••••••
••	•		117	••••	•••••	•••	•••••••••••••
••	•	••	118	•••••	••••••	•••••	••••••••••••••••
			119	•••	•	•	•••••
•		••	120	•••••••	•••••	•••	••••••••••••••••
•	•		121		••••	••	••••••
•		•	122	••	•••••	••	•••••••
	•	••	123	•••	•••••	•••	••••••••••••
•		•	124	•••	•••••	•••••	••••••••••••••
	•	•	125	•••	•••••••	••	•••••••••••••
	•••		126	••	•••••	•••••	••••••••••••
			127		••	•••••••	•••••••••
			128	•	•	•••	•••••
•	•	•	129	•••	••••	••	•••••••••
		•	130	•	•	••	••••
			131	•	•	••	••••
•			132		•	••••	•••••
•			133		•••	•••••	••••••••
		•	134	•	••	•••••	••••••••
			135		•	•••	••••
			136	•	•	••	••••
		•	137	•	•	•	•••
			138			•	•
			139		•	••	•••
			140			•••	•••
		•	141	•			•
			142				
			143			••	••
			144				
			145			••	••
			146				
			147				
			148				
			149				
			150			•	•
			151				
			152		•		•

matter very clear. With this before the eye, and the measurement of any male head at the given age, we see at a glance the relative position of the individual in the scale of cerebral development. If the example is 120 inches, his place is the centre of the group; if it is 110, his place is far down in the scale; and if 135, though far from the highest point, he has but a small per centage of superiors in cerebral development at his age.

This may appear to many as attempting fastidious accuracy, and I must grant for the time that it is so, and shall here say little more on the point, but take leave to doubt that it will long be considered in that light. In every department of science the fastidious accuracy of one age became the common standard of the next, and the greater the precision in practice, the richer, in a greatly increased ratio, has the harvest of results been. The alchymist of old might estimate his bundles of herbs, his lumps of earth, and masses of metal, by the eye and the hand, and smile in derision at the fastidious scruples of his modern representative, conducting his investigations with the most minute attention to weights, measures, atomic theories, and tables of chemical equivalents. During the estimate of the eye and the hand, astrology held the place of astronomy. The earth, a boundless plain, was the material universe, round which the hosts of heaven revolved in their spheres. The sun and moon rose in the east and set in the west, the wandering stars were gods ruling the destinies of men, and the fixed stars were food for the picturesque among the shepherds on the plains by night. With instrumental aid, a more precise estimate of facts is obtained; the earth, turned into a ball, rolls away in the regions of space to its place among the gods; having by turns been the scene of their creation, their cradle, their temples, and their tomb. The wandering stars become worlds, and the world becomes a wandering star; the sun comes to rest in the centre, and the stars adorn the circumference of the system; the geometrician stretches his lines and applies his scales; the planets are measured and their paths traced out in the skies; the sun is weighed as in scales, and the moon as in a balance. Greater precision still is attained, and we discover "in every star a system, in every atom a world." But between the first step in improvement effected, and the last yet attempted, what lapses of time, what efforts of genius, what accumulations of labour, what improvements in art, what advances in science were necessary! That our science will run some similar course of improvement is my firm conviction. Each generation improving on the preceding in the precision with which it appreciates

facts, purifying and enlarging the fountain of its inductions, extending and establishing the domain of science. In essaying improvement, I am more anxious in the meantime to attain the easiest practicable than the greatest possible stage in advance. The illustrations given will suffice to indicate the nature and importance of what I have called the laws of grouping, and make the averages and ranges of size,—the centres and lengths of the groups we may say,—more fully intelligible. These will shew, in a general way, the modifications incident to age and sex in the population included in the survey. What further modifications in any or in every particular may obtain in other parts of the empire, and among other tribes, nations, and races, are important questions, but impossible to be answered till the requisite data are collected and collated.

Data.—We have a choice of three classes of objects as data for solving the problems before us, viz., the brain, the skull, and the living head. We may notice, in passing, the peculiar merits of each.

Brains.—The weights of brains are considered by many as the only suitable data from which to deduce the development. They are highly useful in some, but useless for our purpose in other, particulars. (1.) Is the weight of the dead a true index of that of the living healthy brain? This is very doubtful, to say the least of it. It is quite certain that we could never discover the average size and weight of the healthy by weighing and measuring emaciated dead bodies. But (2.) granting that the weight of the brain is in every instance unchanged in its passage through disease and death, as we cannot weigh the living, the results furnished by dead brains do not meet our most important wants. Still they are useful, I repeat; though least accessible, they have been more attended to, and their facts tabulated with greater care and skill than has obtained in either of the other classes of cases. They furnish, from independent data, a chain of results running parallel in several particulars with our present investigations; we will therefore take their evidence in the proper place.

Skulls.—Crania are admitted by all to be suitable data. Vast collections have been made all over the world, and at a cursory glance we seem to have ample material for every useful purpose; but it dwindles rapidly on closer inspection. Of many specimens the sex, and of many others the age, cannot be determined. Of a third class, both age and sex are unknown. Contributors to this department seem to have thought the name of the tribe, caste, nation, or race, all the

information necessary to be given, or it was probably all that could be obtained with the specimens; nor has the examination of the crania been as yet conducted with greater care than the collection of them. Professor Tiedemann measured the internal capacity of crania by filling them with millet seeds. Now these, in common with most other seeds, are very susceptible of alteration, both in weight and bulk, by atmospheric changes. But still worse for the end to be attained is the fact of its being difficult, if not impossible, to shake or pack uniformly the same weight into the same bulk or measure. Sir William Hamilton avoided the errors consequent on atmospheric changes, by using "pure siliceous sand;" but as regards uniform packing sand is little superior to seeds. Dr. S. Morton used leaden shot for the same purpose; this is by far the best solid substance for the purpose which has yet been proposed. Leaden shot of small size, if well made, is so smooth, spherical, and heavy, that it packs into uniform space with very little care. I have seen the suitability of all these substances tested by experiment so often, and always with the same results, that there seems no room for doubt about the matter. But M. de Wolkoff's researches stand first in merit in the mode of determining size or capacity. He measured the crania by the quantity of water which each contained.

Heads.—Living heads are at once the most numerous, the most accessible, and the most important data for the purpose of cerebral physiology, and it is small compliment to our industry and love of scientific precision to be under the necessity of admitting that hitherto they have been the least used for the purpose in hand. Lists of line and calliper measurement of twenty, thirty, or forty cases may be found in phrenological books; but no systematic investigation has hitherto been executed in any race, nation, or tribe. Sir William Hamilton has, and will long have, the sole merit of having "established, apart from the proof by averages, *that the human encephalos* [entire brain] *does not increase after the age of seven at highest.* This has been done by measuring the heads of the same young persons from infancy to adolescence and maturity."*

We will look again at this singular discovery.

Individual cases.—It may occur to others, as it did to Sir William Hamilton, that to discover the progressive development, and period of maturity, it is necessary to measure the same young persons from infancy upwards. I have repeatedly

* *Edinburgh New Philosophical Journal,* April, 1850.

found the delusion (for such it is) existing in quarters where I little expected to find it; and when it does exist it may be entertained by honest and industrious inquirers even after they have many hundred cases tabulated. The change both in the size and shape of the head goes on for so long a period of time, the difference between the sexes at all ages, and between individuals of the same sex at the same age, and at all ages, is so great, that measurements tabulated indiscriminately seem to be an inextricable mass of confusion only, in which it is impossible ever to discover order or harmonious progression. But, when large numbers have been properly classified, and the averages taken, all doubts about obtaining harmonious results will vanish. Every link of the chain may not be complete at first; some may be obviously a little too large, others too small. No matter, additional cases will perfect the symmetry; and when perfected, no subsequent number of cases taken at random in the same locality will sensibly alter the results. All this will be admitted after due reflection. Except the average size of the head at any or at all ages be different in different years, or in different seasons of the same year, in the same locality, it is not necessary, it may not even be proper, as we will soon see, to measure the same head twice for the purpose contemplated. It may be possible, but is not very probable, that any one head makes exactly average progress in development from infancy to adolescence and maturity. I have in many instances measured the same head twice, thrice, or more times, with one, two, or more years of interval, and am prepared to prove that, if average progress be the rule in individual cases, there are many exceptions to that rule. In some cases I have found scarcely any progress for years; in others I have found much more than the average progress.

The influence of circumstances on development has yet to be investigated. Not only health and sickness, but change of employment, change of residence from town to country, and from country to town, are capable of producing important deviations from the average progress. Shortly after my amiable friend, Sheriff Watson, opened his ragged schools in Aberdeen, I measured the heads of all the inmates, amounting to several hundred boys and girls. Three years afterwards I repeated the survey, and found some eighty or ninety of those I had previously measured. Nearly all of them had made more than average progress, some of them more than double that rate. This change (still more marked in other parts of the body than the head) was unquestionably the effect of the altered circumstances in which they had been

placed during the preceding years. From wandering about, begging and stealing, suffering all the miseries of cold, hunger, filth, and neglect, they were taken under comfortable shelter. Food, clothing, air and exercise, both mental and physical, had been judiciously regulated, and such were the happy consequences.

If, however, the cases repeatedly measured were sufficiently numerous to secure the precise average of health, sickness, and all the other contingencies, known and unknown, which influence cerebral development, then they would be equally, but not a whit more, appropriate than if the same head had never been twice measured.

Quantity of data required.—It will be admitted by all that the greater the quantity of data collected and collated, even the entire race, nation, tribe, or community if that were possible, the greater the certainty of discovering the truth. But I expect no such unanimity as to the smallest number of cases that may with safety be relied on. Soemmerring, from one case, found maturity attained at three years of age. Tiedemann, with six male cases under seven years of age, is confident that the brain reaches its full weight in the seventh or eighth year. Sir William Hamilton, on similar data by Sims, finds maturity at the sixth, or at the utmost in the seventh, year, "superfluously confirmed." We will soon cease to be surprised at any conclusions, however absurd, being drawn from so very limited premises. At the recent meeting of the British Association for the Advancement of Science, the secretary of one of the sections descanted very learnedly on an ancient Scottish race, who once peopled the part over which my survey of the present population extends; the said race being represented on the table of the section by five skulls, the sex of some, the age of others, and even the identity of race of one or two of which appeared to me doubtful. Professor Tiedemann represents the entire human race by 225 male and 25 female examples. Dr. Morton performs a similar feat with 620 crania. He represents the Germans by 18 crania, the English by 5, the Anglo-Americans by 7, the Irish by 6, the Arabs, the Chinese, and others, by 3 cases each. As a specimen of his accuracy, I may state that his largest English is just equal to the average Scotch male skull at 50 years of age. His thus trifling with truth cannot easily be excused in some particulars. In the Germans, English, Irish, and some others, he might have tabulated any quantity of data

At an early stage of the investigation I saw that at least 100 cases of each sex, at each year of the age, from birth till

14 years or older, were required. I have since found that many more than 100 cases of the same age and sex do not suffice for every purpose. The groups in Plate I. show the adaptation of large compared with small quantities of cases to discover the more recondite laws of development. The three smallest groups (fig. 2, 3, 4,) of 20 cases each, lead to conclusions the very reverse of those established by the larger groups (fig. 5, 6, 7,) of 100 cases each; yet they are all the same cases grouped at random from the same pages of measurements. The smallest groups give neither the range nor the average, singly nor combined, and they do not give a glimpse of the laws of grouping. Even the larger groups (fig. 5, 6, 7,) are not quite conclusive on the latter point; we require the symmetry exhibited in the largest (fig. 8,) to demonstrate the degree of certainty obtainable from large, compared with small, quantities of data. A glance at the large group inspires a feeling of confidence that the general features at least, the great outlines of this department of nature, are seen, though some of the more minute details may not be distinctly in view. The value of large quantities in solving important problems will become still more obvious a little further on. We may just remark here that, in consequence of the great range of sizes (about two-thirds of the average head) of both sexes at the same age and at all ages, rendering small quantities liable to be unduly influenced by an excess of either large or small cases; and in consequence also of our ignorance of the constant conditions of the problems to be solved, we can avoid the risks of error by one means only, that is by tabulating numerous examples. When we are better informed, it is not only possible but highly probable that a few cases may suffice to reveal the truth. The meteorologist of our day may discover the average temperature of many places with very limited data; but it required the hourly observations of years to learn how to abridge labour and at the same time attain the truth. A few broken bones may enable the modern anatomist to sketch the skeleton which he never saw nor heard of, but the laws under which nature operates in this department,—the constant conditions of the problem,—had first to be discovered.

Races.—The distinction of races is so broad and marked in the general outline, that it is universally recognised; but in the details there is every variety of opinion, and, of course, of classification also. This is quite as it should be in the present state of knowledge, or ignorance rather, of the subject, and ought to continue until a more accurate appreciation of form and size, and more definite reasoning on their

consequences prevail in the scientific world. The doings of ethnologists, the ostensible inquirers in this department, are sad specimens of scientific bungling. The tendencies are in the right direction, however; a little farther on they will discover that ethnology, apart from Gall's discoveries, is the shadow apart from the substance.

Sex.—The difference between the sexes, both in size and shape, particularly the size of the head, seems so obvious, that separate classification would never be omitted. Not so, however; Dr. Morton in common with some others, has entirely overlooked the distinction. The consequence is that, except we are warranted in assuming that there are equal numbers of each sex included by him (a very doubtful proposition), his splendid "Crania Americana," and productions in that department, are little better than lost labour on waste paper.

Age.—The greatest variety of opinion prevails as to the period of life at which the head attains its full size: 3, 5, 6, 7, 8, 10, 14, 16, 21, 25, 30, and above 40 years, have by turns been named as the period of maturity. Such a state of uncertainty called for special attention to the classification of ages, but seems to have had just the contrary effect; as if variety of opinion justified neglect of the subject, or the most trifling exertions to discover the truth. Of this Sir William Hamilton is amongst the most recent and characteristic instances. From one to a dozen of cases have respectively been held as ample evidence to settle the question and justify theorising to any extent. Every friend of science is entitled to protest against this summary mode of settling so important a point, and to maintain that no inquirer has any right to theorise on the matter. It is his duty to classify data in single years, or less periods while development is rapid, and in small groups of years after the progress becomes slow, leaving the facts to tell their own story. To assume on trifling evidence that the head attains maturity at 3, 6, 12, or any other age, and class all above that as mature, is virtually to shut up the path which leads to truth.

Thus far the propriety of classification will, I venture to presume, be admitted after due consideration. But I have only entered on the subject, not ended it; though with only one suggestion more, I must close for a time.

Sections.—I had seen it stated by some, denied by others, and proved by none, that a difference of size in the average head characterised different sections or classes of the same community. On the authority of hat merchants' observations, it became generally supposed possible, if not indeed probable, that the lower classes of society had smaller heads in the

average than the middle and higher classes. Against this statement might be placed a semi-scientific article in the *Phrenological Journal* (vol. xix., p. 216. Edinburgh, 1846), which represents the inmates of the ragged schools (beggars and thieves) as larger headed than the average population of their locality,—London.

The article is plausibly written, but seemed to me far from remarkable for either close observation or clear reasoning, and tended to mystify a subject which was anything but clear before. We are told, "It needs but a glance at the physique of these boys to perceive that mental daring predominates over bodily strength; for as they are subject to alternate fits of repletion and starvation, and as in addition the air which they continually respire is surcharged with the foulest vapours and pregnant with death, dealing fevers instead of conferring the healthy bloom of youth, they appear emaciated, careworn, and consumptive. The heads of the majority of the boys are large, much larger indeed than the heads of most well-educated youths; many in fact of the age of fifteen, possessing heads as large as those of active men of thirty. In "civilized" and in savage life, in society and in solitude, in the cave, the cot, the hut, and the hovel, in the forest, the desert, the bogs, and the back slums, alternate fits of repletion and starvation, air surcharged with the foulest vapours, pregnant with fever and death, have long played in full force on the human frame; if they are fitted to promote cerebral development, and make "the great absolute and relative size of the frontal lobe striking," then, long ere this time in the world's history, genius should have been the rule, mediocrity the exception. Be the facts what they might, the nature of my investigations left me no alternative but to penetrate the mystery. If different sections of the same community present different averages of either size or shape, such differences could not be overlooked without certainty of error to some unknown extent in the general averages. I therefore visited the ragged schools, and embraced every other opportunity of measuring and tabulating the pauper, the working, and the higher classes separately; the resulting averages surprised me not a little. The groups in Plate I. make the whole obvious. Fig. 5, shows the grouping on the scale of size (fig. 1,) of 100 paupers found in the ragged schools, in the jails, and prowling about picking up a living by begging, stealing, or selling matches, &c. Fig. 6, is a similar group of 100 of the labouring classes, and fig. 7, is 100 of the middle or higher classes of society, in which I include the professional classes, doctors, lawyers, ministers,

schoolmasters, merchants, manufacturers, landowners, leading agriculturists, &c., and their families. The whole of the cases forming the groups are males in the eleventh year of their age.

Little explanation is necessary. The position of the respective groups on the scale of size is seen at a glance. The pauper obviously range full five inches less than the working classes, and these again quite as much below the higher classes. The same relative position and proportions obtain in both sexes at all ages from five till between twenty and thirty years at least. Above the latter and below the former my data are not sufficiently ample to decide. The silent clusters tell one story and one only. No obliquity can mistake, no casuistry misrepresent or distort, it. The smaller groups (figs. 5, 6, and 7,) do not present the perfect symmetry and completeness of the large group, fig. 8; it were singular if they did so. All the cases were taken at random, as I have already said, and tabulated as they were measured. The grouping was consequently subjected to all the vicissitudes of chance, accident, or whatever else it may be called. Nevertheless, the symmetry is sufficiently complete to shew that no additional number of cases, however great, taken at random from the same classes, the same age and sex, in the same locality, would move the average of any of the groups to an important extent. The group fig. 7 is the least symmetrical of the three; a feature which is to my mind the most remarkable fact of the whole, and will be understood in a moment. The middle and working classes blend so imperceptibly into each other, the line of demarcation is often so indefinite, that it is no easy matter to say of many individual cases, to which of the classes they most properly belong. But further, sceptical as I was for a long time, about sectional differences existing, or if existing of their being sufficiently marked to be detected and clearly brought out in figures, and being rather wishful than otherwise that a laborious task should not be rendered more so by the necessity of attending to such distinctions, I was for some years not so fastidious in the classification as I ought to have been; hence results the more scattered appearance of group fig. 7. Though the effect of more minute attention to classification might have been to render the sectional distinctions slightly more marked, I do not now regret the circumstances stated. To demonstrate the nature and extent of varieties in the same community, which were doubted by some, denied by others, and unsuspected by many, is important in some particulars; but it is far more so to see demonstrated the great facility which our science

affords for deducing laws from statistical investigations; and that just in proportion to the care and accuracy with which the investigation is conducted, so are the distinctness and precision of the resulting averages.

Such averages, when legitimately evolved, form a species of evidence which fools alone can cavil with. Candid minds bow to the dicta as revelations of nature, on whose truth the utmost confidence can repose.

In the average, or mathematical being, we have a well-known and clearly-defined entity on which to reason; but though real, he differs in many important particulars from organized existences. He is freed from all the *individual* peculiarities of constitution and training, which are often difficult to discover, and which give bent to individual character which it is equally difficult to account for. The average being, when distinctly brought in view, exhibits all the greatness and all the littleness, all the strength and all the weakness, all the virtues and all the vices, all the capabilities and all the tendencies of the race, nation, age, sex, or section, which the individual represents.

The importance therefore of average individuals as solutions of problems in cerebral physiology can hardly be over estimated. Indeed, it may safely be said, that it is only after many such problems are solved that the full value of Gall's discoveries will be understood. If then in the same community, varieties, which have escaped the notice of the most careful observers, can be clearly demonstrated, and that too when the one element of size only is the criterion, how much more so when the element of shape also is considered? And how much more clearly still may the varieties of communities, tribes, nations, and races which compose the human family—varieties so markedly obvious as to have attracted the attention of the most cursory observers—be demonstrated with ease, clearness, and precision? What light may yet be thrown on the question of Celt *v.* Saxon, about which so much has of late years been spoken and written, and of which so little of the clear and definite organic distinctions, if any such exist, is yet known.

But just in proportion to the importance of such results, when obtained with precision, are the pernicious consequences, when, by want of due attention to essential conditions of the problems, errors are propagated under the guise of truth. If the average of ten, twenty, or thirty crania is permitted to pass as the true representation of a race, a nation, or a tribe, there are no limits to the errors which may be committed, the absurdities which may be promulgated,

either as favourable or hostile to Gall's discoveries. No doubt the labour to be done is immense. Much time must elapse, and much talent be spent, before even half the human family be surveyed with the requisite care. Without hyperbole we may say, the harvest is great and the labourers are few; there is consequently much temptation to abridge the labour; but truth must be attained at whatever cost—error must be exposed at whatever sacrifice.

Vastly more extensive data must be collected than has hitherto been deemed necessary, and vastly more care must be exercised in collating these data. In all lands the heads of the living, as well as the crania of the dead, must be measured. The latter alone have as yet been noticed; in defiance of the fact, that the latter can never be fully understood without minute comparison with the former. We are little prepared to judge of an extinct race, or even to know that it is extinct, except we are able to compare minutely the supposed extinct with the living races. The living as well as the dead, therefore, the civilized and the savage race, nation, tribe, and community: age, sex, and section; the high and the low, the rich and the poor, the virtuous and the vicious, the wise and the foolish, must be collated and classified, in order to see the true nature and importance of the subject before us.

To do this work other minds are needed than either the philosophers who reached maturity at seven years of age, or the phrenologists who like to boast of filling their coffers by their devotion to science. They who would solve such problems must make light of losses; must risk even health and life itself. The dwellers in the city and the desert, the equatorial jungles and the polar snows, the dens of vice and hovels of wretchedness, filth and disease, may not be surveyed without certainty of loss and sacrifices of many kinds, but science will not therefore want servants when the work is seen.

I have discussed what may be called the previous questions at greater length than would have otherwise been warranted, from the consideration that the importance of the subject is seen and acted on both by scientific societies and individuals. But, though recognized, the investigations as hitherto conducted are good for nothing, saving perhaps so much done in the way of exhausting errors. Instead of seeing science advancing, we witness the painful spectacle of talents of a high order wasted and time spent in teaching error in the semblance of truth.

Dr. Frederick Tiedemann, Professor of Anatomy and Physiology in the University of Heidelberg, undertook an elaborate series of investigations with a view to discover the

relative size of the negro brain. He visited the principal museums of Europe, measuring all the crania of whose authenticity he was satisfied. His researches were presented and read to the Royal Society (London), on the 16th June, 1836, and they occupy full thirty pages and five plates in the Philosophical Transactions for that year. He drew the inference that the negro brain is not inferior to that of the European. His production was highly prized and praised at the time as satisfactory and conclusive. On a more deliberate inspection, however, we discover, 1st. That he represents all the races of men by 250 crania; a quantity barely sufficient for one age of one sex of one nation. 2nd. That his mode of measuring the crania (by filling them with millet-seeds) was defective. 3rd. That he classed all above seven years old as mature. And 4th. That, granting the accuracy of his data, the European brain, by his tables, averages 111 cubic inches, the negro 102, consequently his own premises refute his conclusions.

Dr. S. G. Morton, of Philadelphia, U.S., conducted an extensive series of investigations of national crania, chiefly American, Egyptian, and negro tribes. His *Crania Americana* is a splended folio volume, with many finely-executed plates on a large scale. He presented a condensed view of his labours to the Academy of Natural Science in the city where he resides, and the paper is published in the *Edinburgh New Philosophical Journal*, April, 1850. His mode of measurement (by lead-shot) was good, but he committed several fatal errors. 1st. He represents all the human race by 623 crania; a number little more than sufficient, in the present state of knowledge, for one age of both sexes of a single nation. 2nd. He classes all above sixteen years as mature. And 3rd. He does not distinguish the sexes.

Sir William Hamilton, Professor of Logic and Metaphysics in the University of Edinburgh, has, we are told, "been long engaged in researches into the natural history of the brain of man." He has gauged crania, weighed brains, and measured living heads from infancy to "maturity." He gives the results of his researches as remarks on Dr. Morton's tables in the same number of the same journal. In that paper he appears equally remarkable for what he does, and what he does not, state, for trifling with truth in collecting facts, for boundless confidence in drawing conclusions, and unmitigated dogmatism in detailing discoveries: but as it lies right in our way, we cannot avoid a passing notice.

We read p. 331.—"Dr. Morton's conclusions, as to the comparative size of the negro brain, are contrary to Tiedemann's

larger, and to my smaller, induction, which concur in proving that the negro encephalos is not less then the European."

Note.—Tiedemann refutes himself as we have just seen, and of course refutes Sir William Hamilton also, and confirms Morton in this particular.

Page 332.—"Dr. Morton's method of measuring crania is certainly no 'invention' of his friend, Mr. Philips, being in either form only a clumsy and unsatisfactory modification of mine. . . . I found that pure silicious sand was the best mean of accomplishing the purpose, from its suitable ponderosity, incompressibility, and equality of weight in all weathers."

Note.—The suitability of any substance for such a purpose is chiefly determined by the facility with which it packs with the least possible care into the least possible space.

Experiment.—Take a smooth vessel of known capacity, say a tube of glass, ten inches long by one or more wide, filled deliberately with a liquid, such as water or mercury; no shaking or tapping will compress the liquid in less space. Filled in like manner with seeds, they pack into an inch and a half less space of such a tube; sand packs about one inch; and leaden shot, not more than three-eighths of an inch. Hence the first and the last are by far the most suitable substances. It is not easy to believe that Sir William could write as he did, without having tested the facts; and still less easy to suppose that he bungled so simple an experiment. Yet we must either believe the one or the other of these, or accept a much more disreputable alternative.

Page 332-3.—"By weighing the brain of a young and healthy convict who was hanged; and afterwards weighing the sand which the prepared cranium contained, I determined the proportion of the specific gravity of the cerebral matter (which in all ages and animals, is nearly [nearly; how beautifully vague] equal) to the specific gravity of the sand which was employed. I thus obtained a formula by which to recover the original weight of the encephalos in all the crania which were fitted; and hereby brought brains weighed, and skulls gauged, into universal relation. On the contrary, the comparisons of Tiedemann and Morton, as they stand, are limited to their own tables. I have once and again [that is twice of course] tested the accuracy of this process by experiment on the lower animals, and have thus *perfect confidence in the accuracy of the results,* [the italics are put by me to mark the passage], be the problem to recover the weight of the encephalos from the cranium of a sparrow, or from the cranium of an elephant."

Note.—So far is it from true that the specific gravity of the cerebral substance is the same in all ages and animals, that I possess twice the number of facts given by Sir William, tending to shew that in the same age of the same animal (viz. man,) brains of the same size differ in weight to the extent of several ounces. But passing over this, the important fact to be noticed is, that *three* experiments were held sufficient to establish "his perfect confidence in the accuracy of the results," and justify so sweeping conclusions. Without this information, the next paragraph, which is the most important to us, would have been much more mysterious than it now is.

Page 333.—"I have now established apart from the proof by averages, *that the human encephalos does not increase after the age of seven at highest.* This has been done by measuring the heads of the same young persons from infancy to adolescence and maturity, for the slight increase of the size of the head after seven (or six) is exhausted by the development to be allowed for bones, muscles, integuments and hair."

Note.—As Sir William does not say how many young persons he measured from birth to maturity, we are bound by the context to believe that he repeated the experiment "once and again," and has "perfect confidence in his accuracy. It is highly probable that some reach maturity at an earlier age then others. I have long suspected that, in many of the labouring population who exercise their mental powers to the least possible extent, the growth of the brain stops perhaps ten or fifteen years earlier than in the active minded of the upper classes. But if there is a single family in this country who reached cerebral maturity at six, seven, or eight years of age, it is a phenomenon which I would go a good few miles to witness. It is quite unparallelled in my experience, and, consequently, I have reached very different conclusions. The fact of including the hair in the measurement of the head is a marked feature in scientific precision. Measured in that way the head certainly attains its maximum, if not its maturity, at an early age. The luxuriant locks of the boy of six, or the lad of sixteen, tell well on the tape line, compared with the "bald pate" of the man of sixty. With this specimen of accurate observation before us, the bungled experiments with sand, seeds, and shot, become "nearly" credible. As he tells us neither the age, sex, nor number of his examples measured, nor the measures of the head, bone, muscles, integuments, nor hair of any one of them, he leaves us no room to reason with him. Fortunately the "slight increase" after seven is so great as to leave little room for dispute about the matter.

But with all the light on the art of philosophizing which the professor of logic has favoured us with, I am unable to see my way through the "ridiculous blunder made by Dr. Sims in his valuable paper and correlative table of the weight of 253 brains," in which he "attacks the results of my observations." Dr. Sims in his table *(Medico Chirur. Trans.* vol. xix.) did not separate the sexes, and found "the average weight of the brain goes on increasing from one year old to twenty." Sir William separated the sexes, and tells us that "his (Dr. Sims's) table, when properly arranged, confutes himself, and superfluously confirms me. This is comparing the girls with the woman [*comparing sixteen cases, between two and seven years, average* FORTY *ozz. with fifty-three cases between ten and fifty, average* FORTY-FOUR and a HALF *ozz.*] and the boys with the men [*four cases from two to seven, average* FORTY-TWO *ozz., and thirty-nine cases, between ten and fifty, average* FORTY-EIGHT *ozz., "nearly"*] it appears from his own induction, that the cranial contents do reach the average amount even before the age of seven."

I "give up the case." It may be possible by some dexterous manœuvering with very large brains, which occur "once and again in the table, *(a boy of six, is forty-nine ozz., being more than the man at fifty, and three girls under six years, are above the average woman)* to obtain superfluous confirmation; but in what way, I cannot tell; neither can I tell why he overlooks the more recent, more extensive, and much more appropriate investigations (for Scottish averages) carried on in his own city, and published some three and a half years before his paper appeared.

Dr. REID, and his successor in office, Dr. PEACOCK, collected the weights of 356 brains in the Royal Infirmary of Edinburgh, in 1843 and preceding years. The results of their combined labours were published in the *Journal of Medical Science,* Sept. 1846. The following are their general results up to fifty years of age:—

AVERAGE WEIGHTS OF BRAINS.

MALE.			FEMALE.		
Years.	No. of Cases.	Ounces.	Years.	No. of Cases.	Ounces.
2 to 5	5	43	2 to 5	8	37
5 to 7	4	43	5 to 7	4	38
7 to 10	6	46	7 to 10	4	41
10 to 13	4	50	—	—	—
13 to 16	5	47	—	—	—
16 to 20	8	51	16 to 20	13	45
20 to 25	16	52	20 to 25	13	47
25 to 30	24	49	25 to 30	13	43
30 to 40	41	51	30 to 40	33	45
40 to 50	44	49	40 to 50	23	45

We here see increase in weight till past twenty years of age. The apparent diminution between that and fifty I need hardly say is fallacious. It would be easy to shew, from what we know of the laws of grouping, that there is an excess of small brains after twenty-five years; but I think it unnecessary. The cases collected are far too few as yet for trustworthy results, even were they otherwise unexceptionable.

Having sketched the work to be done, and what has been done, I have next to submit a different class of evidence.

District and people surveyed.—On the ethnographic map of Europe, by Dr. Gustaf Kombst, turning the eye to Scotland, a band of deep yellow tinge is seen stretching along the east coast, from the Firth of Forth northwards over the Orkney and Shetland Islands. The band touches the German Ocean, and spreads inland some thirty or forty miles from the Forth to the Spey. From that northward the band is irregular, narrow and broken, seldom exceeding eight or ten miles in breadth. It is over this district that my survey extends. The yellow band marks a tolerably homogeneous mixture of Norman, Dane, and Celtic blood. The district includes the towns of Dundee, Montrose, Banff, Elgin, Forres, and others of less note. From the banks of the Tay north to the Spey, the race is more highly Norman than in the vales of the Lossie, the Findhorn, the Nairn, and farther north and west. In Elgin and Forres the preponderance of clan surnames and Celtic accent are so marked, that I have used the cases collected there but sparingly in my averages, and have excluded the population beyond the Nairn. My purpose in this is to preserve the classification of race as pure as possible for future comparison, when the other districts of Scotland are surveyed. The district south of the Forth and Clyde is tinged a paler yellow on the map. It includes Edinburgh, Glasgow, Dumfries, Hawick, Kelso, &c., and is said to contain a greater mixture of Saxon blood. Judging from what I have seen of that district, I do not anticipate that the averages will differ in any important particular from those I have obtained. But in this I may be mistaken, and purposely avoid foreclosing the question. The third and last ethnological district of Scotland extends from the Clyde northwards, including the Highlands and western islands. It is tinged slightly blue on the map, indicating a population of Celtic origin. In this district the average head is probably a few inches less than in the other districts; but, though the space be large, the population is widely scattered, so that when they are included they will not reduce the general average beyond one or two inches at most. We have no such variety in average size in Scotland

as is said to exist in England. The hat-merchants, our only authorities as yet, indicate 80 inches to 110 cubic inches as common sizes in Spitalfields, Coventry, Essex, Hertford, Suffolk, and Norfolk. I now reject the statement as quite incredible; Devonshire and Hertfordshire are said to average above London; and Lancashire, Yorkshire, Cumberland, and Northumberland to range still higher. Let us hope our friends south of the Tweed will soon see the importance of such problems, and furnish the solutions.

The deep yellow band covers about one million, in round numbers, of the two and a half millions composing the population of Scotland. My investigations include both the town and rural population of the district. The million of people are represented in my averages by above 5,000 cases. I visited schools, hospitals, jails, &c., and took every opportunity of including all classes in my survey.

Measurement and record.—I measure two series of homologous lines in every case. The first series of eight lines is specified in my "Contributions," page 3, and from these I obtain the cubic size.

The second series of forty lines gives the shape as well as the size of the head; so that the one forms a check upon the other in practice. I defer specifying the second series until an after period, when I discuss shape of head more fully.

After I had discovered the average type of head of both sexes at all ages, I found it unnecessary to measure all the lines in every case. In ordinary cases I often found that from two or three lines I could say with certainty to a tenth of an inch what all the others were. But even then in no case tabulated did I measure less than twenty, and seldom less than thirty-five lines. I always lay aside the hair, and press the instrument firmly to the skin at the anatomical points of the cranium selected as suitable, and by which I am always guided. In general I have an assistant writing what I read from the scale, the instant the measurement is taken; in this way time and labour are economized, and greater accuracy secured. I also classify the ages and sexes at once; each measurement in its appropriate column, so that a glance of the eye detects any remarkable deviation from the usual proportions; and, if error is suspected, the measure is repeated, and the error, if any, detected and corrected.

As the disputed period of maturity has chiefly been between the sixth and sixteenth year, I have been, if possible, more particular with that than any other time. None of the following averages for that, and very few for other periods,

are based on less than one hundred cases of each sex at each age given, and frequently on many more.

A detail of the vast mass of data collected is of course quite impossible here, I must therefore limit myself to a table of general results.

Age.	Male. Average.	Min.	Max.	Range.	Female. Average.	Min.	Max.	Range.
7 days	38 ..	28 to	48	= 20	34 ..	25 to	43	= 18
7 mons.	75 ..	55 to	95	= 40	68 ..	50 to	86	= 36
1 year	84 ..	62 to	106	= 44	75 ..	55 to	94	= 39
2 „	90 ..	66 to	114	= 48	81 ..	60 to	105	= 45
3 „	96 ..	71 to	122	= 51	87 ..	64 to	111	= 47
4 „	102 ..	75 to	129	= 54	92 ..	67 to	116	= 49
5 „	107 ..	78 to	135	= 57	96 ..	70 to	122	= 51
6 „	111 ..	81 to	140	= 59	100 ..	73 to	126	= 52
7 „	114 ..	83 to	143	= 60	102 ..	76 to	129	= 53
8 „	116 ..	85 to	146	= 61	104 ..	78 to	131	= 53
9 „	118 ..	87 to	148	= 62	106 ..	80 to	134	= 54
10 „	120 ..	88 to	151	= 63	108 ..	81 to	136	= 55
12 „	125 ..	92 to	158	= 66	113 ..	83 to	142	= 59
15 „	130 ..	95 to	165	= 70	117 ..	86 to	147	= 61
18 „	135 ..	99 to	171	= 72	122 ..	90 to	153	= 63
21 „	140 ..	102 to	177	= 75	126 ..	94 to	158	= 64
30 „	145 ..	106 to	184	= 78	131 ..	97 to	165	= 67
50 „	150 ..	110 to	190	= 80	135 ..	100 to	170	= 70
Increas.	112	82	142	60	101	75	127	52

Except the ages, all the above numbers represent cubic inches.

Of the many particulars brought into view by the table, I can at present notice only a few of the most obvious.

First.—The size of the female ranges less than that of the male head at all ages.

Second.—Progressive size is obvious from birth upwards.

Though I have not gone beyond fifty years in the table, it must not be from that inferred that there is no advance in any individual or class of cases after the fiftieth year; on the contrary, my tables shew progress to a later period, but after the *thirtieth* year the advance on the average is so slow as to justify the supposition that in many individual cases there is no progress. And farther, a very slight preponderance of either the higher or lower sections influence the averages to some extent; they therefore require to be balanced with great care, and verified again and again before certainty is obtained.

Third.—The progress is rapid at first, and gradually becomes more and more slow as age advances.

The size during the first week is doubled in the seventh

month, and the progress is rapid during the whole of the first year. In the second, third, and fourth years, it is about six inches per annum. The rate then sinks to five, four, and three inches, and after the seventh year there is a very uniform increase of two inches till the twentieth or twenty-first year, after which the advance is very slow.

It curiously enough appears to be the fact that rate of increase may be expressed by a simple formula, which is very easily remembered; viz., that the size of the head within seven days after birth is doubled in the seventh month, tripled in the seventh year, and quadrupled in seven times seven years.

Fourth.—The rate of progress is in proportion to the size of the head. The smallest female, advancing from 25 at birth to 100 inches at fifty years, is similar in proportion to the largest male advancing from 48 to 190 inches.

This uniform rate in proportion to the size of the head renders it easy to say of any head of either sex, at any age, what it has been, and what it in average circumstances will be, at all ages embraced by the table.

Knowing the average rate of increase of all sizes at all ages, we are now in condition to grapple with the important questions of influence of circumstances in modifying either by increasing or diminishing the rate in individual cases. And we have seen by the instance of the ragged-schools noticed in classification of sections, that circumstances do exercise a very important influence, not on individuals only, but on whole classes or groups of cases.

Fifth.—In consequence of the rate of increase being in proportion to the size, the laws of grouping are different at different ages: the cluster is constantly lengthening on the scale so to speak. The columns of the table, headed "range," shew the length of the group. This at the earliest female age is only 18 inches, at the latest age of the male the group is 80 inches of the scale.

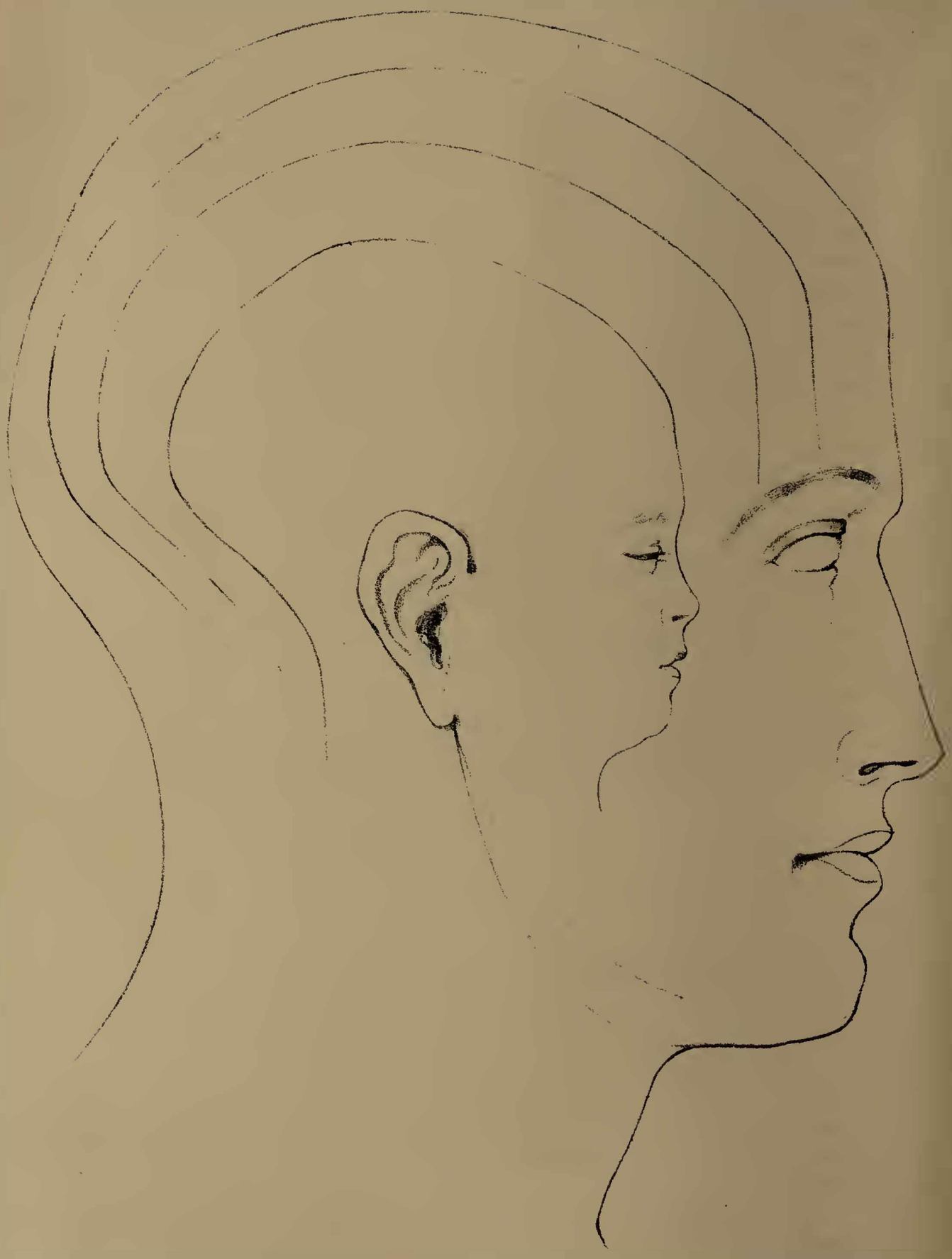
Here again let it not be inferred that the table shews the very largest and smallest heads to be found; though either larger or smaller cases are very rare, they do sometimes occur.

There are male heads in existence considerably above 200 inches; and, on the other hand, there are both male and female cases (idiots) so low as 20 to 30 inches at twenty or thirty years of age; but the table shews a normal range which is very rarely exceeded.

Neither must it be inferred that the rate of increase of all parts of the same head is to the same extent, and during the same period of time. This leads us to the element of shape

PLATE II

CEREBRAL DEVELOPMENT LAWS OF PROGRESSION.



STRATON'S RESEARCHES.

to face Page 425.

at all ages, a subject which I can only touch in the meantime, and leave for future consideration.

Shape or form.—The most efficient way of conveying a few general ideas of changes in form, or development of parts which take in the progress from infancy to maturity, is by an illustration, and Plate II. is given for that purpose. The plate shews four geometrical outlines of the lateral perpendicular section of the average male head, on a scale of half the natural linear dimensions. The figures represent the head at the respective periods of seven days, seven months, seven years, and fifty years of age. With very slight consideration it will be seen that the shape is gradually changing from the earliest to the latest period. In the infant outline the larger mass of brain is seen to be upward and backward from the external opening of the ear. In the mature the shape is very much the reverse of the infant, the larger portion of brain is upward and forward from the ear. These characteristics are so constant and so marked, that I think it hardly possible to compare any infant with a mature head and not recognize the general distinctions. The growth or expansion of the different parts may be judged of by the spaces or distances between each of the outlines, particularly between the inner and the outer figures. Upward and forward it will be seen that the intervening space is greater than backward. I may farther add, that the parts upward and backward from the ear attain maturity at or before the thirtieth year, but the upper and fore parts increase, in a portion of the community, at least till past the fiftieth year.

One of the greatest, if not the greatest, practical benefit of the table we have obtained, is, that in it we are furnished with a SCALE suitable to every purpose for which we require one,—a scale graduated by nature, each term the language of science, of definite, positive, invariable, meaning and known value,—a scale equally suitable to express the development and power of the whole cerebral mass, however large, and of each part, however small.

The application of the scale to represent the size, in other words, the development and power of the brain as a whole, is already obvious; the farther application to represent those of the parts, regions, or organs, will soon be equally obvious.

In any head of any size, from 20 inches or less to 200 or more, if all the parts are in equal balance proportion, then the same term which represents the size—the development of the whole—may with perfect propriety be used to express the development of each part. If 50 inches be the *size* of the

head, then the term "50" attached to each and all of the organs shews that they are developed to precisely that extent, or equal balance proportion. If 150 is the development of the whole, then "150" represents that of each part, and so with all other numbers.

Let it be remembered, that it is the *extent of development* of the parts (not the size, the inches and fractions) which it is essential to record. The development must be obtained by measurement, because the scale precludes the estimate of the eye and the hand, but the size is not useful except as the data of development. The sizes of the organs of an equally-balanced head are very different, but the degrees of development are one and the same. It is *the development*, not the size, which is *the measure of power*, and this is what we must record in all cases.

If the head is unequally balanced, as most heads are, the application of the scale is equally simple; the development of each organ is indicated by the size of the equally-balanced head to which the part corresponds. Let a given case measure 120 inches; the parts which are in equal balance proportion are marked "120," the less developed parts are equal to the corresponding organs of head of 110, 100, 90 inches, or less, while those more developed correspond to 130, 140, 145, or more, and are to be recorded as such.

A few examples will best illustrate the suitability of the table as a scale of development and concomitant power. With these (page 427) and one or two remarks I must close for a time.

The development of each part is, I repeat, obtained by measurement. Of course the average of the parts corresponds to the size of the head obtained by an independent series of measurements; we have therefore a check and test of accuracy. The average is obtained by grouping the parts into clusters of *equal size* (the organs are of very unequal size in all cases), and then taking the average of the clusters; to this the regions *(Contributions,* p. 28) form a convenient guide. The anterior may form one cluster, the coronal three, the posterior three, and the lateral two. The average of these nine parts will give the size of the head in all, except some rare cases of very unequal balance, and to which more minute grouping must be applied.

The examples given differ from all other modes of stating development in the essential particular that the positive or absolute development (not the relative merely) of each organ is indicated, and, as the absolute development is the measure of the power or capability of each part, it is the first thing to

Examples.

		1	2	3	4	5	6	7	8	9	10
	ORGANS.	Male—Ten Years of Age.					Fifty Years of Age.				Fem.
		P. G.	Average.	Superior.	Criminal.	J. M.	P. G.	Average.	Superior.	Criminal.	J. B.
Propensities.	1. Amativeness	110	120	120	140	105	140	150	150	190	150
	2. Philoprogenitiveness	140	130	130	125	95	160	150	160	150	120
	3. Concentrativeness	110	125	130	125	80	130	150	160	140	120
	4. Adhesiveness	110	120	125	120	80	140	150	150	150	130
	5. Combativeness	110	125	125	145	85	140	150	150	180	140
	6. Destructiveness	110	125	125	150	85	140	150	150	190	140
	7. Secretiveness	110	125	125	145	95	140	150	150	180	140
	8. Acquisitiveness	110	125	125	145	105	140	155	155	180	140
	9. Constructiveness	115	120	120	120	105	145	150	150	150	130
Inferior Sentiments.	10. Self-esteem	120	130	130	130	85	160	160	160	155	100
	11. Love of Approbation	100	120	120	115	95	140	140	140	135	100
	12. Cautiousness	100	130	130	120	95	140	155	160	150	100
Superior Sentiments.	13. Benevolence	120	115	130	100	75	160	155	180	130	110
	14. Veneration	130	120	130	105	75	155	155	180	140	120
	15. Firmness	130	130	130	125	85	165	155	180	145	130
	16. Conscientiousness	125	125	130	110	80	150	150	170	140	110
	17. Hope	120	120	130	110	75	155	145	160	130	120
	18. Wonder	125	115	130	110	75	165	145	160	125	120
	19. Ideality	125	115	130	100	80	155	145	160	120	100
	20. Wit	110	115	130	100	95	145	145	160	120	100
	21. Imitation	120	115	130	100	85	155	145	160	120	100
Perceptive of Matter.	22. Individuality	125	110	130	105	135	175	155	180	150	140
	23. Form	125	110	130	105	150	170	150	180	150	135
	24. Size	125	110	130	105	150	170	150	180	150	130
	25. Weight	120	110	130	105	120	160	150	180	145	130
	26. Colour	115	110	130	105	120	155	140	170	145	120
	27. Locality	125	110	130	105	120	160	150	180	150	120
	28. Number	125	110	130	100	110	160	150	170	140	120
	29. Order	110	110	130	100	110	150	140	170	140	120
Perceptive of Motion.	30. Eventuality	125	115	130	110	135	170	145	170	150	120
	31. Time	120	115	130	100	115	165	150	180	140	110
	32. Tune	120	115	130	100	105	165	140	170	140	110
Reflective Faculties.	33. Language	110	110	130	105	110	150	150	170	140	120
	34. Comparison	110	110	130	100	105	155	155	190	130	110
	35. Causality	110	110	130	100	105	155	155	190	120	110

be noticed in all cases. In one of the examples of ten years of age (column 5, J. M.) some organs are seen to be as little developed (75) as the corresponding parts of the average infant of seven months; others again only equal the average of twelve months, while one or two of the perceptive organs equal the average of fifty years.

The positive development being given, the relative, which is the difference between the positive degrees, and which is the measure of *tendency*, is seen at a glance. The moral tendency is indicated and measured by the difference of positive; in other words, by the relative development of the propensities and sentiments. In cols. 3 and 8, the sentiments are much above the propensities in development, whilst in cols. 4 and 9, the propensities far exceed the sentiments; in cols. 2 and 7, there is a near approach to the equal balance. The intellectual tendency is indicated and measured by the balance of the perceptive and reflecting organs.

Cols. 3 and 8, represent the balance of the higher classes in the best sense of the term; they are the leading minds in science, literature, art, commerce, manufacture, &c. The anterior and coronal regions preponderate, and the same balance is found in all sizes of heads.

Cols. 4 and 9, show a balance very much the reverse of the preceding columns. The propensities are up to the highest male development, while the sentiments and intellect, particularly the refining sentiments and reflecting organs, are down to the average of ten years. The type is found in every variety of size, and varied in balance also, from the average male to the lowest criminal cast or cranium in our museums. The class is numerous and well marked in the unscrupulous energy which they manifest to obtain the means of physical enjoyment.

They are found in all classes of society and all conditions of life. The leading speculator "doctoring" his balance-sheets, and "gingering" his lines; the M.P. purchasing a seat in St. Stephen's; the parson buying a benefice "for the glory of God and the good of souls," "with light duties, in a fine county, and select society;" the sturdy beggar demanding, with threatening scowl, alms from the timid maid; and the still more sturdy thief, "taking a benefit" without leave either asked or given, are specimen links from opposite ends of the chain.

Cols. 5 and 10, are individual cases to contrast and illustrate the capabilities of the scale.

Col. 5, J. M., is a rare case of idiocy from defective development of both propensities and sentiments; the more com-

mon form being either defect of the whole, or of the anterior and upper parts, of the brain. In this case (a boy of 10 years) the propensities range from 80 (the average of 9 months old) to 105, which is only equal to the corresponding organs in the average boy of less than 5 years. The sentiments range from 75 (average of 7 months) to 95,—the average at 3 years. The reflecting organs are about the average at 5 years, and the perceptive range from 110 (average at 10) to 150,—the average of maturity. When I saw the boy, he had made fair progress for his age and time at school in acquiring knowledge; but, except the defective parts increase at much more than the average rate, he will when he reaches manhood be very much in the predicament of a machine without motive power; an engine without steam.

Col. 10, J. B., a female about 30 years of age, exhibits all the characteristics of the criminal type. The propensities are above the female average at maturity, while the sentiments only equal the female average at 6, 8, and 10 years. Even the inferior sentiments, rarely defective in the male criminal, and still more rarely in the female, are in this case down to the average of 6 years. J. B had been 76 times in jail before I saw her; a few days out and a few months in, is her usual routine.

Cols. 1 and 6. Of P. G., my specimen case throughout, I could say much with pleasure, did space permit; fortunately little is needed for my present purpose. At both ages the close resemblance to the superior class cannot be mistaken, and a fine temperament raised the power higher than I have shewn it. The talents and tendencies were completely in harmony with the development. The circumstances of his parents gave him the choice of a profession. He would be a mechanic; in this, he is another of the many instances in which the whim of the boy belied the tastes of the future man.

When about 30 years of age, a bequest from a friend placed P. G. in comfortable circumstances for life; from that period every waking moment of his existence was devoted to science and literature; his favourite studies were chemistry, geology, mineralogy and natural history, particularly the microscopic departments of the latter; he read Latin, French, German and Italian. The relaxations of his leisure hours were such "light literature" as the leading Quarterlies; these he generally read throughout. Unfortunately he was too ardent a learner to assume the office of teacher, and he carried his vast and varied store of knowledge to the grave with him. He died a few months ago, at the age of 50 years, deeply regretted by a wide circle of friends, in whose memory

the name of Peter Grant will ever be associated with a most ardent love of truth for its own sake, with elevated sentiment, refined feeling, and a moral character of spotless purity.

Aberdeen, November, 1850.

XVI. *Researches on Magnetism, Electricity, Heat, Light, Crystallization, and Chemical Attraction, in their relations to the Vital Force.* By Karl, Baron Von Reichenbach, P.H., D.R. Translated and edited, at the express desire of the Author, with a Preface, Notes, and Appendix, by William Gregory, M.D., F.R.S.E., Professor of Chemistry in the University of Edinburgh. With three Plates and twenty-three Woodcuts. Parts I. and II., including the Second Edition of the First Part, corrected and improved. [London: Taylor, Walton and Maberley, Upper Gower Street, and Ivy Lane, Paternoster Row. Edinburgh: McLachlan and Stewart. 1850.]

Physico-Physiological Researches on the Dynamics of Magnetism, Electricity, Heat, Light, Crystallization, and Chemism, in their relations to Vital Force. By Baron Charles Von Reichenbach. The complete work from the German Second Edition. With the addition of a Preface and Critical Notes, by John Ashburner, M.D. [London: Hippolyte Bailliere, 219, Regent Street, and 169, Fulton Street, New York, U.S. Paris: J. B. Bailliere, Rue Hautefeuille. Madrid: Bailly Bailliere, Calle del Principe. 1851.]

It is a good sign for the cause of mesmerism when the public finds itself supplied with two translations of a remarkable work by the distinguished Baron Von Reichenbach. We sincerely wish very ample success to both of them, and should be rejoiced to learn that each had arrived at a market which eagerly demanded a new edition. We have given the full titles of these translations, for, if there were any truth in the report that the scientific author was dissatisfied with his first appearance before the British public in the form of an "abstract," he will now have ample cause to be content with the effort made by one translator to shew him as near as possible in the strict likeness of himself, and with that of the other to clothe him in a free and easy flowing English dress. We believe each translation to be good. One mistake, it appears to us, has been made by Dr. Gregory, in coining the word *odyle*, which occurs nowhere in the original. If such a word had been intended to convey a chemical meaning, it was

singularly inappropriate, for the termination *yle* would refer, by analogy, to *amyle, ethyle, formyle,* &c., a special kind of bodies, belonging to organic chemistry, and to which the special nomenclature should be confined. It is in Paragraph 215 of the First Part, the last of the sixth treatise, that the Baron Von Reichenbach gives his reasons for a new name to that force which, in fact, in the hands of Mesmer, had obtained the designation of the universal fluid; and there is something amounting to almost an expressed injunction to use the word *od,* a monosyllabic term, by no means involving the hypothesis which belongs to substances either ascertained or supposed to exist, and forming the radicals from which a series of compounds is produced by combination with other substances. The termination *yle* applied to *od,* is clearly a hasty error on the part of Professor Gregory, who must on consideration have been aware that the word *odyle* would convey to the chemist the idea of an organic radical, formed of two or more of the elements hydrogen, carbon, nitrogen, and oxygen, and would thus superadd a notion not advanced by Reichenbach. We venture to regard this word as not an unimportant *liberty* taken with the author's text, although we do not intend to found upon it any controversy as to the claims of those who have thought it but justice to the memory of an original thinker to term a science Mesmerism, after the name of an author who, whatever were the disproportions of certain organs of his brain, threw forth to the world ideas which were the foundation of perhaps the most important truths that can occupy the thoughts of man.

In other respects the edition of Dr. Gregory is a highly creditable publication, and the preface is written in a style and a spirit which are most refreshing. There is a charm about the manner and the sentiment of the learned Professor that must captivate the attention of every reader. In these observations it is not our intention in any way to disparage the rival edition produced by the enterprise of our publisher, Mr. Bailliere, who has put forth a very handsome volume, most conveniently illustrated, and admirably printed in a clear type. We have one observation to make on this edition in reference to the title-page. A mistake having occurred in the motto at the back of this page, the leaf was very properly cancelled; but in giving a new title-page with the Second Part, a slip of paper should have indicated to the purchaser the cause of the error, and given a direction as to the binding of the correct copy. We were at a loss to understand, in comparing the two editions, why one should cost half-a-crown more than the other. The greater handsomeness of Mr. Bailliere's

volume would not be a sufficient reason for the difference of price, which however is soon accounted for when we reflect upon the copious notes by Dr. Ashburner. The Professor's notes and appendix taken together would occupy no more than about eight pages of letter-press, whereas Dr. Ashburner's would, in small type, take up the space of seventy-eight pages. The present number of *The Zoist* allows us but a small space for a notice of the contents of the important work of the Baron Von Reichenbach; but this is less to be regretted, since an ample account of the matter contained in the First Part was written by Dr. Elliotson in our fourth volume, upon the appearance of the very able and interesting abstract of the first German edition of the First Part, which was given to the English public in the year 1846; a work which was so well received, that in a very short space of time not a copy was to be procured in London at double its published price. When the Second Part of Von Reichenbach's work appeared in Germany in 1849, the First Part having, as a first edition, been originally a supplement to a periodical (Liebig's *Annalen der Chemic),* the author prefixed to it a second edition of his First Part, and it is of these two parts that the present English editions consist.

It is almost needless to state here that the Researches published in the First Part tend to the establishment of a force, considered by the Baron to be new, but which is, by implication, if we mistake not, claimed by Dr. Ashburner, notwithstanding an almost extravagant admiration of the Baron's powers of long-patient and logical habit of investigation, as the force said to have been discovered by Mesmer, but which is in fact of a date much anterior to his period; as is proved by one of Mesmer's severest commentators and opponents, Thouret, *(Recherches et Doutes sur le Magnétisme Animal,* 1784), who quotes the works of Maxwell and Santanelli to shew that, even in the seventeenth century, the idea of an *universal fluid* had been promulgated, and that strong analogies existed between this idea and the views of ancient magnetism shared by Paracelsus, Kircher, and others. Becker's expressions, "Anima mundi magneticæ illius facultatis vector, &c. . . . Spiritus mundi universalis omnia perlustrans," are examples of the same thoughts. The speculations in which Maxwell indulged are not altogether unlike some things in Reichenbach and the notions Dr. Ashburner would appear to have of subjects just as much beyond our present reach, except that the latter makes an effort to determine the materiality of all the forces which come under the cognizance of the philosophical physicist. Maxwell's words are, "Tam tenuis,

tam agilis, spiritualis, lucida, ætherea res. . . . Spiritus vitalis . . . totus ubique lucis instar sibi simillimus." Santanelli speaks even of "the *particles* of this spirit, so elastic and so mixed with other bodies, exilitate et minimitate, as to be nearest to the intellectual soul, which is a real immaterial spirit." *Immaterial particles!* We do not pretend that Reichenbach's force is not more logically, consecutively, illustrated by inductive experiments. It is our desire to shew only that, however isolated may be the facts of the thinkers of former times, the sources whence they drew their conclusions of an universal fluid were in many instances identical with those in the work under consideration; and, whatever be the name given to this agent, it is acknowledged to be the same which is productive of mesmeric phenomena.

This force, fluid, influence or power, is certainly shewn by the Baron to exist as an imponderable agent, having properties which distinguish it from heat, light, electricity, and magnetism, although associated with each other. It is a dynamic which pervades every object in nature, and hence perhaps not so inaptly termed the *universal fluid.*

Light, as ordinarily known, is not so subtle an imponderable as this force, although the comparative velocity of their motions under analogous conditions may admit of question. It is not a power that attracts iron, though it is associated with magnetism. It is found by the Baron that this force resides in the principal axis of crystals, and here it is demonstrated to exist clearly in a separate state, and unaccompanied by any agency which is capable of attracting iron. Notwithstanding all that the world appears for ages to have previously known of such a fluid, it comes upon us like a wonder, that the Baron has found this agent in all bodies,—in the living forms of organic fabrics and in substances without life; varying in degrees of manifestation; abundant in the human body, and developed in the various chemical actions of all organic nature—in animals and in plants. It is associated with the rays from the sun, moon, planets, and fixed stars. The Baron has a treatise to demonstrate its diffusion over the whole created universe. It is shed from the human hand, from the face, eyes, nostrils, lips, and lungs. Like electricity and magnetism, it has a positive and negative polarity. It is manifested by luminous phenomena, visible to such as are sensitive to these impressions, and they comprise, in the temperate latitudes, perhaps about one-third of mankind. These luminous phenomena are deeply interesting, and the relations of the experiments instituted by the Baron on this point are captivating to a high degree. Although their power

is of such feeble energy as to be rendered perceptible to persons of keen sensibility only in the ordinary state, when in perfect darkness; yet their characters are very beautiful, for they are attended by all the colours of the rainbow, under circumstances indicating remarkable laws.

It would appear that the highest degree of sensitiveness is not shared by the majority of keener sensibility than usual and who constitute one-third of mankind. Those keenly susceptible, in the highest degree, to the luminous emanations are more rare. Persons affected with nervous and spasmodic diseases; persons who are apt to walk or to talk in their sleep; persons who are cataleptic, or who are insane; are more commonly endowed with the requisite keenness. But this high condition of sensitiveness may be found in some individuals who, in the vague acceptation of those who do not severely define the meaning of words, are said to be in perfect health: in men as well as in women; in the old and in the young; in the married and in the single.

As far as the experience of the Baron has gone, this keen sensibility to the perception of the delicate phenomena is never absent in somnambulists. His researches on this point have been confined to such cases of spontaneous somnambulism as presented themselves among his subjects. Those individuals who were highly sensitive in their natural state invariably became still more intensely so when they fell into somnambulism.

After the Seventh Treatise, and at the end of the First Part, the Baron sums up his Researches by a conclusion admirably condensing the various portions of his investigation. Then, in his Second Part, he treats of the luminous emanations from magnets alone, in the fullest detail. The analogous phenomena of the lights of crystals, of the human body, and of all other substances, must be reserved for later portions of his work.

In the Introduction to Part Second, Baron Von Reichenbach first gives a *Catalogue Raisonné* of more than sixty subjects, sensitive in various degrees; of whom thirty-five are persons in full health, of all classes, and the remainder are partly persons suffering from actual diseases, partly those who are only sickly, feeble, or delicate. The observations of each of these persons on the light from magnets are there given, forming a body of evidence quite unique in such a subject, as the produce of one man's labours.

He next gives a detailed comparison of the *od* force with the known imponderables, electricity, magnetism, &c., to shew that, while analogous to all of them, it is yet quite as distinct

from all as they from each other, and that it must have a special name. But he points out that all these forces may one day be referred to a common origin: in which case the names now given to them will still be useful to designate the several groups of phenomena.

The Baron then proceeds to describe the light from magnets in detail; its various forms, such as glow, flame, luminous smoke or vapour, fibrous or downy light, &c. &c. He then goes on to its colours, and to the influence on these of the position of the magnets, and of the shape of the magnets, and this leads him through a most exquisitely beautiful series of phenomena, to the study of the light as seen in large and active magnets of a spherical form.

Here he produces the colours of the rainbow, which are always present in *odic* light in the perfect form and similitude of the Aurora Borealis and the Aurora Australis; and he concludes with an attempt to explain the Aurora of our earth on *odic* principles. This attempt must be regarded as so far satisfactory, that it infinitely surpasses all explanations of that appearance hitherto offered.

We have been compelled, by want of space to refrain from giving extracts from this remarkable work. Indeed, were we to begin, we should hardly know where to stop. We have therefore confined ourselves to a general sketch of the work, and we would conclude by saying that the reader will find the details of Baron Von Reichenbach's Researches deeply interesting, while he will discover that they give additional security and a new foundation to mesmeric truth. May we soon see more of these admirable Researches.

We hear that the Third Part is in preparation, and Professor Gregory, who is our informant, states that in it the Baron will treat of the effects of this imponderable on the human body more fully and specially, and, in doing so, he must enter into the subject of somnambulism, artificial as well as natural. The voluminous observations of nearly five years of constant labour on all parts of the immense subject of this new enquiry were all noted in his journals, as they occurred. It is no light task to bring them into a shape fit for publication, but we rejoice to know that the Baron is busily occupied with it.

BOOKS RECEIVED.

Researches on Magnetism, Electricity, Heat, Light, Crystallization, and Chemical Attraction, in their relations to the Vital Force. By Karl, Baron Von Reichenbach, P.H., D.R. Translated and edited, at the express desire of the Author, with a Preface, Notes, and Appendix, by William Gregory, M.D., F.R.S.E., Professor of Chemistry in the University of Edinburgh. With three plates and twenty-three wood-cuts. Parts I. and II., including the Second Edi-

tion of the First Part, corrected and improved. London: Taylor, Walton, and Maberly, Upper Gower Street, and Ivy Lane, Paternoster Row. Edinburgh: Mc Lachlan and Stewart. 1850.

Physico-Physiological Researches on the Dynamics of Magnetism, Electricity, Heat, Light, Crystallization, and Chemism, in their relations to Vital Force. By Baron Charles Von Reichenbach. The complete work from the German Second Edition. With the addition of a Preface, and Critical Notes, by John Ashburner, M.D., London. Hippolyte Baillière, 219, Regent Street, and 169, Fulton Street, New York, U.S. Paris: J. B. Baillière, Rue Hautefeuille. Madrid: Bailly Baillière, Calle del Principe. 1851.

The Passions of the Human Soul. By Charles Fourier. Translated from the French, by the Rev. John Reynell Morell. With Critical Annotations, a Biography of Fourier, and a general Introduction, by Hugh Doherty. Vols. I. and II. London: Hippolyte Baillière, 219, Regent Street. 1850.

Influence of Physical Agents on the Development of the Tadpole of the Triton and the Frog. By John Higginbottom, Hon. Fellow of the Royal College of Surgeons, England. From the Philosophical Transactions.

The Hand-book of Mesmerism, for the guidance and instruction of all persons who desire to practise Mesmerism for the Cure of Diseases, and to alleviate the sufferings of their fellow-creatures. To which is annexed, the Rules and Regulations of the Mesmeric Infirmary, No. 9, Bedford Street, Bedford Square, London; with a List of the Subscribers to it. By Thomas Buckland, late Secretary to the Mesmeric Infirmary. London: Hippolyte Baillière, 219, Regent Street.

*** We received a slip of the *New Monthly Belle Assemblée* containing a notice of this little book, and in the notice were the following paragraphs:—"From all we have seen and read on the subject, we should be inclined to define the 'mesmeric state' as that in which the senses are temporarily and spiritually separated from their organs, so that the former can exercise their office without the intervention of the latter. Those readers who wish to gain many useful hints and a great deal of practical information on the subject of mesmerism, cannot do better than refer to Mr. Buckland's 'Hand-book.'" The latter is true: the former unintelligible to our plain understandings and but common sense.

Dipple's Handbooks. Mesmerism: its Processes, Uses, and Advantages explained, with Directions for its Application in the sick chamber or the lecture room. By S. D. Saunders, Esq., late Hon. Secretary to the Bristol Mesmeric Institute, &c. London: Edwin Dipple, Strand.

*** For a penny, information is here afforded worth a pound, aye, and the shilling too which Dr. J. A. Wilson says his patients cheat him of so cruelly: see our last number, p. 280.

Woolmer's Exeter and Plymouth Gazette, Dec. 14, 1850.

*** This paper contains Mr. Janson's last letter, termed the Exeter Mesmeric Record, now annual, but from its former frequency the twenty-third. We lament that we have not room for it, and indeed for all the previous twenty-two. They are all excellent, and were formerly thundering, as it was fit they should be; but, since our adversaries are now yielding rapidly, the present is only philosophical and historical. It is extremely good, and we wish it were printed as a penny tract. Mr. Janson has fought the good fight valiantly and unceasingly for many years, and frequently advertized the best mesmeric books and *The Zoist* itself at his own expense.

Thoughts on the Nature of Man, the Propagation of Creeds, and the Formation of Human Character.

NOTICES TO CORRESPONDENTS.

The length of Mr. Straton's most important article, and the necessity of noticing Reichenbach's work, are our apology for deferring the interesting communications of several valued correspondents.

A Subscriber is informed that the word *biology* signifies a discourse on life, and is used synonymously sometimes with physiology, sometimes with biography.

END OF VOL. VIII.