

HUMAN NATURE:

A MONTHLY JOURNAL

OF

Zoistic Science, Intelligence, & Popular Anthropology,

EMBRACING

PHYSIOLOGY, PHRENOLOGY, PSYCHOLOGY,
SPIRITUALISM,

PHILOSOPHY, THE LAWS OF HEALTH, AND SOCIOLOGY.

CONTENTS.

Spinoza after Two Hundred Years—A few Remarks on the Head of Spinoza.

A Spiritual Thinker — Oersted — concluded—Religion.

"Worlds within Worlds; or, New Discoveries in Astronomy."

Chapters from the "Students' Manual of Magnetism" (from the French of Baron du Potet.)—Moral Effects—Somnambulism.

Communication from the Spirit "Wolfstad," an Ancient British Chieftain, through A. Duguid—continued.

Essays on Matter, Motion, and Resistance. By Joseph Hands, M.R.C.S.—Essay on Matter—continued.

Organic Magnetism as a Moral Healing Power.

A Work on the Phenomena of Spiritualism.

LONDON:

JAMES BURNS, PROGRESSIVE LIBRARY.

15, SOUTHAMPTON ROW, BLOOMSBURY SQUARE, HOLBORN, W.C.

ADVERTISEMENTS.

HUMAN NATURE, Vols. I., II., III., IV., V., VI., VII., VIII., IX., and X.,
Bound in Cloth, 7s. 6d. each.

Annual Subscription, 7s. post-free; To America, 8s., or \$2 in Gold.

SUBSCRIBERS TO THE *MEDIUM* FOR 1877 ARE ENTITLED TO
VOL. X. *HUMAN NATURE* FOR 1876 FOR 5s.

THE "MEDIUM AND DAYBREAK."

A Weekly Journal devoted to the History, Phenomena, Philosophy, and Teachings of Spiritualism. Published every Friday. Price 1½d.; Annual Subscription, 8s. 8d.

REPORT ON SPIRITUALISM OF THE COMMITTEE OF THE LONDON DIALECTICAL SOCIETY

For One Penny (by the dozen).

To be published on November 15th, in a Special Number of the *Medium*, the whole of the General Report, Reports of Sub-Committees, and Minutes of Experiments of the celebrated Inquiry into Spiritualism of the Committee appointed by the London Dialectical Society. Single Copy, 1½d.; 8s. per 100, Carriage paid; or 1s. per dozen post-free. It is expected that 100,000 copies will be sold.

Specimen Numbers of the MEDIUM for distribution sent to all parts of the world on application.

Now ready, price 2s. post free.

Leaves from *My Life*. By J. J. MORSE. Handsomely bound.

CONTENTS.

- CHAPTER I. Birth and Early Life.
" II. My Introduction to Spiritualism.
" III. My Public Mediumship and Position.
" IV. My First Appearance in the Provinces.
" V. I arrive in America.
" VI. Samples of American Mediumship.
" VII. A Spiritualists' Camp Meeting.
" VIII. Impressions of American Spiritualism.
" IX. Concerning People I met, Places I visited, and the Portrait of my chief Control.
" X. American Travelling—Nature of American Life and Social Customs—A few Americanisms—Conclusion.

LECTURES.

Spiritualism as an Aid to Human Progress.
Concerning the Spirit-world and What Men Know thereof.
The Physiology of Spiritualism.
The Order of Spiritual Teachers: its Need and Scope.

POEMS.

The Shadowy Army. The Power of Kindness. Spiritual Worship.

ILLUSTRATIONS.

Photograph of the Author.
Photograph of "Tien-Sien-Tie," Mr. Morse's spirit-guide, from a drawing by Anderson.

LONDON: J. BURNS, 15, SOUTHAMPTON ROW, W.C.

- 1872.—*May*. Hudson Tuttle's "Career of Religious Ideas" (2s. 6d.), both for 188.
- June*. Mr. Bielfield's artistic design of the "Ten Spiritual Commandments" (2s. 6d.), 1s. 6d.
- July*. "Dialectical Report on Spiritualism" (5s.), 3s. 6d.
- August*. Home's "Incidents in my Life," Vol. II. (10s. 6d.), post free 3s. 11d.
- September*. Dr. Nichols's "Esoteric Anthropology" (5s.), post free 3s. 6d.
- October*. Dr. Peebles' "Seers of the Ages" (5s.), price 3s. 6d.
- December*. Cooper's "Spiritual Experiences" (2s. 6d.), price 1s.
- 1874.—*August*. Judge Edmonds's "Letters and Tracts" (3s. 6d.), post free 2s.
- October*. "Anacalypsis," Part I. (2s. 6d.), post free 2s.
- November*. Dr. Nichols's "Human Physiology" (5s. 6d.), post free 4s. 6d.
- 1875.—*January*. "The Clock Struck Three" (6s.), price 3s.
- March*. "Miracles and Modern Spiritualism" (5s.), post free 3s. 10d.
- April*. Crookes's "Researches in Spiritualism," bound (5s.), post free 2s. 6d.
- July*. "Man," by J. W. Jackson (5s.), post free 3s. 10d.
- September*. "Anacalypsis," Part II. (2s. 6d.), price 2s.
- 1876.—*January*. "Bolt and Win: a Tale of the Olden Time when 'John Company' was King," post free 3s.
- March*. "Mrs. Tappan's Discourses" (7s. 6d.), post free 6s.
- April*. "Neptune's Almanac and Ephemeris for 1876" (1s. 6d.), post free, 6d.
- November*. "Lectures on Mental Science, according to the Philosophy of Phrenology" (2s. 6d.), post free 2s.
- 1877.—*January*. *Medium and Daybreak* for 1876, bound (15s.), for 8s. 6d.
- February*. "Phrenological Annual" for 1877, 4d., post free 5d.
- March*.—"Other World Order," (3s.), post free 2s.
- April*.—"Arcana of Spiritualism" (5s.), 3s. 6d., post free 4s.
- May*.—"Woman and a Future Life" (2s. 6d.), post free 1s. 6d.
- June*.—"Modern Medical Systems" (6s.), post free 4s. 9d.
- July*.—"What is Religion?" (1s.), post free 7d.
- August*.—"Studien über die Geisterwelt" (4s.), post free 2s. 6d.
- September*.—"Buddhism and Christianity" (6d.), post free 2½d.
- October*.—"Christianity and Solar Worship" (1s.), post free 7d.
- These may yet be obtained by sending in the respective certificates.
With this number is offered "Experiences in Spiritualism."

Please cut this part off, and send it to the Publisher of HUMAN NATURE,
J. BURNS, PROGRESSIVE LIBRARY, 15, SOUTHAMPTON ROW,
BLOOMSBURY SQUARE, HOLBORN, LONDON, W.C.

In accordance with your offer, please send me "EXPERIENCES IN SPIRITUALISM" published at 3s. 6d., offered at 2s., post free 2s. 4d.

Address, _____

Illustrated with a Photograph of the Author.

CONTENTS.

The Author's Introduction to the Subject and Early Experiences.
 Seances at Home.—Spirit-voices, spirit-lights, tests, inspirational music, physical phenomena, objects carried by spirits, seances with Mrs. Marshall, Mrs. Guppy, &c., &c.
 Seances in Public.—Description of physical phenomena.
 Spirit-Drawings through the mediumship of Mrs. Berry.
 Spirit-Prophecies on the Franco-Prussian War.
 Healing Mediumship.—Remarkable cures.
 Materialisation of the Spirit-Form.
 Spirit-Photography.—Its introduction in London.
 Historical Fragments relating to Semiramide.
 Metaphors and Aphorisms given through a medium.
 This comprehensive work embraces the phenomena of Spiritualism as presented at seances, and is a valuable record of experience for the guidance of the investigator.

London: J. BURNS, 15, Southampton Row, W.C,

A handsome volume, 450 pp., price 5s.

ARCANA OF SPIRITUALISM,

A Manual of Spiritual Science and Philosophy.

BY HUDSON TUTTLE.

Author of "Life in the Spheres," "Arcana of Nature," "Origin and Antiquity of Man," "Career of Religious Ideas," &c.

"It is—all of it—well worth the perusal, and particularly its seventeenth chapter, treating of the 'Spirits' Home.'"—Judge Edmonds.

"In taking leave of the author, I desire to express my conviction that his book is one which all Spiritualists may read with advantage, and from which even the most advanced may learn much. It would be an excellent text-book for societies to read at meetings gathered for mutual instruction. I have always regretted that such meetings are not more widely held, that there is not an attempt to study the philosophy of the subject, more mutual counsel and interchange of thought among us. A suggestive work of this kind read aloud, and criticised by those who are capable of so doing, or commented on by those who can confirm and elucidate its statements from personal experience, would be extremely useful."—"M.A.(Oxon.)"

London: J. BURNS, 15, Southampton Row, W.C.

The Phrenological Journal and Science of Health.

ILLUSTRATED.

1s. 6d. per month, 16s. per annum.

London: J. BURNS, 15, Southampton, Row, W.C.

HUMAN NATURE:

A Monthly Journal of Zoistic Science.

NOVEMBER, 1877.

SPINOSA AFTER TWO HUNDRED YEARS.

The 21st day of February of the present year was the anniversary of the death of Spinoza, who, at the age of forty-three, passed away in the year 1677. A monument has been erected to him at the Hague, near to where his quiet, consistent life ended. It was unveiled on the anniversary of his death, and an address was delivered by Ernest Renan to the assembled admirers of the philosopher. Of Spinoza we need not enter into details, having given an account of his life in *HUMAN NATURE* for May, 1873 (vol. 7, p. 209). The short essay by Miss Linter there printed gives an outline of the external features of Spinoza's life. The address by M. Renan goes more into the inner life of the great theist, and speaks of him as the result of the religious views which he taught in his philosophy. We think Renan has, on the occasion, somewhat modified the asperities of the great reformer's convictions, and presented the more idealistic side of the character, in some points, rather unwarrantably, blending the position of his hero into the popular opinions entertained by religious people of Spinoza's time.

A few months ago we received from Mr. Thomas Dixon, of Sunderland, a portrait of Spinoza, photographed from an etching. The individuality of the man impressed us very decidedly, and it was impossible to dismiss the matter till a psycho-organic delineation had been given. This was produced without our having seen M. Renan's address in the *Contemporary Review* for April, and the views presented in that address are strikingly in accord with the characteristics afforded by the phrenological delineation.

The great idea of Spinoza was his conception of the Deity, and in the present day, says Renan, to repeat the judgment of Lessing, "there is no enlightened mind that does not acknowledge Spinoza as the man who possessed the highest God-consciousness of his day." "He saw plainly that there is no assigning a limited part to the Infinite, that divinity is all, or is nothing; that if the Divine be a reality it must pervade all. For twenty

years he meditated on these problems, without for a moment averting his thoughts." "To love God is to live in God. Life in God is the best and most perfect, because, it is the reasonablest, happiest, fullest—in a word because it gives us more *being* than any other life, and satisfies most completely the fundamental desire that constitutes our essence." In accordance with these principles, Spinoza's practical life was a masterpiece of good sense and judgment. He was not only a free-thinker, but being so, felt himself as bound to live like a saint. He denied himself all kinds of gratification except that which pertained to the spirit.

He was by profession a polisher of lenses, at which he was very skilful. Being a bachelor—having been disappointed in love when young—he gave his landlady the least of possible trouble, was regarded as a model lodger, was careful to live within his income, noted down his expenses in a methodical manner, and these, on an inspection of his papers, were found to average about fourpence-halfpenny a day.

He considered piety and the mental serenity which it induces the greatest good, and that the office of religion is to produce this result. He did not believe in that religion which looks to rewards for its end, and endeavours to avoid punishments for the fear of consequences. He said, "Is it, I ask, to cast off religion, to acknowledge God as the Supreme Good, and thence to conclude that He must be loved with a free soul? To maintain that all our felicity and most perfect freedom consists in that love—that the reward of virtue is virtue, and that a blind and impotent soul finds its punishment in its blindness—is this a denial of all religion?" He was regarded as an atheist and the enemy of religion, because he cast off what Renan calls "supernaturalism," which places God outside of His creation, and establishes an impractical relationship between God and man. He taught that "bodies and souls are mere modes, of which God is the substance; it is only the modes that fall within duration, the substance is all in eternity. God is the condition of all existence of thought." He thus sought for immortality, not in sensuous manifestations of the existence of spirits, but in an ideal unity with the Divine substance of his being, a oneness with God which anchored him firmly to the "rock of ages," and gave him serenity and happiness, let the ocean waves of sense and duration fury as they would.

On miracles he is supposed to have regarded them as facts in nature unexplained, but it is difficult to reconcile Renan's position in endeavouring to dis sever miraculous phenomena from religious ideas. He has eliminated the miracles from the moral teachings of Jesus, while he at the same time says, speaking of Spinoza on the occasion of uncovering his statue—"A sovereign

as distinguished by intellectual as by moral gifts, is among us in spirit." And in the last paragraph he repeats the same idea—"His spirit will brood like a guardian angel over the spot where his rapid journey among men came to its end." It is quite true that phenomenal existence derived either from this or the future life can never become the "basis of religion," though as illustrative facts they may serve to explain the *science* of religion, or that blending of one mode into another which permits of the Divine substance maintaining its personal consistency, so to speak, notwithstanding the mutations of the time-sphere. Renan says on this point:—"The ideal remains the soul of the world, the permanent God, the primordial, efficient and First Cause of this universe. This is the basis of eternal religion. We, no more than Spinoza, need, in order to adore God, miracles or self-interested prayers." That this should be true is no argument against the value of psychological knowledge, for, says Renan further on:—"So long as there be found friends of truth ready to sacrifice their repose to science—so long will God live in us." The facts of psychological science, Spiritualism if you will, are therefore equally consecrated to human redemption along with the ideal conception of the Divine principle.

In his discourse on Spinoza, Renan shows a weak leaning towards the gods of modern fashionable thought, at which we can imagine the "gentle and pensive figure" of the great master to "feel insulted." Renan very unwarrantably makes it appear that Spinoza drew his inspiration from a Jewish root. If so, why should the fruit be so decidedly Buddhistic? Spinoza's views of the utter spirituality of existence, and man's felicity being his absorption into the soul of things, is surely not a Hebraic form of teaching, but is characteristic of a far more spiritually minded race; a race, indeed, from whom the Jews possibly stole the small smattering of bewildering Spiritualism they possessed.

Spinoza's ideas came not from historical sources any more than from the "supernatural," which Renan so virtuously decries. The "one substance," God, of which the soul and its outer clothing, the organism, are "modes," is surely enough without any platitudes about Spinoza's Jewish extraction, seeing that he cut their revelations into shreds, in a patched up garment of which M. Renan delights to make Spinoza appear after 200 years of honourable, untainted independence.

It is unfortunate for the man whose destiny it is to become a hero. He thereby has to assume all the conventionalities and inanities of the mob, and from being the champion of Truth he is twisted round into an apologist for vulgar notions, which in his lifetime he was understood to denounce.

A FEW REMARKS UPON THE HEAD OF SPINOSA.

This portrait indicates a powerful mind in a weak body. The shoulders are sloping, as in a woman, and the chest is somewhat flat and contracted; but the greatest deficiency is in the digestive apparatus, and the degree of animal power and desire for sensuous enjoyment must have been rather deficient. The mental purposes in such an organisation must take the lead, and the body is rendered subservient to the requirements of the mind; hence, the activity and versatility or handicraft-expertness of this individual must have been all necessary to the accomplishment of mental purposes.

The brain is of the susceptible type, easily impressed, ever active, and assiduous.

The organisation is much more after the feminine than the masculine character, and intellect is thoroughly suffused by affection of a pure and spiritual quality. This mind could love intensely, and be exceedingly devoted and expressive of affection to the beloved, but if thwarted by circumstances from enjoying the companionship of the desired one, it would not be able to transfer the affection to any other: extremely devoted to those friends that were in true sympathy with the mind, but almost a hermit in respect to miscellaneous society. The head is wedge-shaped, lofty, though not particularly narrow, giving expression to energy and mechanical ability as well as to intellectual and moral power.

The range of the intellect across the eye-brows is much above the average, and were it not for the extreme height of the head, particularly in the central range of organs, the brow would appear very wide, but when the length of the features are taken into account its great breadth is more apparent.

The mind of this man was capable of seeing all things as a whole, and not in parts. The central organs being very large, caused him to dive to the bottom of those questions submitted to him, and to build up upon that basis a superstructure of thought, aided by the literary faculties and particularly large Language. He did not know and reason simply as an intellectual task, but he felt, he experienced, and he loved that to which his thoughts had reference, and understood the nature of the relations which he sustained to the subject of his affections, and thus, in affection as well as in reason, he embraced his subject, and set it before the world with that warmth and fullness which rouses enthusiasm, while it enlightens the mind.

To understand Spinoza the reader must be possessed, to some degree, of all Spinoza's peculiarities. The hard-headed rationalist, devoid of intuition and holy affection, will see in his thoughts a superstructure of words which they cannot comprehend, and therefore continually misapply.

The organ of Individuality is the leading intellectual feature, and it bestowed on its possessor a distinct idea of Personality as a central impression. The relative organs, Form, Size, Weight, Colour, Order, and the esthetic faculties, were all subservient to this key-stone of the intellect; and therefore phenomenal, relative, and temporal considerations, paramount to other minds, were to him modifications of an all-assertive Personality.

This mind could have been a superior artist or engraver, capable of delineating and giving character to the individual depicted, or of expressing in geometrical form the idea of personality which his mind contained. Words, however, served him equally well, and the temperament being highly mental, the affections warm, and the intuitions exalted, he could clothe with form and description that which is felt, but remains unexpressed, in so many minds.

The second range of intellectual faculties, which take cognizance of the changes and succession of phenomena, were full, which gave consistency and completeness to his mental performances, and enabled him to express logically the development of many diverse subsidiary considerations, all referring back to the one basic principle.

The third range of organs, giving the power to comprehend rationally and criticise consistently, is very full, but, if anything, somewhat subservient to the perceptive ability, so that in no respect could this mind be called that of a theorist, but one which endeavoured to express, consistently and logically, the simple perceptions of the intellect. The coronal brain appears to have been extreme in development, more particularly on the median line. The side organs, of the imaginative, romantic, and enthusiastic class, are not large, so that he was not by any means a credulous, imaginative person, building up his system upon the side issues of intellectual action; indeed, he was somewhat deficient in this respect, and had he been endowed with more of it he would have expressed himself in a more flowery and poetical manner, and by his parables and illustrations brought home the intellectual truths he possessed to those of a much more general order of comprehension.

Benevolence, Veneration, and Firmness appear to have been enormously developed, endowing him with great perseverance and moral integrity, supplying a pure passion, so to speak, of aspiration and reverence for the Divine, and also bestowing in connection therewith the most genial considerations on behalf of human needs. He may be called the Deo-humanitarian, the God-man intellectualist, who grasped within his definitions the nature of Deity as seen from the human point of view, or as directed human-wards, and taught the truths thus gathered, to the world of mind less fortunate than himself.

Returning to the minor faculties, the organs of Order, Constructiveness, and Ideality appear to be very large, so that he could engage in a variety of pursuits and carry them all out simultaneously. Indeed, it would be a rest to this mind to have some variety of interests to occupy it. It is a mind developed on various planes, so that while one set of faculties were occupying themselves another would be exerting their influence towards the accomplishment of quite a different order of interests. The base of the brain, though full, implying great mental energy and executiveness of character, was not of such a kind as to lead to the manifestation of passional proclivities. Although characterised by a sensitive reticence and feminine discretion, yet the organ of Cautiousness appears to have been only moderate in development, and jealous or suspicious feelings would be foreign to the man. He has been almost devoid of ambition or the desire for praise, acting out his life as truly, and doing his work as thoroughly, in secret and unknown, as if his every effort had been applauded by the loftiest in society.

This mind, though affectionally attached to the past, was not ruled thereby, but looked forward rather into the future with sentiments of cheerfulness and confidence. Though physical conditions might often depress the spirits, and cast a cloud over the feelings, yet there would be at no time that despair and darkness to which a lower order of mind similarly circumstanced is subject. His future was the everlasting present—his Heaven was here; his God was to him a neighbour and a friend, and all inferior considerations were swallowed up in these sublime realities. It was not necessary for him that the spirit-world manifest by miracle or apparition. His sense of spirituality soared above any inferior manifestation thereof, and while he was possibly very sceptical in regard to asserted facts in reference to the unseen, his knowledge or comprehension of the eternal principles which regulate all things was sufficient in itself.

It will be many ages before the general order of mind can in a remote degree appreciate such a mind as this. Many who profess to be his disciples only misrepresent him and delude themselves. He was not a rationalist, though extremely reasonable. He was not a sentimentalist, though overflowing with affection. His system cannot be comprehended within formulas, as the power of numbers is expressed in the multiplication table. Those who enter his presence require to do so in that feeling of experimental reality which enabled him to express so lucidly and consistently that which others failed to comprehend, even after wearisome study.

J. BURNS.

A SPIRITUAL THINKER.

(Concluded from p. 459.)

RELIGION.

Hitherto history has chiefly consisted of mere compilations of wars, court intrigues, the Parliament, &c., while the facts relating to the social, mental, and moral progress of the people, constituting true history, have received but scant attention. Happily a change, called for by the necessities and increased enlightenment of the age, is dawning; and a history, which aims to be worthy of the title, must now exhibit insight of the working of great principles, and pass superficial details unheeded. A reform, too, is needed in another department of literature equally as important, if not more so, than that which is termed secular. I allude to our collections of spiritual thought—of the inspirations of the Seers and Prophets of all lands. A Romish Council, ignorant of the existence of other sacred books, voted that the Hebrew Scriptures were alone the Infallible Word of God. Unquestionably these manuscripts contain very much spiritual truth, but to regard them as the only and last spiritual bequest from the Author of Being, were indeed to exhibit great blindness and want of spiritual culture.

It has been ascertained by fearless and honest criticism that the Old Testament is comparatively a late composition, and amalgamates Grecian, Phœnician, Babylonian, and Persian mythology, faith, &c.* It does not contain the perfect conception of God. Even the God of Jesus of Nazareth does not save the whole human family.†

Examine dispassionately all sacred books, and the pure divine truth—that which is impersonal, universal, and independent of historic or other authority—will be found. The Word of the Supreme Mind is embodied in the souls of all men, and has gained utterance in no small measure through Chinese, Egyptians, Hindus, &c. The message may differ as to form, but it is the same in essence in them all, for “In the region of spirit there can be no inequality, no dis-

* See the Researches of Thos. Inman, M.D., “Ancient Faiths embodied in Ancient Names.”

† “Neither in the Old Testament nor in the New do you find the God of infinite perfection, infinite power, wisdom, justice, love; it is always a limited God, a Deity with imperfect wisdom, justice, love, and with a devil beside him, the created fiend, getting the victory over the Creator! The Bible does not know the infinite God who is immanent in the world of matter and man, and also in these flowers, in yonder stars, in every drop of blood in our veins; who works everywhere by law, a constant mode of natural power in matter and in man. It is never the true God who is responsible for the welfare of all and each, a Father so tender that he loves the wickedest of men as no mortal mother can love her only child. Does this surprise you? When mankind was a child, he thought as a child, and understood as a child; when he becomes a man he will put away childish things.”—From Theodore Parker’s address on “The Progressive Development of the Conception of God in the books of the Bible,” delivered at the Pennsylvania yearly meeting of Progressive Friends, 1858.

similarity, no absolute progression; all progress is phenomenal, or in the empire of signs and motions; in facts, not in *principles*, in substances, not in *essences*; in thoughts, feelings, sentiments, judgment, will, action, but not in *ideas*. Ideas may be awakened, not imparted, as music is roused from the mute harp wherein it dwells. But as each artist gives his own peculiar expression to the music thus elicited, so does each human mind impart its own idiosyncracies of temperament, of organisation to the idea which is the indwelling inspiring cause."^{*}

Religious truths are then the inherent property of all, and George Fox was inspired with this great thought when he said that, though he read of Christ and God, he knew them only from the like spirit in his own soul. And we may further add that when we see Truth we correspondentially see God; and every spirit can truly say, "I (in my Inmost) and my Father are one:" "He that hath seen me hath seen the Father." But although ethical and other principles are innate, perusing and studying the inspired utterances of the great souls of previous ages must exert a vivifying and quickening influence, consequently we need not only the finest inspirations of the Hebrew Bible, but those which are of equal merit in sacred and other books, and we ought to have in general use a Bible of Bibles, setting forth great spiritual principles, and omitting historical and other details.[†] In the Vedas, which is so old that history is able to assign no date, is the following revelation of the Supreme Mind: "There is one living and true God; everlasting without parts or passion; of infinite power, wisdom, and goodness; the Maker and Preserver of all things. Any place where the mind of man can be undisturbed is suitable for the worship of the Supreme Being. That Spirit who is distinct from matter, and from all things contained in matter, is not various. He is one, and He is beyond description; whose glory is so great that there can be no image of Him. He is the Incomprehensible Spirit who illumines all and delights all; from whom all proceed, by whom they live after they are born, and to whom all must return. Nothing but the Supreme Mind should be adored by a wise man."

Scientific men are generally not distinguished for spiritual knowledge. Faraday confessed that if he brought the same logical method to bear upon his theology as he did his science, he should be an atheist.

^{*} A. J. Davis on "The Philosophy of Mind," Great Harmonia, vol. 5, "The Thinker;" the best work, undoubtedly, which has issued from the spiritualistic press.

[†] The inspired Swedenborg, in his "Arcana Celestia," 5253, says, "There are three things which perish from the literal sense of the Word, while the spiritual sense is evolving, namely, whatsoever pertains to *time*, to *space*, and to *person*. The conception of time and space perishes, because these things are peculiar to nature, and spiritual thought is not determined to person, because a view to person in discourse contracts or limits the thought, and doth not render it unlimited: whereas what is extended and unlimited in discourse gives it universality, and fits it to express things innumerable and ineffable. Angelic discourse, especially that of the celestial angels, is of this character, being comparatively unlimited, and hence it connects itself with the infinite and eternal, or the *Divine* of the Lord." See also 5434 of the same work.

Oersted is, as all my readers will have seen, an exception to most scientific teachers; he was endowed with spiritual insight and inspiration, and perceived that while we might have a theology transcending our reason, one contrary to it must inevitably be fallacious. His great faith in the Infinite was, I believe, the result not only of profound outward research, but of deep interior meditation. No man could be more earnest to discover truth and the essence of things. He discerned, as will be remembered, that the only reality is the power which creates and which is one with the Universal Mind. God may be said to transcend all spiritual forces in Nature, but in the ultimate analysis—as Oersted, with truth, holds—the eternal creative power (spiritual force) and the eternal reason are inseparable. “The creative power gives the thing its action, reason gives this action its form, which comprises in each thing a variety of subordinate forms, just as an idea can conceive in itself many subordinate ideas.”* In the following passage he more fully sets forth this idea:—

“Matter is not an inanimate existence, but an expression of activity by which all the pervading laws of Nature are determined and restrained. The principle of action and the order of existence are not, therefore, two distinct objects, but one living, constantly creating and regulating totality of Reason, an eternal living Reason, which is God! This does not exclude the need of design and wisdom if we only remember the immense distance which exists between infinitely perfect wisdom and that of all finite beings. Even in the exercise of human reason, whether on a machine, on the government of a state, or on a scientific work, we shall always find a more perfect harmony in the parts the juster and the purer are our conceptions of the primary idea. We often discover agreements which only owe their origin to the consistent application of the primary idea, as if different dispositions had been formed for their production, although they really spring from the peculiar harmony of reason; but every individual expression of reason, that is to say unlimited reason, is a result of the peculiar nature of reason, and therefore is at once the means and the end. As a mental experiment, let us imagine that everything we know concerning the form of a sphere was still unknown, and that an artist endeavoured to discover a form that should appear alike on all sides, that should balance itself if placed upon a horizontal surface, should have a surface which would inclose a greater space than any other form of the same size,—what an extraordinary depth and variety of thought it would require! But he, on the other hand, who starts from the principle of this form—viz., of a space whose surface is everywhere equally distant from a centre—will

* “The spiritual force that is in matter is the law of aggregation and change which causes chemical attraction; the various responses to the laws of organic life, and upon which the spirit of the Infinite continually acts, just as the air continually acts upon your bodies. But no atom exists in the universe devoid of spirit, and as necessary to the life of the atom is the infinite spirit that pervades that atom as your spirit is necessary to your body in its identified form. The theory that spirit is refined matter, or that matter may become, by sublimation, spirit, is fictitious.”—MRS. CORA L. V. TAPPAN.

find far more beautiful and remarkable properties from the necessary development of this idea, while a mere endeavour after this end without a previous knowledge, would either never be successful or only by a circuitous means. Let us now turn to Nature herself; but let us only bear in mind in the idea of the universe that precaution by which in the endless variety of existing beings and life, one object is never allowed to interfere with another; how can we conceive a wiser design than the distribution of the whole mass of the universe into innumerable habitable spheres, each possessing its peculiar days and seasons, containing degrees of heat, density, &c., &c.? How could we imagine anything better than the arrangements by which a large proportion of these spheres derive light and heat from the sun, and whose periodical days and seasons are determined by the revolution of each round its own axis, and by their several orbits around the sun? But all these and many other designs connected with it are the necessary result of those laws by which the parts of matter and motion and attraction are directed. Viewed in a finite light, the end and the means are separate; in the reality and as a whole they are one. If we now turn our attention to our own world we see the most beneficent arrangement, such as the alternation of days and seasons, produced from the comprehensive and necessary laws of Nature. If, on the one hand, we regard the beneficial effects which are produced by the movement of the sea, by the ebb and flow of the tide, we must, on the other hand, recognise that they necessarily spring from the same general laws. If we bestow praises on the vicissitudes and equalisation of heat, which are caused by various currents of air across different tracts of country, we shall again discover that they are consequences of the general laws in connection with the expansive powers of heat. Let us enlarge the idea from these examples to the utmost extent; we shall then see that the belief in the ends which Nature has in view does not exclude necessity, and, again, necessity does not exclude these ends; but, as the poet says,

“The means and end embrace each other in reason.”

It naturally follows from the conception of God as the “Universal Reason,” that there can be no personal or external communications from Him. The vulgar notion of inspiration is the reception of a message conveyed from without by audible voice or sign. This absurd idea arises from the anthropomorphic view of God which Neander, the Church historian, says consists in ascribing to the Absolute Spirit the “limitations and defects which cleave to the human.” The divine essence within the soul or spiritual environment being impersonal, its intercourse with the Universal Consciousness or “Grand Man” is necessarily of the same nature—impersonal. When man is inspired by God, his Inmost Celestial Reason is in absolute *rapprochement* with Him and his intermediate psychic faculties, and the medium for these—the brain organs—are so exalted that the Interior Spirit gains utterance through them, or, to use the eloquent words of Theo. Parker—“What is private, personal, peculiar, ebbs off before that mighty

influx from on high ; what is universal, absolute, true, speaks out of his lips, in rude, homely utterance, it may be, or in words that burn and sparkle like the lightning's fiery flash." Oersted held a similar view on inspiration, and in alluding to the value of inspired writings he says :—"If we view God as that essence, of whose being we must be convinced by our own essence, we must then bear in mind that the former as much as the latter is an entire living Being, though in every respect infinitely more glorious. From Him we receive, through the whole of existence, innumerable influences ; but our conviction of this springs from the intellectual faculties of our nature. By the hidden power of all these united effects, the knowledge of God is awakened within us. Some people have such a strong internal life of reason, that this consciousness is very easily excited ; most people require many and powerful means of excitement ; to these belong communications from other independent beings. Were such believed as communications, a faith upon authority would alone be produced, which is almost useless to our rational existence ; but if these communications awake those hidden faculties of the mind which are adapted to faith, so that these are developed into a lively consciousness of God, and the consequent endeavour to live in God, then this faith would never be designated a faith upon authority."

Oersted next teaches that as everything only so far possesses a reality, inasmuch as it participates in the power of the divine nature, so only thence does it derive its true value. "The thinking man seeks an independent good—a good that is excellent from its own nature and not from any foreign virtue ; but that which is essentially its own is indeed perfect, self-sustaining, independent—is one with the Eternal Source of all things—is God Himself. To strive after the good is, therefore, to endeavour to appropriate as much as possible of the divine nature. The right way to strive after the good is the worship of the Almighty. It is easy to perceive that our code of morals viewed in this light becomes religion, while it is its highest principle that with God before us we should endeavour to preserve as perfectly as possible his image in our hearts." This embraces, we need scarcely say, all spiritual culture and religion. With his high view of the spiritual nature of man he was not afraid of atheism—the tendency, as he terms it, to reject all direct certainty that does not proceed from the impressions of the senses—which he held could never possibly attain an exclusive ascendancy, because "a higher Power has so provided that evil cannot retain an unlimited superiority but that germs of a newer and more noble development remain, even when a particular evil has increased in power to such a degree that great revolutions are necessary."

With equal wisdom he teaches that the self-conscious human spirit could not have been developed out of inferior elements. Reason or the spiritual power must have lain hidden in the earliest races of men as in the child, and the human faculties only required the influence of the entire universal arrangements of reason, founded upon the divine nature in order to develop themselves. Man has therefore

always been steadily advancing, and the so-called "insoluble mystery" of evil arises through attributing its existence to a living principle always at variance with the principle of good. Evil recedes as we advance, mentally and morally, while the perfect ideal principle within us always conceives a greater good than that which actually exists. "To ask why there is evil, or rather, why there is change, multiplicity, measure, time, or space, is the same thing and amounts to asking why the world is the world." Pain and moral evil, are as spiritual philosophy teaches, the results of development. The purpose of man's existence is to develop a spiritual body which shall clothe and permit expression to his divine inner principle, and it is impossible that in this rudimentary stage of being he should be anything like what we deem "perfect." "The whole of existence," says Oersted, "was always finite; and no one ever believed that it first became so by means of sin; but all finite existence is by its nature imperfect. Every finite object is limited and transitory, and when viewed separate from its connection with the whole of which it is a part, we have sufficient cause to lament over the imperfections of the Finite; but if we do not only regard the individual objects merely apart from the whole, and—if I may so express it—as if it were their duty to be Independent, we shall be led to another mode of contemplation. The more an object constitutes an exclusive whole, the more we see in it the revelation of eternity. In the totality of the Finite we first see the revelation of its eternal origin, so far, of course, as it is possible to see it from our point of view. It appears to me that those who have zealously brought forward and depicted the misery of the Finite, not excepting the profound thinker Pascal, have failed, because they have placed the thing in a false point of view; they spoke of the Finite as if it ought to be the Independent and the Eternal, and therefore showed how infinitely it is removed from it. Pain, death, and destruction are spoken of as the fate of all finite beings, and I am asked if I consider all this as nothing. I reply that all this is sufficiently felt in finite existence, but I doubt that anyone can prove that it ought to be different; whereas our consolation in this finite life must be our hope in a life of infinite duration. But if existence, properly understood, is an undisguised revelation of the Divinity, it is of the greatest importance that we do not misunderstand this, but, on the contrary, that we should vividly apprehend it, and take a lesson from history, which proves to us how the human race in the most different periods of time and amongst entirely dissimilar races of people has received instructions from these revelations. An intelligent use of this knowledge will serve to strengthen us in our happiest convictions, and at the same time elucidate and purify those opinions which are mixed up or obscured with error."

Although many valuable articles by Oersted remain unnoticed, I must draw these papers to a close, having said sufficient to excite an interest in his works,* and influence those who have not yet perused

* "The Soul in Nature," translated by Leonora and Joanna B. Horner; published by Bohn.

them to read them for themselves. What I said concerning his great merits in the "Introduction" has been sustained, and no one will deny Oersted a place in the ranks of the great spiritual thinkers and reformers of the world. Endowed with great natural talents, he used them faithfully in the cause of progress and truth. "The measure of action is the sentiment from which it proceeds." Goethe's ruling love, as Emerson has pointed out, was the culture of himself; his test for all men, "What can you teach me?" Oersted, on the other hand, existed for the culture of others, and his ruling principle was, "What can I do to aid my fellow-men mentally and spiritually?" He was thus a true Spiritualist. He ascended to the highest grounds from which genius has spoken, worshipped the highest unity, and exhibited a rare devotion to pure truth and duty. His pure ether stimulated all who came within his sphere, and their thoughts were elevated to the necessary and eternal. A true man, I say, in the highest meaning of the word, and whose name and works will be handed down to posterity with just reverence and regard.

JOHN RUTHERFORD.

"WORLDS WITHIN WORLDS, OR NEW DISCOVERIES IN ASTRONOMY."

This is the somewhat perplexing title of a work by Wm. Baker Fahnestock, M.D., and published by Messrs. Barclay and Co., of Philadelphia. The letterpress and illustrations within its covers present to the reader views of the universe in many respects totally opposite to those usually accepted by astronomers. They should not, however, be condemned on that account as altogether fallacious. Incomplete they may be; but they are certainly surprising and original enough, to attract the attention of many minds towards the study of the probable conditions which exist in other worlds than ours.

The instruments which Dr. Fahnestock used in the prosecution of his researches into the distant worlds that roll through space were not telescopic, but *human*. When the Doctor desired information respecting Venus, Mars, Jupiter, or any other planet of the solar system, or felt curious to know the constitution of the sun or the fixed stars, he did not consider it necessary to bring a great equatorial to bear upon the object of research, and pass sleepless nights in making and recording observations. Such a method would be obviously incomplete, because the telescope would only reveal outside appearances; and not internal conditions, and interesting particulars as to vegetation, inhabitants, climate, &c. Another method of investigation had therefore to be employed. The author states (p. 108), "I had for a number of years believed that our sun and all the fixed stars were not

balls of fire, as asserted by scientists, but immense globes of earth-like matter which exist in space, and, by peculiar and endless varieties of forms and motions, create their own light, or modify and refine the electricity furnished them by comets at various times, when the supply becomes exhausted." "The powers of the telescope, even if it could be made far-reaching enough accurately to show the external surfaces of stars and planets, could never reveal the mysteries of their insides, and unless the powers of clairvoyants give us that knowledge, we must for ever remain ignorant of the wonders that endless space has in store for us."

In the exercise of his profession, Dr. Fahnestock does not despise the curative power of human magnetism, and the result has been that many patients, upon being put into the mesmeric or magnetic sleep, passed into the statuvolic or somnambulic condition. These sensitives were found to answer questions respecting other worlds, and to corroborate each other as to the main points of inquiry. The objections that such evidence is not reliable, and that clairvoyants may be visionary, and their looking the result of an excited imagination, the Doctor considers "are answered by the fact that many clairvoyants see and describe things alike, and have recognised peculiar objects in various planets that have been represented by drawings upon paper, as well as the recognition of peculiar pieces of music heard upon the same planet by one person and obtained there and played upon earth by another. The recognition was perfect, although both were strangers to each other. These and many other incontestable proofs of their powers to see correctly have been obtained at various distances. It therefore follows that if they can see correctly at a distance of eighty or one hundred miles, we cannot limit their powers, and therefore may safely depend upon their clairvoyance, especially if what is seen is sustained by reason as well as by analogy." The foregoing will convey some idea of the method employed by the author in collecting information respecting suns and planets.

If these sensitives whose accounts agree so well together had been put into the magnetic sleep by *different* operators and in *different* places, the results presented to the public in "Worlds within Worlds" would have been invaluable; but it would appear as if these sensitives were the Doctor's patients, and while they were under his influence would naturally reflect his dominant thoughts with more or less intensity. On page 108, previously quoted, the Doctor's hobby is apparent, and should therefore be taken into consideration when reading his book. With this proviso, the whole work may be read with profit and pleasure. When making his ascent from the earth to worlds beyond its limits, the clairvoyant describes the light as becom-

ing less and less until after you leave the earth's attraction ; " You are then surrounded by total darkness ; indeed, so intense is the darkness that those who have never experienced it can have no comprehension of it. In looking around you perceive the various suns and planets as simple silver discs of various sizes, from a few inches in diameter to that of many feet, apparently set on an intensely black back ground. The edges of these discs are perfectly defined, without throwing out a single ray of light, whether they are suns or planets. As you approach any one of them it seems to increase in size until you come within its attraction, and then are directly over it, in whatever direction you may have approached it. Not only is the clairvoyant surrounded by total darkness when out of planetary attraction, but silence deeper and more intense than that of the grave, attended by a feeling of loneliness (as complete as though he were the only being in existence) takes complete possession of the entire man." Arguing from this, the author maintains that it proves conclusively that the ray proceeding from any one of the suns in the universe is dependent on friction for its power of producing light. An electric ray thrown off from the sun passes invisibly through space ; when that space is occupied it meets resistance, which through friction on the ray results in both light and heat in exact ratio to the density of the atmosphere. Thus the nearer you approach the planet, the greater the light and heat in our system. The moon is thus clearly demonstrated to have an atmosphere, because if it had not, the ray from the sun would continue invisible and no moon could be seen.

It is generally thought that the farther a planet is from its sun, the lighter is that planet and the rarer its atmosphere ; but clairvoyants testify that the contrary is the case. They say that the farther the planet is from the centre of its system, the *greater* is its specific gravity, density, and light, and as a consequence its inhabitants will possess a proportionally increased intelligence. The fact that Jupiter is as bright, if not brighter than Mercury or Venus tends to corroborate the truth of the above propositions. Clairvoyants also say that the planets and their atmospheres nearest all suns are too rare for man to exist upon. The sun, instead of being a " great fiery ball," is described as " consisting of an outside and inside crust or shell, and a central earth. These crusts (or earth-like) bodies are a sufficient distance apart to revolve without touching, and do so in opposite directions around the central earth, which is larger than our own. They are miles in thickness, and thousands of miles distant from the central orb, which revolves in an opposite direction to the inner shell. There are large orifices in both shells, through which the electric light (generated by the friction) passes, as well to the earth within the sun as to its

planets outside, viz., Mercury, Venus, Earth (and one moon), Mars, Jupiter (with four moons), Saturn (with seven) Herschel or Uranus (with six), Neptune (with nine), and Omega (not yet discovered by the telescope, with twelve moons).

In a series of essays on the motions of the earth and heavenly bodies, by P. Cunningham, surgeon, R.N., published in 1834, and evidently the result of great thought and laborious research into the properties and distribution of *electro-magnetism*, the theory is advanced "that the distance of a planet from the sun is regulated by the amount of mass electro-magnetism the planet contains, and thus the small planets Juno, Vesta, Pallas, and Ceres show, by their nearly triple distance from the sun to what the earth is, that they contain nearly triple the latter's amount of electro-magnetism; and as attraction and repulsion *increase in a body in proportion to the amount of mass electro-magnetism it contains relative to its bulk*, therefore Uranus may be a warmer planet than Jupiter, though nearly four times his distance from the sun, in consequence of only being one-third his size, while containing nearly four times his amount of electro-magnetism, as evinced by being nearly four times his distance from the sun." These essays go much farther into the electro-magnetic theory of planetary motion than Dr. Fahnestock's clairvoyants, and Cunningham's theory is introduced here solely with a view of satisfying the reader that properly directed scientific investigation may ultimately corroborate the statements of clairvoyants in many other particulars than those mentioned.

The earth within the great electric machine of the sun is described as very beautiful, the inhabitants possessing intelligence and beauty of a high order; and although insulated to some extent by the spheres surrounding their earth from others, yet they grasp with ease by herculean intellect astronomical truths.

Mercury and Venus are described as much below the earth in all respects; everything upon them is soft and flabby, and no species of the *genus homo* exists there, unless indeed you regard as belonging thereto a creature in some degree resembling a monkey, which stands at the head of their productions.

This description, inasmuch as it relates to Venus, does not accord with that given by "Professor Mapes" through Mrs. Tappan, p. 61 of "Discourses through the Mediumship of Mrs. Cora L. V. Tappan." On that page, in answer to a question as to whether the inhabitants of the other planets of our system transcend those on this earth, the following reply is given:—"The inhabitants of some of the planets transcend yours. Those within my range of knowledge, especially Venus, have an intelligence and spirituality that far transcend any-

thing on your earth; so much so, that were you presented to the inhabitants, they would take you for lower forms of beings." Here is a very wide difference. If the planet Venus should be in a state too undeveloped to allow human life to exist upon it, "Professor Mapes" must have been mistaken; if human beings do exist there, then the clairvoyants of Dr. Fahnestock must be either entirely or partially mistaken. The two accounts cannot be reconciled, excepting upon the supposition that the clairvoyants only visited the uninhabited parts of the planet. Future investigation must decide whether one or both accounts are correct. Our moon is said by the clairvoyants to be inhabited, and to have an atmosphere. The physical and mental conditions predominating on the planet Mars are described as of a far higher order than those of earth. The red appearance of the planet is stated to be caused by a peculiarly organised reddish electrical vapour enveloping the planet at some miles' distance from its surface. Its use is to give the inhabitants light in the absence of the sun, and serves the purpose of a moon. The surface of the planet is finely organised, and the inhabitants are finely formed, but small, not over three feet in height. In point of intellect they hold about the position compared with earth's wisest that these do with the African or Hottentot.

The Doctor's clairvoyants do not seem to relish anything found on the asteroids. Here again they differ from other sources of information, which state that the asteroids are inhabited by beings who delight in music, the arts, and the various elegancies of life.

This discrepancy opens up another field for future investigation.

Saturn is described in similar terms to Mars. The two rings which surround this planet revolve in opposite directions. The substance composing them is opaque and resembles ground glass, and they appear to be electrical plates whose revolving is supposed to refine the electrical influences coming from the sun. This description of Saturn's rings appears to be corroborated by the following remark of Cunningham: "The rings of Saturn seem to be composed of alternate strata of electric and magnetic matter; the dark lines marking the situation of their neutral line." The inhabitants of the outside and largest moon of Saturn are described as having arrived at a very high degree of perfection for beings in a rudimental condition, and music and mathematics stand in the first rank of their studies.

Uranus or Herschel is described as one of the most beautiful in our solar system. There are few mountains to be seen. Scenes of sylvan beauty, crystal streams, and delightful exhilarating air abound, and a large portion of the planet is covered by lakes as clear as crystal.

The inhabitants are more diminutive than those of earth, but their mental capabilities are far superior, being more conversant with our earth and its laws than many of its own inhabitants. Grains and fruits are found here in a more perfect condition than on earth, and no untimely frosts occur to blight or mar the handiwork of creation.

Neptune is described still more temptingly. The temperature averages as much as that of the Southern States of America, and the light is much greater than that of our earth; objects on its surface sparkle like diamonds. Physically more refined than Herschel; the inhabitants in general are more advanced intellectually. A long and interesting account of the inhabitants, inventions, &c., is given by the author. On this planet "thoughts are conveyed by music, as we do by language." Here then is to be found the Grand Opera House and Academy of Music of the Solar System.

Thus far the astronomers may have something to say in criticism of the statements made by clairvoyants and the theories based thereon, but Neptune is the most remote planet of the solar system known to astronomers, and, however much it might be desired, they are at present unable to accompany the clairvoyants to the *undiscovered* planet which, for want of a better name, Dr. Fahnestock calls Omega. Clairvoyants assert that there is a planet outside Neptune, and that its orbit is as far from Neptune as that of Uranus is from the Sun, and its size probably about six times that of Jupiter (size and distance can only be given by clairvoyants comparatively). Organization has here a fineness utterly unknown and inconceivable to the inhabitants of earth. Everything rough seems to have been smoothed, and the universal law that "as the physical power in the individual decreases the mental predominates," is here demonstrated to its fullest extent as regards our system. Their earth brings forth all the necessities of life almost spontaneously, all anxious cares for the support of physical life are to them unknown, and every energy of superior intelligence seems to be brought to bear upon questions relative to mental culture. It must here be explained that the Doctor's clairvoyants always find that the last planet in each system they have examined is the most progressed, and is accounted for as follows:—"The electrical forces as they issue from the centre (sun) contain in a crude condition all the elements required in the system from whose centre they proceed. The first planet in every system receives the first supply in its crude condition, and can only appropriate that portion which suits its wants, eliminating that which is finer to go to the next in order, and so through the entire series." Therefore, in proportion as a planet is placed first, second, third, fourth, or fifth, &c., in the series, will be the physical fineness and

mental calibre of its inhabitants. It is impossible for clairvoyants to describe many things which they see on this outside planet or to comprehend their nature, and language cannot be found to convey a true idea of the perfection there displayed. When the Doctor next sends his clairvoyants upon excursions to Omega he should direct them to observe during their ascent from the earth, and approach to that planet what fixed star appears to be nearest in a line with and beyond Omega. He should then publish the results of his investigations in this particular, in order that astronomers in possession of powerful telescopes may be assisted in their efforts to find the new planet, and determine its orbit, &c. By combined clairvoyant and astronomical research, tables of Omega may in a few years be added to those of Neptune and the other planets, and be published therewith in the "Nautical Almanack."

By far the greater part of the book is filled with accounts of the peculiar construction of the fixed stars with descriptions of their attendant planets. These fixed stars, present generally the same features as our sun, but their electrical crusts and internal earths are often of a more complicated construction than that of our sun, some of them having six or seven crusts revolving one inside the other, and four or five and sometimes more internal earths. Upwards of thirty diagrams in colours illustrate the letterpress descriptions; and confer additional interest to the book. The visions of life in some stars are of the most romantic and wildest kind. Our earth, as regards comparative progression, is more advanced than many others, but infinitely below some. The descriptions of the various fixed stars are supplemented by that of "The Nameless Earth," which is a planet belonging to a glorious system far outside the range of telescopic power, the light from its sun has not as yet reached our earth; and when it shall, it is supposed to be very questionable whether any of our most powerful glasses will enable us to perceive it.

The sun of the system to which this planet belongs, appears to clairvoyants to be about three times as large as ours; and instead of having the dazzling lustre of ours, is white, like silver, mild, and soft. The men of this earth can gaze upon it while in its meridian strength. Here is no absolute darkness, and night is only a sort of mild twilight. It is among the most perfect earths in the universe, and is very beautiful; lofty mountains clothed with the loveliest verdure, streams as clear as crystal, the singing of birds, the rippling of fountains, and the playing of zephyrs, constitute a condition only surpassed by heaven itself. Moral evil has never entered there. Guards on the confines of its system prevent the introduction of evil influences from other spheres. The inhabitants are nearly as white as snow, of

medium size, and appear semi-transparent, and their intelligence is of a very high order indeed. *They use no medicines*, and are free from disease; they are only subject to injuries from accidents. They are all clear-minded and have perfect control over both motor and sensitive nerves naturally. When an injury is received an act of their will suspends motion and sensation in the part until healing has been accomplished, which takes place rapidly. They do not die as with us, but are changed in an instant from mortal to immortal; the material body dissolving into its primeval elements at once; therefore there are no funerals and no mourning." In conclusion, "Worlds within Worlds" is one of those books which are seldom met with. The romantic statements it contains would, if properly handled, make the fortune of a novelist; and the preceding extracts may convey some idea of the work as a whole. All who are curious in such matters would do well to obtain the book for themselves.

"NEPTUNE."

ESSAYS ON MATTER, MOTION, AND RESISTANCE.

BY JOSEPH HANDS, M.R.C.S.

(Continued from p. 455).

QUALITIES OF MATTER.

81. Man, subject to certain excitations or affections of his senses, is led to assign those dispositions to an external cause. This outer effect is that which he calls matter. What the material world is in itself he knows not. He recognises only its capability of producing in him certain impressions—the ordinary feelings of the senses, sensations as they are called—and those which give the ideas of extension, figure, and resistance. Thus, having already supposed a something without, he pronounces these to be its qualities, ignorant all the while what that something is, and knowing it only as the *substratum* of the qualities. We weigh matter, measure and decompose it, &c., and if we seek to advance one step beyond these gross operations we find ourselves helpless, and before us an immeasurable abyss.

82. All differences in material objects as they exist in Nature have been *said* to be the effects of motion disposing primary particles into *forms*; and that which is called chemical action is—when considered in its origin—nothing more than an effect of mobility in the more refined and subtile order of substances; *decomposition* being produced by opposing abilities, composition by attractive energies; and thus also chemical action, like that which is called mechanical, is resolvable

into an effect of motion. We know nothing, then, of matter, save through its sensible properties; remove *these* from a body and the idea of its existence disappears.

83. Corporeal substances have been supposed to be made up of particles or atoms having particular forms, each possessed of a certain magnitude or property, and that determinate numbers of atoms of one kind admit of combination with a limited number of another genus or of several species, and thereby form by their union *compound* atoms, having properties belonging to that commixture differing from the known qualities of their elemental particles or those separate molecules of which the compound is formed. As, for example, water—a fluid—consists of compound corpuscles, which when separated into its constituents is found to be made of gases—viz., oxygen and hydrogen.

84. Some schoolmen have assigned to matter primary and secondary properties.

PRIMARY QUALITIES.—Length, impenetrability, depth, indestructibility, breadth, divisibility, weight, inertia, porosity (this latter being shown by the interstitial spaces between the atoms of substances which is occupied by heat), ether, light, electricity, and unparticled or unatomised matter).

85. SECONDARY PROPERTIES.—Density, transparency, opacity, translucency, malleability, solidity, ductility, colour, fluidity, and all those qualities by which we distinguish one substance from another.

Certain *literati* have defined matter as anything which occupies space, and to be subjected to attractive and repulsory laws. The attractive are divided into those that act at sensible and insensible distances; the repulsory into homogeneous and heterogeneous, namely, those which take place between similar and dissimilar bodies.

Attributes or Endowments of Materiality.

86. (a.) ELASTICITY is that capability which certain articles possess of recovering their primitive form and dimensions after the applied effort by which they may have been dilated, compressed, or bent, is withdrawn. The molecules of matter may—for the sake of illustration—be presumed to be acted upon by attractive and repulsive efforts. The attractive ability results from the action of the corpuscles on each other, the repulsive effort from the caloric and electricity, &c., surrounding them, which elements preserve a certain distance between each separate particle, and this space—though infinitely small—admits nevertheless of increase and diminution.

When a body is in that state commonly called *rest*, the opposite energies which any two of its contiguous molecules exercise on each

other are in equilibrium, the energy of the abilities depending on the distance between the corpuscles. If the distance between the particles be increased within the limits of the action of the repulsive and attractive abilities, that is, short of what is commonly understood as rupture or separation, both energies are diminished, and if the distance is diminished both are increased, but not in the same proportion. As for example, if the interval at which the two energies balance each other be diminished—as by compression, &c.—the repulsive ability becomes the stronger or more active and the molecules are repelled from each other when the pressure, &c., is removed.

The principal phenomena of elastic bodies are the following:—First. That the elastic material (the elasticity being supposed perfect) exerts the same energy in endeavouring to restore itself, as that with which it was compressed or bent. Secondly. The energies of elastic substances are exerted equally in all directions, but the efforts chiefly take place on the side in which the resistance is least. Thirdly. When an elastic solid is made to vibrate by a sudden stroke, the vibrations are performed in equal times, to whatever part of the body in question the blow may be communicated. Thus, sonorous materials always emit sounds of the same pitch, and the difference of the note depends on the greater or less frequency of the pulsations of the sounding object. Fourthly. A substance perfectly incompressible cannot be elastic, therefore an object entirely solid has no elasticity, and hence also the small degree of resistance belonging to liquids, which are eminently incompressible.

Further touching Elasticity.

The hardest bodies, such as ivory, glass, marble, and ice, are said to be the most elastic or springy of all substances; yet india-rubber, when warmed, and thus rendered *soft*, is found to be the most tensile or resilient material with which we are acquainted. It is true that an ivory ball dropped upon a smooth stony slab will rebound to a height nearly equal to that from which it was allowed to descend; but this springing up does not proceed from the fallen sphere becoming flattened and then springing out again, as commonly stated, but from *electric energy*; in fact, the structure of the ball would be broken up, rather than become indented.

If materials from concussion were pressed inwards, and then—generally supposed—flipped out again, the larger the surface coming in contact with a solid object, the greater would be the recoil; but this is not the case, but exactly the reverse. This disengaged object in question merely touches the marble flag at a point and rebounds,

not from the springing out of the depressed surface, but through the electro-magnetic reactive energy, occasioned by the earth or slab, discharging its aroused resident electricity on to the surface of a non-conductor of this fluid; for if a globe made with metal had dropped upon a stony flag it would not have recoiled, yet a spring made with certain metals is a hundred times more elastic—as it is termed—than a strip of bone the same thickness.

Again, if the ivory ball in question had fallen with the same amount of energy upon compact *powdered* bone-dust, it would have rested dead where it dropped, because the major portion of the electricity of the earth and the minor quantity on the sphere, would have been discharged into and from the many *points* presented to the approximated substances.—(See “Resistance,” sec. 35, 36, 38, and 47; See “Sound,” sec. 358.)

Further: Some natural philosophers have divided certain material bodies into *elastic* and *inelastic*. The *elastic* corporealities, say they, are those capable of being compressed into a smaller bulk, and of recovering their dimensions when the condensing energy is removed, as observed relative to the atmosphere and gases. The so-called inelastic bodies, such as water, mercury, alcohol, and liquids generally, were formerly supposed to be incompressible; but the term was incorrect, for the phenomena of the transmission of sound through water and other fluids indicated that they were capable of being condensed. Moreover, the quality shown by mercury of becoming a vapour* *in vacuo*, and water assuming this state under common conditions, and also of being formed into steam, the most intensely elastic body known (except chloride of nitrogen and other fulminating compositions), ought to have taught our forefathers that all fluids were more or less capable of condensation.

But the compressibility of fluids has been incontestibly proved by Caxton and Perkins, who clearly demonstrated that oil, water, and mercury, &c., occupied less space under the pressure of the air, and other *media*, than when *in vacuo*.

There can be no doubt that even our atmosphere, and all other gaseous bodies, might be compressed into the fluid, and even solid, state, if sufficient pressure could be applied to them. Thus Faraday condensed certain gases into liquids, and he even succeeded in solidifying carbonic-acid gas by compression.* On the contrary, we shall no doubt in coming time be enabled to convert all solids into the

* Vapours are said to differ from common air and other gaseous elements, by losing the form of elastic existence, and returning to a state of liquid when compressed or their temperature reduced.

gaseous or vaporous form, by overcoming chemical affinity and certain other varying contingencies, which hold in apposition the atoms making up bodies.

87. (b.) **DIVISIBILITY** of matter is that quality which every substance possesses of being separable into parts, and these again of being sub-divided into smaller portions, &c., nor can any limit be placed to this capability of division.

Observation and experience prove that all bodies of sensible magnitude, even the most dense, consist of parts which are separable. To the practical partition of matter there seems to be no assignable limit.

A grain of musk has been kept freely exposed to the air of a room, the doors and windows of which were constantly open for a period of ten years, during which time the air, thus continually changed, was completely impregnated with the odour of musk, and yet at the end of that time the particle was not found to have perceptibly diminished in weight. We can only attribute this result to the extreme minuteness of the division of the odorous particles of this substance. Camphor, on the contrary, rapidly loses gravity whilst giving off its effluvium.

Odorous exhalations consist, like heat and electricity, of imponderable matter; hence, so long as the musk kept intact, it continued to throw off its inherent unparticled essence-fumes. But the camphor rapidly ejected its atomised material constituents as well as odorous undulations, and, of course, as its substance became exhausted the combined scent-undulations ceased also. The mummy-coffin that was constructed 5,000 years ago still gives off the odour of the wood with which it was made.

Relative to the silicious shields of a species of *navicula* found in Tripoli, called rotten-stone: it is calculated that 167 millions of these shells would weigh no more than a grain. Some of these infusoria from a single individual, only to be perceived by means of a high magnifying capability, is calculated to generate 170 billions in four days, about as many as would be contained in two cubic feet of the polishing-slate of Berlin.

The *Bovista gigantum*, a large fungus of the puff-ball tribe, has been known to increase, in a single night, from a mere point to the size of a huge gourd, estimated to contain 47 billions of cellules. Cell formation is an inherent property of living bodies, and is found in every form of organic matter, just as crystallisation appertains to the mineral world.

Fungi.—Mr. Fries speaking of them, states that their sporules (the productive substance or seed of flowerless plants) are so infinite, that in a single individual of the *Reticularia maxima* "I have reckoned,"

he says, "10,000,000; they often resemble thin smoke, and are frequently raised by evaporation into the atmosphere, and become dispersed in many ways, by the wind and insects, &c., it is difficult to conceive a place from which they can be excluded; they have been found germinating in the lungs of a living man and often suffocate fish."

The transparent wings of certain insects are so attenuated in their structure, that 50,000 of them placed over each other would not form a pile a quarter of an inch in height. If a wire with the 432 hundred-millionth part of an ounce of gold spread over it, be dipped in nitric acid, the silver within the coating will be dissolved, but the hollow tube of gold which surrounded it will still cohere and remain suspended. The blood globules of separate species of animals differ in figure and magnitude. In man and all creatures who suckle their young, they are perfectly round. In birds and fish they are of an oblong spheroidal form. In a drop of blood which would remain suspended from the point of a fine needle there must be a million of globules.

Small as these globules are, the animal kingdom presents beings whose whole bodies are still more minute. Animalcules have been discovered whose magnitude is so diminutive, that a million of them, as before noticed, do not exceed the bulk of a grain of sand; and yet each of these creatures is composed of members as curiously organised as those of the largest species; they have life and spontaneous motion, and are endowed with senses and natural impulses. They progress with astonishing activity, nor are their motions blind, but evidently governed by choice, and directed to an end. They use food and drink, from which they derive nutrition, and are therefore furnished with a digestive apparatus. They have also great muscular ability, which acts on their limbs, are susceptible of the same appetites and obnoxious to the same disappointments as higher orders of existence.

Spallanzani observes, that certain animalcules devour others so voraciously, that they fatten, are indolent and sluggish from over feeding. After a meal of this kind, if they are confined in fresh distilled water, so as to be deprived of all food, their condition becomes reduced; but they gain their spirit and activity, and amuse themselves in the pursuit of the more minute animals, which may be supplied to them; they swallow these without depriving their prey of life, for, by the aid of the microscope, the one has been observed moving within the body of the other. Must we not conclude that these creatures have vessels, muscles, nerves, circulating fluids and all the concomitant apparatus of a living organised body? And it so,

how inconceivably minute must these parts be ! If a globule of their blood bears the same proportion to their whole bulk, as a globule of blood does to our magnitude, what capability of calculation can give an adequate idea of its minuteness ?

88. (c.) CRYSTALLISATION.—Liquids congealate or crystallise in freezing, and if æriform bodies could by any means be reduced to the solid form, they would without doubt manifest the same result, as witnessed in the case of carbonic acid gas. Electricity, light, and heat produce remarkable results and both accelerate and retard crystallisation ; but we at present have no positive evidence to show that either of these spirituous non-gravitating principles has any direct influence in determining the natural forms of crystals. Electricity appears to quicken the process of crystalline aggregation—to collect more readily together those atoms which seek to combine—to bring them all within the limits of that influence by which their symmetrical forms are determined ; many evidences prove that polar magnetism has a *directing* influence upon crystallisation. It has been found that crystals of sulphate of iron, slowly forming from a solution which has been placed within the range of energetic magnetism, dispose themselves along certain magnetic curves, whereas the *arbor Dianæ* or the common silver-tree, produced under similar circumstances, takes a position nearly at right angles or diamagnetic to their curves. Certain groups of crystals are often found, in the earth, which show by their position, that terrestrial magnetism produced the phenomena they exhibited. Crystals are met with, exhibiting most microscopic characters, and also of an exceedingly large size. A crystal of quartz at Milan is three feet and a quarter long and five feet and a half in circumference, and its weight is 870 lbs.

89. (d.) IMPENETRABILITY is that character of a body by which a material dwells in its locality to the exclusion of another, so that it may be said, that no two things can simultaneously occupy the same place. Yet this impenetrability is more apparent than real, as regards masses, and can only extend to *atoms* of which a substance is composed, for when we dissolve a portion of a salt in a fluid, we do not increase its bulk beyond the contained water of crystallisation. Again, by mixing a pint of spirit with an equal proportion of water, the result is considerably *less* than a quart or the measure of the two ; thus showing that there must be spaces between the *particles* of one body capable of being occupied by the atoms of another, or that they are caused by catalysis (action by presence) to approximate each other, which from the escape of heat—where condensation takes place—would appear to be the case.

90. (e.) POROSITY is that state of the corpuscles of matter which

shows that there are interstices or pores between them, for no two atoms of a body can touch each other, nor can we conceive an ability or energy capable of bringing them into contact, for if this was effected, *compressibility* and *elasticity* could not exist as a quality of matter. In proof of the porosity of bodies it may be stated that if a vessel of wood containing mercury or water be placed over the exhausted receiver of an air-pump, they may by the pressure of the atmosphere be forced through the wood, and fall from the ligneous bowl in a shower into the receptacle underneath. Again: The action taking place in the buds of plants, causes the sap to rise through the body of the tree up into its branches.

90. (e.) *INERTIA* is said to be the property by which matter is incapable of putting itself in motion, or arresting its own progress, when caused by extraneous energy. (See "Motion.")

91. (f.) *COMPRESSIBILITY*, or that condition by which the volume of every body may be contracted into smaller dimensions. All bodies, in consequence of the porosity of matter, are contractible, though liquids resist compression with immense ability.

92. (g.) *FLUIDITY* is that state of a body in which its constituent particles are so slightly cohesive or adherent, that they yield to the lightest impressions. The term is usually confined to express the condition of the non-elastic fluids, and hence it denotes one of the three states in which matter exists, namely the solid, the fluid or liquid, and the gaseous. The state of fluidity is best defined as that in which bodies tend to form *drops*, as this disposition does not belong either to materials in a gaseous form, or to solid substances reduced to fine powder. The formation of drops arises from the circumstance, that the molecules of fluids adhere to each other with a certain tendency at the same time that they glide over one another, without any sensible resistance. A slight adhesion may be observed to exist between the corpuscles or atoms of matter, when water or mercury is placed on a flat metallic plate. They there collect into globules, and when slowly poured into a glass, will remain heaped up—as it were—above the level of the edge. The equilibrium of the particles of matter may be said to be maintained between two energies, the attractive propensity, which tends to unite the molecules, and the repulsive ability that inclines to increase the distance between them. The solid condition may be said to result from the predominance of the attractive magnetic energy.

If we increase the repulsive ability so as to impart an augmentation until it becomes equal to, or forms an equilibrium with, the electro-attractive energy, the particles exerting on each other neither attraction or repulsion, beyond the balance, the body will be in a fluid state.

If the repulsive propensity be increased—as by the introduction of heat—the corpuscles will be separated from each other to such a distance, that their mutual attractions will cease to be sensible, and then the body passes into the gaseous or vaporous condition. We may then pronounce that there is no stationary *natural state*, and that fluidity, solidity, the condition of vapour and the aëriform diathesis are only accidental, and determined by the temperature of the medium in which the body is placed.

93. (*h.*) **HARDNESS** may be considered as that quality of materials by which their molecules resist the action of any external application tending to alter their relative positions or impart to them any motion in respect to each other.

Hardness in mineralogy varies in degree according to the following scale:—1, talc; 2, rock-salt; 3, calc-spar; 4, fluor-spar; 5, apatite; 6, adularia (felspar); 7, rock-crystal; 8, topaz; 9, corundum; 10, diamond. Any mineral which neither scratches nor is grooved by any other of the above substances is said to possess the hardness expressed by the attached number.

94. (*i.*) **RIGIDITY** is said to denote the resistance to change of form, and is the opposite of flexibility. In mechanics it implies a resistance to change of form. Rigidity is often in the arts called *stiffness*.

95. (*j.*) **SOLIDITY**.—The term solid is applied to that condition of matter in which the attractive propensities of the molecules are greater than the repulsive, and the particles consequently cohere with greater or less energy. In *fluids* the attractive and repulsive abilities are balanced, with *gases* the repulsive prevail.

96. (*k.*) **DUCTILITY** or **TENACITY**.—A property of certain bodies, in consequence of which they can be drawn out at length without suffering any interruption of continuity or of their constituent particles. The term ductility is frequently confounded with *malleability*, or that property of bodies through which different forms can be given to them by pressure or percussion. In general, ductility depends, in a greater or less degree, on the temperature. Some bodies, wax for example, are rendered ductile by a small degree of heat, while glass requires a violent heat before it acquires ductility. Some of the metals—for instance, gold, silver, lead, &c., are ductile under all known temperature. The ductility of some metals far exceeds that of any other substance, as shown by the operation of the gold-beaters. Platinum and silver were drawn by Dr. Wollaston into a wire the 5,000th part of an inch in diameter. Glass, when well softened by the fire, becomes so ductile that it can be spun into threads as fine as that of the silk-worm.

The making of a wire from a bar of metal, or as it is termed, the drawing of wire, is nothing else than giving a new *set* to the particles composing the rod. Different metals possess the property of submitting to this new arrangement without giving way—which is termed *ductility*—in different degrees. Gold is most ductile, next silver, and platinum, and then iron, copper and zinc, tin and lead. Although the particles of the wire, are less close in approximation after the operation of *drawing* than they were before, yet they hold together more firmly—so that the *tenacity* of the wire or its ability of sustaining a great strain is augmented. A bundle of wires one-tenth of an inch in diameter, of such a size as to have the same quantity of material will sustain a weight of from 36 to 43 tons, and if the wire be drawn more finely so as to have a diameter of only one-twentieth or one-thirtieth of an inch, a bundle containing the same quantity of material, will sustain a weight of from 60 to 90 tons. For the sake of comparison it may be mentioned that a mass of hemp fibres glued together, will sustain a weight of 41 tons per square inch, whilst copper wire will not support more than 27 tons, silver only 17, gold 14 tons, and lead wire one and one-tenth tons per inch.

97. (L.) WEIGHT.—In physics, that property of bodies by virtue of which they tend towards the centre of the earth. In this sense weight is synonymous with gravity.

Weight in mechanics denotes the resistance to be overcome by a machine, whether in raising, sustaining, or moving a body.

98. (m.) GRAVITATION (from "*gravis*, heavy").—Every particle of *atomised* matter has a disposition to press towards, and, if not opposed, to approach to, every other developed corpuscle; but this is only true when ponderable atoms or bodies are oppositely electro-polar, for if their points of apposition be both positive or both negative, they will repel or fly off from each other, as witnessed by the approach of the like poles of suspended oblong magnets. A body which at the equator weighs 194 pounds, if transported to the poles would weigh 195 pounds. This result ensues from the *intensity* of the earth's magnetic undulations being increased in attractive energy.

Gravitation in regard to the Tides considered.—"The moon is said to be the principal agent in the production of the tides, but they are modified, both with respect to their height and the times at which they happen, by the action of the sun." It is assumed that the particles nearest the moon are attracted most, hence the rising up of the moveable waters, when the moon is on the meridian; but, in consequence of the rapid rotation of the earth about its axis, the spheroid equilibrium is never fully formed, for before the waters can

take their level the vortex of the spheroid has shifted its position on the earth's surface, in consequence of which an immensely broad and very flat wave is formed, which follows the motion of the moon at some interval of time. In the open sea the period of high water is in general from two to three hours after the moon's transit over the meridian, either above or below the horizon. The waters of the ocean are affected in a similar manner by the sun, but being less in effect only modify those of the moon.

At the syzygies (conjunction or opposition), when the sun and moon come to the meridian together, the tides are *ceteris paribus*, the highest; at the quadratures, or when the sun and moon are 90° distant, the tides are least. The former are called *spring tides*, the latter *neap tides*.

Tide wave.—Off Cape Horn, and round the whole shore of Terra del Fuego, from the western extremities of the Straits of Magalhaens to Stanton Island, the tide wave, instead of following the moon in its diurnal course, travels to the eastward, and a little further to the north the tide sets to the north-west. On the shores of Spain and North America, the tide is a day and a half old, at London two days and a half old, when it arrives. How does this fact account for two tides in the twenty-four hours?

Euler and Mr. Airy introduced the subject of fluid oscillations or undulations in their theories of the tides.—(“Penny Cyclop.,” vol. 27, p. 149.)

If we can divest ourselves of the witchcraft of attraction, and the pedantic display of irrelevant mathematics, we can have no difficulty in understanding the tides. “But we must look to facts, and avoid the closet fancies of those who never saw a tide. What is meant by the great tidal waves which go round the world in two or three days, we are at a loss to imagine. The maps of them will be monuments of the folly of theory, and of the weakness, above all, of the silly theory of lunar attraction, with which such dreams are associated. We never saw or read of anyone that ever beheld the great tidal waves of the ocean.”

The moon and planets add to their average motions certain oscillations about their mean places, the tides also consist of *oscillations* of the ocean about their uniform spheroid, which, but for the action of the heavenly bodies, would be carried round in the diurnal rotation of the earth.—(“Penny Cyclop.,” vol. 17, p. 43.)

The earth oscillates in exact periodic times like the other planets. There are fluctuations in the atmosphere and the mercury in the barometer rises and falls regularly twice in every twenty-four hours.—Herschel (“Astronomy,” pp. 216 and 333.)

If the moon has any attractive influence upon the earth (more than what consists in the natural relation existing between the two bodies), why, when the moon is in conjunction with the sun, does not the water become *more elevated* on the side of the earth next to these bodies, as might naturally be expected if such attraction existed? Also substances upon that side of the earth would not then weigh nearly so much as when the moon was otherwise situated. Also when the moon is on the opposite side of the earth, and the earth sustains a position between it and the sun, why is not the elevation of the water equal at all portions of the earth? For if the moon and sun exert an equal influence, the result should be equal heights of water over the earth. A body rotating like our planet on its axis has the greatest tendency to throw off substances in the direction in which it revolves. As the earth turns on its axis, at the present time once in twenty-four hours, it must of necessity produce two elevations of the sea, especially as the waters surround the whole globe. Every twelve hours the aqueous element would be elevated at the extreme east and extreme west, or, in other words, at given antipodes of the earth. The elevation of water once in twelve hours is a result of the centrifugal tendency that the globe creates in one half of its period of rotation, corresponding tides being thus produced on the opposite side of the earth.

It was strange that so many calculating thinkers should have upheld the theory broached by Newton, relative to the influence of the moon producing the flow of the tides. But it may be said of most school philosophers, and Newton in particular, that they were and are chiefly *material fact hunters*; the unseen or intangible have or had no attraction for them. Newton was often little beyond a learned walking bundle of figure-calculations and handler of mathematical and other instruments, whose reflective faculties, like Lord Bacon's, was too large for the other parts of his brain. He resembled many of those belonging to scientific societies, incapable of feeling or appreciating living natural productions. For instance, he was accustomed to term poetry ingenious nonsense, and his opinions of music and sculpture were as indifferent as those adduced relative to poetry. The forest and flowers of the earth had no attractions, and though he studied colours they had no charms for him. His friendship, or rather associations, alone extended to those who, like himself, dealt only in figures and mathematical apparatus; and, as for the passion of love, he, like Michael Angelo, Charles the Twelfth of Sweden, and William Pitt, avoided, when possible, the society of women and all their winsome attractions. Many other men who have gained eminence, were one-ideal or so absorbed in a single

pursuit that they were dead to most others. The sculptor and painter often think more of the marble and tools in the one case, and the canvass and pigments in the other, than they do of the lovely forms of *feeling* they are trying to represent. Again, the botanist has no elective sensibility towards the beautiful flowers he gathers ; all his thoughts and leanings are engaged relative to their class and structure, and in pursuit of these, he tears the culled flower into pieces.

99. (*n.*) DENSITY in physics denotes the quantity of matter which a body contains under a given or determinate surface ; for example, a cubic foot. The quantity of matter in any substance is called its mass, and is measured by the weight of the body, to which it is always proportional. Hence the density of any substance is great in comparison as its gravity is great and its volume small, or the density of bodies is directly as their masses and inversely as their volumes. It follows also from this definition that if two objects have the same size, their densities are directly as their masses or weights, and that if two bodies have the same mass or weight, their densities are respectively in the inverse ratio of their volumes. The density of a body is also proportional to its specific gravity,

100. (*o.*) TRANSPARENCY is that quality in certain bodies by which they give passage to the rays of light, and is generally supposed to be a consequence of the homogeneity of the matter of which they are composed.

101. (*p.*) TRANSLUCENCY. — Semi-transparency. — These terms are chiefly used in descriptive mineralogy as applied to minerals which admit of a passage of the rays of light, but through which objects cannot be definitely distinguished.

102. (*q.*) OPACITY.—In optics that quality of bodies which renders them impervious to or incapable of transmitting light.

103. (*r.*) MALLEABILITY (from *malleus*, a hammer).—The property of being susceptible of extension under the blows of a hammer. It is especially characteristic of some of the metals, and in this quality gold exceeds all others. The leaf so produced from this metal is not more than a two-thousandth part of an inch in thickness, five grains may be thus extended so as to cover a surface of more than 270 square inches.

ORGANIC MAGNETISM AS A MORAL HEALING-POWER.

In these our "days of progress," if we are in any sense seers, surely the one thing that must strike us, and that most painfully, as lying at the root of all our social miseries, is that we have set ourselves steadfastly to ignore all spiritual truth in whatever form presented to us. Old True Thomas, of Chelsea, raised his voice years ago and warned us of what was coming: "The root of all our miseries is that we have forgotten God;" but the warning, as the warnings of prophets usually are, passed unheeded, and we drift on, anchorless, into the vortex in which we now are—faithless in man or God. Then came the message to a younger man, clear and plain, to go forth from his peaceful home of spiritual light and love, and tell us more plainly still what was the future that lay before us, "Belief in a foolish God involves belief in a brutish man." We have forgotten God and set up a Fetish, and as is our Fetish so shall we be animals, intellectual perhaps, but still brutish. And these two prophecies, have they not been amply and terribly fulfilled? and to their fulfilment and the triumph of the Gospel of God, the two prophets—the old and honoured master and his scarcely less glorious pupil—are sorrowful but stern witnesses.

And we to whom light has been given, who are able to recognise in man (great and glorious as he is as an animal and a knower) a third life, higher and nobler than either his animal or intellectual life, a life that reacheth farther, even to the throne of God,—what are we doing for others, that their spiritual power may be developed, that their eyes may be opened upon unseen things in heaven and earth, and that they may become (not angels or falsely spiritual) but men and women, their being developed in just proportion—body, mind, and mighty spirit brooding over the dark waters?

What are we doing? I say. Standing idle? with a mighty power in our hands, with a firm ground on which we may plant our lever and move, each of us, a little world.

I have written down here the substance of my thoughts, minus a great deal of pleasure and hope, when I saw that the clear and simple system of magnetism published by my own teacher, Baron Du Potet, of Paris, had been given to English readers in a good translation; and I determined at once to write and show to such readers of HUMAN NATURE as might care to read, how they might, with these simple rules once thoroughly learnt, become, in a way they little

dreamt of, men helpers, and thus, in the best sense of the word, fellow-workers with God.

An American gentlemen to whom I was talking a short time ago, on the subject of the "governing and lifting up" of men, said to me, "But, Sir, as far as I can see, there are very few men who have got any handle that you can lift them by;" and in many cases this is but too sadly true. We have to form our handle, and there is but one way in which we can do this, and that is through creating between any poor creature and ourselves, a union of nature, a common life, by making him a partaker of such portion of noble spiritual power as we ourselves possess.

If we know anything of the truth that the science of Animal Magnetism and "Spiritism" has brought to light, we know that the means of communication between spirit and spirit (as long as we are in this mortal envelope) is through the nervous system, and by means of the electric or nerve fluid—I use the term for lack of a better, to express my meaning; and this knowledge must be the foundation of all our helpfulness.

Supposing you, then, good reader and friend, wish to go forth on some such errand of practical helpfulness as I here propose to you, I should advise you to begin in a direction where much of hearty human help is needed and little given, that little ever being, for the most part, unwise and ineffectual.

In your neighbourhood, probably among your acquaintances, there is some young fellow of seventeen or so, who has spent the last three years of his life at one of those hospitals* upon earth, an English school, where his father had sent him, imagining in bland after-dinner self-congratulation that his boy would in short space develop into the ideal Arnold Boy, scorning all baseness, monitor, prefect, and what not in addition; instead of all which glory, the boy is again at home, where half of his terms have been already spent, "so delicate," with fast-diminishing brain or bodily power—perhaps both—the result of woful sin, committed probably in utter ignorance of the nature or consequences of his act, a pitiful spectacle, truly hopeless, helpless to men and angels,—and the parson has preached to the boy *honestly*, of help and hope in God, and he has listened dull eyed, the avenues of the spirit too blocked for such sound to pass them; he has no ears to hear, and eyes to see, and the good man's words—worthless, it may be, in themselves—are dead and meaningless to him, as those of the well-

* Since writing this, that awful, heart-rending story has come to us from Christ Hospital—a story which ought to rouse in us all English shame and indignation, until the hateful system that tolerates this brutal barbarism is effectually examined into and reformed.

known Church prayers. And the doctor, too, has examined him *dis-honestly*, and has promised salvation through raw meat and beer, well knowing his powerlessness; and the father rages over his wasted guineas, and the mother sits weeping with broken heart; and the old major next door says jocosely to his wife that, did he believe in Darwin, that boy would be an instance of retrogression; and the boy is dying alone his awful spiritual death.

You then, going to such a one, must first win his heart, probably a noble and good one, that will henceforth beat gratefully with yours on through eternal years, in happy devotedness and educated friendship. Interest him in mesmerism, a thing by no means difficult if you have any power and can show him its marvellous physical effects, being careful to avoid making a mountebank of your subject, however; then or at any time, he will now, there is little doubt—eager of novelties, as such minds always are—ask you to experiment upon himself. Your time of usefulness has come, thank God, and keep quiet.

Ask him to sit down opposite to you in an arm-chair, leaning back. Take his hands, placing your thumb on the middle of the root of the hand where it joins the wrist, rather to the thumb side, grasp firmly and look steadily into his eyes, longing to be helpful to him. Before very long the eyes will close. When you see this take place remove your right hand very gently, and hold it opposite to the root of the nose, at the distance of a foot or rather more; then slowly and evenly, according to Monsieur Du Potet's method, lower your hand as far as the pit of the stomach, then raise it to the forehead again, continue to move it thus down and up for about ten minutes, keeping it each time for half a minute or so steadily opposite the upper point. Now, speaking very softly, address your subject, "Are you asleep?" If there is no reply, repeat your question more distinctly and slowly. He will then probably reply either "Yes" or "No." If the former, sit down beside him and, taking his hand, talk to him very tenderly about his condition. His moral insight, remember, is now as clear as yours, therefore be very gentle and very calm. He will, so at least have I usually found it, make to you a full and candid confession of much that will probably be painful to listen to, and will beg your help "to move upward, working out the beast." If you feel that you could not honestly bear to hear confession such as this made to you, I adjure you by all that is sacred, forbear to meddle in this vitally important matter. Remove your hand, when he has finished speaking and lay it on the top of his head, covering *benevolence*, *reverence*, and *self-esteem*. Promise him to do all you can to help him; tell him of the necessity for effort, and of the love of the All-Father, ready to pity and to help; then for a few moments keep perfectly still

and simply *will* for him a noble life. Pass the magnetism off his head and begin talking to him of ordinary subjects. *

Continue this daily, encouraging your subject to interest himself in some healthy pursuit for which he has some natural talent; if possible, some fine art in which head, heart, and hand may learn to work together. Help him to recognise and to do his common home duties, for this is a child that is in your hands and you can impress him as you will—an awful trust, to be accepted in humble trembling joy, that so he may rise as reward for duty done to men, and consequent love of them, into the unknowable love of God, from the life of Leah,† gathering flowers for herself (her own kind) to the life of Matilda, empress among the lilies, wreathing them, the work of God's hands passing through hers.

Farewell, dear reader, I have sketched here but one case in which this blessed power of yours, not only for healing but for lifting up, may helpfully be exercised, and the writing of this paper will not have been wholly in vain if it enables you more fully to recognise the infinite use to which organic magnetism may be put in the curing of moral as well as physical disease.

Go forth then, healing messenger, casting around your calm beautiful light, reflected from heaven itself, and this star-light of yours shall not go out, but "turning many to rightness" you shall shine "as the stars for ever and ever."

A CAMBRIDGE UNDERGRADUATE.

• COMMUNICATIONS FROM THE SPIRIT "WOLFSTAD," AN ANCIENT BRITISH CHIEFTAIN.

(Continued from p. 474.)

In forwarding the continuation of these remarkable communications through Mr. A. Duguid, of Kirkcaldy, I would suggest to the readers that they sink the idea of personality and subordinate it to one capable of viewing these revelations from a spiritual standpoint; for, emanating as they do, from a spiritual plane, the spirit or Spiritual Being gives the spiritual idea, ultimated as natural history and events, and therefore the details are of a different order to those

* When in his normal condition, avoid most carefully all mention of what has passed in the mesmeric trance.

† Dante, "Purgatorio," xxviii.

recorded by natural men on the natural plane, and, consequently, the chronological order may not at all times be literally correct; and all spirit-communications are, more or less, affected by the medium or channels through which they pass; in their origin they are purely spiritual, and become apparently personal and historic when they descend to the natural plane of thought and fall into human language.

For the giving of spirit-messages two mediums are required, one in the flesh, the other disembodied, and both alike are but instruments used by a still higher and more interior Intelligence for the time or state of being.

We have yet to learn vast knowledge concerning that wondrous structure the human organism. Who has realised the fact that this organism is as a harp of ten thousand strings, and that every thought that passes through our mind and makes us conscious of our being,—that every emotion, from the gentle zephyr of a loving affection to the wildest passion of an ungovernable impulse, is but the touch and action of invisible spiritual beings, who impart to us the life-consciousness, and of whom we are the representative forms while in the physical body? And yet such is the sight presented to the vision of purely spiritual beings.

Hence it is that “Wolfstad” is not so much a personal spirit as an intelligence in whom is centred the thoughts of many for the time being. The name itself indicates the home of the wolf, and though in its natural aspect, the wolf is an animal that preys on other animals of weaker power; yet there is a dual aspect, and when the wolf and the lamb lie down together, that which aforetime had impelled to deeds of violence, now seeks to protect, and both are fed by food which imparts a different life-energy; thus “Wolfstad” is a representative and a prophecy of that good time now advancing, when the guiding hand and protecting care of invisible beings (to mortal ken now) as ministering spirits, shall be seen and acknowledged; and what “Wolfstad” was, as a personal being in his days, so are we in ours—living in the transition state, representing the decaying power of the past and the new power of the future, and this in accordance with the great law of spiritual evolution.

WILLIAM OXLEY.

Manchester, October 20.

WOLFSTAD.

We now place before you in as plain a manner as possible, our connection with three epochs spoken of in our former communication, and will endeavour to link them to our own history as we passed through the throes of a great spiritual dynasty, and afterwards will embrace in our thoughts those gleanings of truth which can be

gathered up from our own immediate connection with the events referred to.

We allude to the position of our forces sustaining that power known as the Pictish or Caledonian ; to that form of power coming in contact with the eastern nation, and the subsequent overthrow of that dynasty ; and lastly, the going into captivity of the leaders and the immediate outcome of that captivity. These three subjects form the leading features of our former communication.

As we proceed, we shall have to stand aside for higher and nobler purposes, but for the present work, the Great Intelligence has deemed us sufficiently strong to carry forward His bright designs.

As we unconsciously pass along and mingle in the strife, we find ourselves, now as then, richly rewarded by the responsive gratitude which cheered the hearts and homes of those for whom we fought ; for the true soldier counts it his highest honour to receive the gratitude of the nation for whom he fights.

Previous to our final defeat, we had calculated on the dissolution of that long established power which we then represented, for as we studied the records of the past ages, we could point the finger to some monuments of truth, significant and momentous in their importance, of the future prosperity of the power we were associated with. Those recorded sayings came from inspired lips and bore their testimony to the truth of the living fire, and those ancient records were profuse with prophetic revelations as they neared the great impending crisis.

From the significant symbol, known only to the initiated ones, there came the plain recorded statement, that our name and power would soon cease. We cannot find the records or biblical collection necessary for our purpose, as they have been torn from their resting place by the same power that, in its blindness, sought to crush what it styled the *heathenism* of the past ; and this is but an oft-repeated act, for even the poor Indian treads the soil underneath which lie the inviting treasures which man does value most.

* The time has now arrived when the hand of Truth will, from amidst the ruins of the ancient past, cull the beautiful blooms of spiritual life, the unrecorded experiences of witnesses who lived and acted amid the scenes of vast interest in the mighty past, down to the present times.

We passed our time, nerved by a holy purpose and resolute will to serve our people and kindred, and under this impulse we called upon others to aid us in carrying forward the holy work ; we often considered our position as marked in the chart of the spiritual government, and having our destiny arranged by wise and loving ones. We reasoned thus, that to fight a glorious battle was more consistent with concerted spiritual action than an ignominious defeat, and therefore, at the moment when the spiritual treasury was replete with dark forebodings of coming destruction, we nerved our energies and strengthened our arms to inflict a great retribution on that power which, in its fury, and blindness sought to crush the life which gladdened and illumined the homes of our land.

Revelation had recorded a coming time of peace, of inward and glorious prosperity; and this fact gave inspirational fire to our poets, who sang in exalted strains of the resurrected power of the glorious future, and in magnificent grandeur spoke of that future, when, amidst the surroundings of abundance, peace, and prosperity, the sweet voice of the spirit-world would melt the heart and inspire the tongue to utter forth the euphonious notes of the spirit's native home; when a circle, not of stone but of minds, united, and in a temple dedicated to the Goddess of Truth, would offer a sacrifice of incense sweet, and perfumes more delicious than ever rose from Druidic, Chaldean, or Hebrew altars.

We would fain awaken sympathy, and love to start a tear as we recount the overthrow of that great spiritual dynasty from its citadel of strength, and then left to moulder amid the ruins of bygone ages; and the sweet echoes of our bards shall revive the latent soul-sympathy, by their recorded experiences of peace and war, of happiness and misery, of prosperity and adversity; and we will tell you how they sang the soldier to battle and cheered the husbandman in his toil, how they fired the mothers with true devotion, and gave to sons and daughters pure and heroic impulses; but they are gone, and their sweet words have passed away; but will their voices never sound again? will those monumental stones of strength never speak? will those temples of dedicated sanctity never utter forth their tomes of lore? Yea, for we descry a light far more radiant than ever lit those ancient piles, gathering around in form and splendour, which will deck with greater magnificence, and crown with a coronal beauty more resplendent, the same grand truth which in our day was but a feeble spirit-flame, and by contrast was as a flickering light from the dying embers of the watchman's fire.

We counsel you not to allow your thoughts to be led into the paths of doubt, or to engender that credulous disposition which craves after the mysterious, while we pourtray these scenes to you, because in these we divulge the secret of the great past and show how closely they are allied to the wants of the present age in which you live.

We communicate because we find ourselves fulfilling the holy mission and carrying out the purposes of ruling minds. We behold our work in the light of dispensing gifts to the needy, food to the hungry, yea, of life to the dead: many minds will trace the finger along the written page and mark the place that meets the age in which they live; the higher food these beings crave; their minds a rich abundance have, and with the eye of seer shall trace the future history of their own race.

On a former occasion we showed the cause why we marshalled our hosts for the day of battle, but we may state here, that there was no standing army in the country then, for we were not warriors, born with the spirit of war in our veins; our national mind was taught to love peace as the only condition of prosperity and happiness, but when, on certain occasions, the signs were given from the hill-tops for the sons of war to assemble, we had no compunction in meeting

and mingling with our warrior brethren, because we knew the leaders were consecrated ones and inspired only by the highest and truest motives, therefore ambitious projects had no place amongst them, nor did these influence the minds of our country's defenders. We would in this respect claim a position superior to those who rule and dictate to you in present times. You have your armies of men whose only occupation is to feed the ambitious thirst of power, and by cultivating the art of war and the use of engines of destruction, seek to overcome the weak and wrest from them that which they have not the power to hold, but which is their own by hereditary right.

Nevertheless, though we possessed not the power to permanently maintain our right to the soil and heritage of our country, yet we cultivated that martial spirit which had its beginnings in the chanted song on the mother's knee, and through the inspired words of our bards was conveyed to us, patriotism the most loyal, and love of country of the holiest and purest kind.

You know now the secret of our country's prowess, and the indelible stamp which is given to our country's claim to be recorded in the annals of past nations. Is it not true that it has been torn from its pedestal of strength, that it has been reft of its garments of beauty and worth, and naught remains but the dim recollection of horrid cruelty and barbaric deeds as the heirlooms to posterity of a nation which we now seek to wrest from oblivion, and once more to place it on the foundations of light and sanctity, yea, to give the skeleton of present thought on this subject, the fleshly garment of warmth and beauty, and to supplant the meagre knowledge which now pervades historic lore, and where naught is seen but the gaunt spectre of hideous cruelty and diabolic deeds, that shrivel up the thoughts and forbid the contemplation of that ancient people and times amongst whom and in which we lived.

This is the purport of our mission to you, viz., to claim for our people and kindred a place in the archives of recorded history. We shall soon awaken interest when we trace, not the remains, but go to the very base of our thoughts and actions, and now flowing through the present mind of Scotland.

Historically you have not only vestiges of our existence in those monumental stones which are the symbols of our religious character, but there are in your midst, things, names, and thoughts which inspirationally link you to our national existence and its unavoidable destiny, and which clothes your very thoughts in garments of our own language; and in the pervading sentiments and ideas of your own dear and noble Scotia, you are inheriting the valour nursed in our homes, and perfected under the inspiration of our priests, bards, and commanders, and you possess energies and actions, which have been moulded and developed by the deep heating tones of spirit-voices and the inspirational light of spirit-presence. But more of this anon, and for the present Adieu!

(To be continued.)

CHAPTERS FROM "THE STUDENTS' MANUAL OF MAGNETISM."

TRANSLATED FROM THE FRENCH OF BARON DU POTET.

(*Continued from p. 465.*)

II. MORAL EFFECTS.

These phenomena often occur simultaneously with the preceding ones, but they differ essentially from them, being to the mind what the physical effects are to the body. They are, by their marvellous and incomprehensible appearance ill suited to enlighten the minds of the masses, which they overwhelm rather than convince. They have misled the mind of more than one magnetiser and will be the cause of many extravagances. Their spontaneous development cannot allow us to doubt that Mesmer was acquainted with them, though he did not impart the knowledge of them to his disciples. It is to one of them, the Marquis of Puységur, to whom we are indebted for the first observation of lucid magnetic sleep, a complex state to which he gave the name of somnambulism.

1. *Somnambulism.*

The magnetic agent, in addition to the properties which we have already noticed, possesses a sedative virtue and consequently exercises a soporific or dormitive action upon a great number of magnetised persons. Thus it is not uncommon to see a person previously wide awake fall slowly or suddenly into a profound sleep without the administration of opium or any other narcotic. You have done nothing more than make certain passes with your hands over the patient's countenance; all his senses have become deadened; not a single impression from without reaches him; he is overcome, annihilated, as if dead; he feels nothing else but you, a mysterious communication being established between your two nervous systems.

Here is a nearly exact description of this marvellous phenomenon, given by Dr. Husson when speaking at the Academy of Medicine:—

"When somnambulism is produced by magnetism, the person falling into this state acquires an extraordinary extension of the faculty of sensation. Many of his external organs, generally those of sight and hearing, are benumbed and all the operations depending upon them take place internally. The somnambulist has his eyes shut, he sees nothing with his eyes, he hears nothing with his ears; and yet he sees and hears better than when he is awake. He hears and understands only those with whom he is in communication. He is subject to the will of his magnetiser, except in the case of anything hurtful to himself or anything which is contrary to his ideas of justice and of truth. He feels the will of his magnetiser. He sees or rather perceives the interior of his own body and that of others, but generally only those parts of it which are not in a natural state, and which disturb the general harmony. The remembrance of things which he had forgotten when awake returns to his memory. He has previsions and presensations which under many circumstances may

be erroneous and which are limited in their extent. He speaks with wonderful fluency. He is not exempt from vanity. He improves for a certain time if he is well managed, but if badly directed his mind wanders. When he returns to his natural state, everything which he felt and everything which he thought while in a somnambule state is blotted from his memory; for these two states are as foreign one to another as if the somnambulist and the man awake were two different beings."

Then continuing he adds:—"Modern observers assure us that in this somnambule state, the principal phenomena of which we have just analytically exposed, the persons magnetised have a lucidity which gives them positive ideas upon the nature of their maladies, upon the nature of the diseases of those persons with whom they are placed in communication, and upon the kind of treatment to be followed out in these cases."

Read what has been written upon this subject by De Redern, De Puységur, Deleuze, Rostan, Georget, Bertrand, &c.

If, however, you are unwilling to accept the testimony of these numerous intelligent witnesses, magnetise yourself and you will undoubtedly produce the singular phenomenon of magnetic somnambulism. I was at one time in your position; I did not believe; my reason rejected all these wonders; but having myself produced them, I was obliged to accept them as a reality. More than five hundred persons in whom the magnetic sleep has been produced have passed through my hands or been submitted to my observation.

I magnetised at first without having had any instruction; that is to say, I repeated the movements of a magnetiser who scarcely knew his trade. He was an ignorant man, and yet he produced facts by virtue of that law with which I have made you acquainted, viz., that every human being possesses magnetic power sufficient to enable him, if he wishes, to act upon the nervous system of another person by causing a momentary disturbance of it.

Take care! you have produced the fact, but the scientific explanation of it is still wanting to you; this you will not obtain all at once, for it is only study which can give it to you. You possess an instrument,—you must learn to make use of it.

When you obtain your Doctor's diploma, you think you are qualified to practise because you have studied Greek, Latin, anatomy, pathology, and medical science; but in this you are mistaken, for experience and practice are more necessary to you than study.

You may give a man a palette, a brush, colours, canvas, &c., &c., but that does not make him a painter; he needs long practice, and often after the labour of a lifetime he never attains excellence. He paints his pictures—as many doctors prescribe their medicine—without art, without science, without genius. Perhaps he had within him that which constitutes a great artist: an enthusiastic mind, a passionate desire to learn from Nature and truth; but he did not know and no one told him how genius comes! It comes by study, by nothing but study.

Rest is only intended for labourers, for merchants, and for accountants. The doctor, like the artist, ought to work continually; it is only at this price that nature sells him what others think she gives him: a marked superiority over those who surround him. I should wish, in the study upon which you are entering, to guard you against the embarrassments and troubles by which you are sure to be assailed. I should wish to be your companion, perhaps your master, in order to initiate you more promptly into some secrets of the new art. This, however, I can only do by my imperfect descriptions, which feebly reflect a truth, the greatness and beneficial effects of which are not yet properly appreciated. A child who is learning to walk sometimes falls, but he gets up again; you are at present like a child; some day you will be able to walk alone.

Do not listen to those magnetisers who, despising all study, may say to you: In magnetism, science is not necessary; the magnetic agent does everything! Remember that Nature herself sometimes goes astray, and that knowledge and experience are necessary in order to be able to rectify her wanderings and deviations. Magnetism ought no longer to be practised by the ignorant, for ignorance only produces blind faith and imbecile fanaticism. Puységur taught his cook to magnetise, but he was always at hand to superintend his operations and give advice. I remember with regret, but, I confess, without shame, that an exaggerated belief once caused me to talk absurdly, and obstinately to magnetise persons whose disease could in no way be favourably influenced by magnetism.

The most difficult thing is to learn how to manage your somnambulist. You think you can govern him, but he is a Proteus; to-day he is constant and regular, you obtain wonders from him; to-morrow he will be full of imperfections. Not being able to foresee such a sudden fall, you are inclined to despair. Never fear, he will again become sublime, and you will admire him as if nothing had happened to disturb your confidence in him.

Is it possible to simulate somnambulism? When a novice in the art of magnetising has once or twice produced the somnambulant state, he becomes too confident, and thinks that nothing is easier than to bring on this crisis; he neglects to make a careful examination, and if the eyes are only shut, he imagines that the patient is asleep. I add that he is extremely easy to deceive: his faith is so great, he believes so firmly in the impossibility of resisting his, that he neglects every rule which prudence demands.

It was not thus that I acted at the commencement of my career; and even now, though I have never been deceived, I am as cautious as if I expected deception, for I always make a careful examination before deciding that the person is really in a magnetic sleep.

You will say, how can one credit such dissimulation? My dear friends, those honest people who accuse you of imposture will furnish the first examples of it. If they succeed in deceiving you, they will convince the spectators that there is no reality in somnambulism, that all the pretended sleepers have acted as they have done. This

mystification, as they call it, has occurred frequently; this clumsy snare has been laid for many magnetisers, some of whom have been caught in it, and their proselytising zeal rewarded with laughter and derision. I could quote many anecdotes of this kind which might be thought very amusing, but I am ashamed of such conduct; and when any deception has been attempted in my presence, I, guessing the intention, before it could be carried out, have made the dishonest person who had formed the design of deceiving me thoroughly ashamed of himself. If people would only make good use of their senses in examining, fraud would no longer be possible; so many changes take place in the body, that inspection alone ought to enable anyone to decide at once. The pulse, if necessary, may also serve as an indication, for it is invariably either very much accelerated or the reverse. The respiration is also altered, and consequently the animal heat undergoes considerable changes.

Classification of somnambulic faculties.

There are several degrees in somnambulism; but, like the senses, when you try to describe them the number augments, and you soon lose yourself. Nevertheless I here give an outline of those most frequently observed.

1. *In many magnetised persons.*—Coma or sleep without perception, and also without voluntary manifestations. Kind of lethargy.

2. *In a certain number.*—Sleep with a commencement of perception, but confused and having no precision.

3. *In a small number.*—Lucidity or internal sight, with instinct of remedies for themselves. Prevision of what effects and concerns themselves alone.

4. *In a few privileged persons.*—That which is wanting in man, and is supposed to be the attribute of the soul when disengaged from matter: that is to say, an immense extension of the faculties of seeing and hearing. The internal sight being unlimited, everything may be seen, both near and at a distance, though apparently hidden by opaque bodies. Exact knowledge of the nature and symptoms of disease, as well as of the means of combating it.

This classification is far from being complete. The synopsis of somnambulic faculties has still to be made; every day new facts are observed, and it is impossible to assign any limit to the exercise of these marvellous faculties. It has been justly said: Through somnambulism magnetism opens a window upon the invisible world.

Direction of somnambulism in the treatment of disease.

In the majority of cases the advantages to be derived from the clairvoyance of somnambulists are not so great as those produced by magnetism; for it is the magnetic principle which gives vitality and strength and removes pain. It is not necessary to lay such stress upon these facts, but I must call your attention to them. The remedies prescribed are generally of very little value; lucidity guides or rather helps to encourage you. You are doing me good; I see the changes which are taking place in myself; go on, I shall recover.

Such are the responses of persons in a magnetic sleep. It is you, then, who are the instrument of the cure. The remedies which somnambulists prescribe for themselves though clearly indicated, would not produce any result unless they were assisted and supported by an increase of vital force. The best cures which I have made in my life were cases where the patients were not somnambulists.

You must learn to dispense with this somnambulatory light, which you may do by attentively studying the course of the magnetic fluid, its force, and the direction which it takes; you will thus acquire a kind of intuition which will guide you in obscure cases. Somnambulism will often fail you, and if you have not made yourself independent of it, what will you do? Will you leave your patients without assistance? Will you have recourse to the lucidity of another person to direct you? How will you guard against the errors which may be committed? How will you venture to undertake the responsibility of the remedies prescribed? As you see, much study is still necessary in order to learn what somnambulism is, its real value, and particularly to understand well how to regulate it.

What I here tell you is not prompted by prejudice, for what can it signify whether the good effects are produced by remedies or by magnetism, so long as they are produced? I have seen serious mistakes made by somnambulists and they have cooled the enthusiasm which I at first felt for this astounding faculty. Your confidence in somnambulists ought to be in proportion to their knowledge of medical science, and you ought never to consult anyone without convincing yourself that he possesses this knowledge. Granted these mistakes, magnetic somnambulism is a marvellous fact, an astounding phenomenon, and I wish I could extol it unreservedly; but it is my duty to enlighten you in order that you may avoid shipwreck.

I have always remarked that the more profound and isolated the magnetic sleep, the more lucid it is. I understand by profound sleep a state of insensibility, where the senses are completely closed to exterior impressions. A person in this kind of sleep, placed near a sick person, ought, when the communication is established, to feel in his own organisation the disorders as to which he is consulted; and experience identical pains. The patient must recognise the description of the symptoms of his disease to be correct. In perfect somnambulism the same complaints should be heard, couched in the very words made use of by the patient in describing his sufferings. A perfect communication ought to cause the manifestation of these phenomena. I have often witnessed them and I then felt certain that the treatment about to be prescribed would be efficacious.

In case the phenomena just described by me do not appear, it is necessary to be on one's guard, for the somnambulist may then be regarded as nothing more than a doctor. He still inspires a kind of respect, but he is unworthy of it. Such is the case with ordinary somnambulists, who have a list of remedies which they order at random in different affections.

I will not here treat any further of magnetic sleep, which in our

days has been rendered more curious than useful. I prefer to enlarge upon the agent which produces it, as it is this agent especially which you ought to study. Having it constantly at your disposal, you will often be able to dispense with auxiliaries, and if you know how to employ it intelligently, you will have reason to be proud of the work of your hands. It is this agent which cures, and somnambulism cannot take its place. I lay much stress upon this proposition because I have often observed that somnambulists prescribe magnetism as a means of treatment for themselves, and when they order other remedies for those who consult them, it is because they wish to retain the undivided attention of the magnetiser.

Never lose sight of these facts which have been observed; they will preserve you from many errors, and will prevent you from abandoning, as is frequently the case at the present day, the certain for the doubtful, and the cause for the effect. By regarding everything in the light of miraculous phenomena, you retard the epoch when magnetism, as a physical principle or a natural force, must enter the domain of science.

In every consultation be prudent and calm, if you desire that your ideas and your judgment should acquire clearness; interrogate slowly and you will obtain responses which will guide you in your search for the true principles of magnetism.

You ought to exercise much reserve in speaking of the marvellous faculties of your somnambulists, for you will be asked to verify your facts. You are anxious that no shadow of doubt should rest upon your veracity; but you have not calculated that your instrument is not a machine, the constant and regular play of which allows observations to be made at any time. Here even the approach of a stranger disturbs and alters the usual conditions of the somnambule sleep. Your own disquietude increases this disturbance, in spite of which you try to exercise your will. Vain hope! The light is extinguished, the marvellous faculties have disappeared! This is the history of the discomfiture of many magnetisers.

You must be very sure of the power of your will and of the impossibility of its being morally weakened, or your instrument must be a very perfect one, if you venture to produce somnambule phenomena in public. The ignorant magnetiser may in such a case turn his own ignorance to account; for not being troubled with doubts, he has no difficulty in keeping his mind calm; he laughs at the idea of doubts, he has seen, you must see also, and this certainty of his is sufficient to ensure success.

I will not here speak of the procedures necessary to establish a communication between the somnambulist and other persons. It is sufficient to have contact, sometimes even that is not necessary; the somnambulist sees at a distance when his attention is directed to a sufferer. A letter, a lock of hair, an article of dress, any object, in short, which a person has worn or only touched, suffices in many cases.

(To be continued.)

A WORK ON THE PHENOMENA OF SPIRITUALISM.*

There are few workers in the field of psychological phenomena who have earned such an honourable distinction as Mrs. Berry. She is not a mere observer, but of that form of mediumistic faculty which is termed a developer. In her presence, mediums, particularly for physical phenomena, have more than ordinary power. Her success as an observer has therefore been great, and she has been fortunate in coming into contact with nearly all the forms of the phenomena—a careful record of which her book presents.

Besides her ordinary course of home seances, the author has had the special privilege of intimate facilities for observing the phenomena occurring in the presence of the greatest mediums in the Movement. Mrs. Berry also conducted a public seance at the Spiritual Institution for a long time, Messrs. Herne and Williams, and other mediums sitting under her direction. Her book, therefore, gives the results of a vast range of experience, including that attending the author's first introduction to the subject, her ordinary private seances, her special seances with noted mediums, and her seances in public with sitters of the most miscellaneous description.

To these features there is yet to be added the peculiar province distinctively occupied by the author herself, as a drawing, painting, healing, and prophetic medium. Mrs. Berry's paintings have been from the first unique in the products of Modern Spiritualism. The chapter on spirit-photography shows that it was through Mrs. Berry that the subject was first introduced to Mr. Hudson.

The fragments respecting Semiramide are curious. As to their being what they purport to be, it would be hard to determine; at the same time, they contain much interesting matter in a quaint form.

Mrs. Berry produced this book entirely for the benefit of the Cause, and it is but fair to say that there is no such varied record of the whole field of the phenomena in the literature of the Movement, even including the most astounding instances of the materialisa-

* *Experiences in Spiritualism: a Record of Extraordinary Phenomena witnessed through the Most Powerful Mediums, with some Historical Fragments relating to Semiramide, given by the Spirit of an Egyptian who lived Contemporary with her.* By CATHERINE BERRY. Second Edition, enlarged. London: J. Burns. Full gilt, with photograph of Mrs. Berry. Published at 3s. 6d.; offered to the readers of HUMAN NATURE for this month for 2s.; post free, 2s. 4d.

tion phenomena. As a guide to inquirers informing them of the numerous experiences that await them in their investigation, it is most valuable.

At the time when some of the reports were written they were regarded as so extraordinary, as to be almost beyond acceptance, but the fruits of recent years' experiments has entirely vindicated the pioneering work so courageously undertaken by the lady who has given the public this very interesting volume.

The truthfulness of the statements contained does not depend on Mrs. Berry's testimony alone. On the contrary, the reports are from a great number of pens, some of them distinguished in literature, science, art, and social position.

Mrs. Berry, with her usual unselfish generosity, is desirous that the remainder of the edition should be put into circulation at this time on the easiest terms possible. Now is the dawning of a new day of spiritualistic experiment, and to usher it in this elegant volume may be of signal service. That it may be within the reach of all for this purpose, it is offered to the readers of this number of HUMAN NATURE at a nominal price.—(See Coupon at the beginning of the number.)

PROGRESSIVE LIBRARY & SPIRITUAL INSTITUTION,
15, SOUTHAMPTON ROW. LONDON, W.C.,

WORKS ON

Spiritualism, Mesmerism, Phrenology, &c.

PUBLISHED, IMPORTED, AND SOLD BY

JAMES BURNS, 15, SOUTHAMPTON ROW, LONDON, W.C.

Scientific Works on Spiritualism.

ON MIRACLES AND MODERN SPIRITUALISM.

THREE ESSAYS.

By ALFRED RUSSEL WALLACE, F.R.S.,

Author of "The Malay Archipelago," "Contributions to the Theory of Natural Selection," &c.

Cloth, 5s. Presentation Edition, Gilt, 7s. 6d.

CONTENTS.

I. AN ANSWER TO THE ARGUMENTS OF HUME, LECKY, AND OTHERS AGAINST MIRACLES.

II. THE SCIENTIFIC ASPECT OF THE SUPERNATURAL.

1. Introductory.

2. Miracles and Modern Science.

3. Modern Miracles viewed as Natural Phenomena.

4. Od-Force, Animal Magnetism, and Clairvoyance.

5. The Evidence of the Reality of Apparitions.

6. Modern Spiritualism: Evidence of Men of Science.

7. Evidence of Literary and Professional Men to the facts of Modern Spiritualism.

8. The Theory of Spiritualism.

9. The Moral Teachings of Spiritualism.

10. Notes of Personal Evidence.

III. A DEFENCE OF SPIRITUALISM. From the *Fortnightly Review*, Revised and Enlarged.

APPENDIX.

Researches in the Phenomena of Spiritualism.

By WILLIAM CROOKES, F.R.S.

(Reprinted from the *Quarterly Journal of Science*.)

Price 5s. in handsome Cloth,

With Sixteen Illustrations of Appliances for the scientific demonstration of the genuineness of the phenomena, including Portrait of Mr. D. D. Home holding the accordion under the table while it was being played on by the agency.

CONTENTS.

Spiritualism viewed in the Light of Modern Science.

Experimental Investigation of a New Force.

Some further Experiments on Psychic Force.

Correspondence upon Dr. Carpenter's asserted Refutation of Mr. W. Crookes's Experimental Proof of the Existence of a New Force.

Psychic Force and Modern Spiritualism.

Notes of an Inquiry into the Phenomena called Spiritual during the Years 1870-73.

Miss Florence Cook's Mediumship.

Spirit-Forms.

The Last of Katie King: the Photographing of Katie King by the aid of the Electric Light.

THE ARCANES OF SPIRITUALISM:

A TREATISE ON THE SCIENCE AND PHILOSOPHY.

By HUDSON TUTTLE.

450 pp. Cloth, 5s.

This comprehensive Work traces the Evolution of the Phenomena from the various kingdoms of nature and shows their relations thereto. Those who would understand Spiritualism scientifically should read this thoughtful work.

CONCERNING SPIRITUALISM. By GERALD MASSEY. 2s

PURE SOLIDIFIED CACAO

Is a preparation of the fruit of the *Theobroma Cacao* by a peculiar process by which ALL THE NATURAL PROPERTIES OF THE FRUIT are retained in an unimpaired state, without the addition of any foreign substance.

The BUTTER OF THE CACAO BEAN, so nutritious and promotive of easy digestion, is all retained in the SOLIDIFIED CACAO, and as no starch, arrowroot, sugar, fat, or other article is introduced to make weight, this Pure Article is agreeable to and digestible by delicate constitutions to which the various articles of commerce known as "Cocoa," "Chocolate," &c., are heavy, obnoxious, and indigestible.

The Manufacturer DEFIES Science to DETECT ADULTERATION in the SOLIDIFIED CACAO.

By no process of abstraction or addition is the beautiful product of Nature, named by Linnaeus *Theobroma* (food fit for Gods), tampered with. It is the only article of the kind which can boast of the same qualities.

By a method of manufacture which develops all the properties of the tropical bean, the article is presented to the consumer in a condition of absolute perfection. The flavour is exquisite, and so abundant that one pound of SOLIDIFIED CACAO will go further than many times the quantity of low-priced preparations, rendering it

THE CHEAPEST (as well as the best) ARTICLE IN THE MARKET.
Besides being an excellent corrective of the stomach and an aid to digestion,

SOLIDIFIED CACAO IS A MOST NUTRITIOUS ARTICLE OF DIET,

containing as it does all the elements contributed by nature in its growth, and chemically supplying all that goes to make up a perfect organism. This cannot be said of Tea, Coffee, or any other article used as a drink.

SOLIDIFIED CACAO is not a stimulant—does not excite the nerves or heat the blood. It does not occasion or intensify chronic ailments. It is a *bona fide* food of the highest class, and is therefore peculiarly adapted to the

USE OF MEDIUMS AND SENSITIVES,

and is the best refreshment after a seance or public speaking. Invaluable to invalids requiring a highly-concentrated diet.

The SOLIDIFIED CACAO is adapted for universal use in cases where tea, coffee, wines, spirits, malt-liquors, and other costly beverages are so frequent, which often become the bases of tyrannous habits and the cause of much suffering.

By the use of SOLIDIFIED CACAO money may be saved, strength maintained, health restored, bad habits prevented, appetital pleasure enjoyed and the manifold purposes of life carried out with more effect.

TRY IT, AND YOU WILL USE NO OTHER.

Price 3s. per lb. Sold in packets of 1 lb. each. By sending for a q. at a time it will be sent carriage paid, preventing the necessity for age, additional profits, and the risk of adulteration. When properly kept, it be preserved for years without deterioration.

Agent: J. BURNS, 15, Southampton Row, London, W.C.