

Psychological Society of Great Britain

PROCEEDINGS

OF THE

PSYCHOLOGICAL SOCIETY
OF GREAT BRITAIN,

1875-1879.

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1880

WITH A PREFACE.

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INTRODUCTION.

ON the 22nd of February, 1875, a Private Meeting was held at 36, Russell Square, the London residence of Mr. Serjeant Cox. The following gentlemen were present, viz. :—William Crookes, Esq., F.R.S. ; George Harris, Esq., Barrister-at-Law ; the Rev. W. Stainton Moses, M.A. ; Francis K. Munton, Esq., Solicitor ; Frederic W. H. Myers, Esq., M.A. ; Francis W. Percival, Esq., M.A., Barrister-at-Law ; Professor C. J. Plumptre, Barrister-at-Law, and Mr. Serjeant Cox himself. The following resolutions were passed :—

1. That a Society for the Promotion of Psychological Science be now formed.
2. That the Society be called the "Psychological Society of Great Britain."
3. That the object of the Society be the scientific investigation of Psychology in all its branches.
4. That such investigation be by the collection of facts, by the reading of papers, and by discussions thereon.

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5. That the purpose of the Society being to treat the subject solely as questions of science, all theological discussion be strictly excluded.
6. That the Society shall consist of an unlimited number of Members, to be elected by the Council.
7. That the annual subscription to be paid by Members residing within twenty miles from London be two guineas, and by Members residing beyond that distance one guinea.
8. That the business of the Society be conducted by a President, four Vice-Presidents, a Council (not exceeding twelve Members), a Treasurer, Auditor, and Secretary, all of whom shall be elected annually by the Members.
9. That the Society meet periodically at such times and places as the Council shall appoint.
10. That the proceedings at the Meetings of the Society be conducted in accordance with such rules and regulations as the Council shall from time to time direct. Three of the Council shall be a quorum.
11. That a General Meeting of the Society be held in the month of November next, for the election of the officers of the Society.
12. That F. K. MUNTON, Esq., of 21, Montague Street, be requested to undertake the office of Honorary Secretary, *pro tem*.

The project was made public, and within three months there were over sixty members. Several private meetings having taken place, a public meeting was resolved upon, and on 14th April, 1875, MR. SERJEANT COX delivered an Inaugural Address at the large room, 9, Conduit Street, W. The building was filled to its utmost capacity, and the meeting was admittedly a great success. The following officers were appointed : —

President.

MR. SERJEANT COX.

Council.

WILLIAM CROOKES, Esq., F.R.S.

P. W. CLAYDEN, Esq.

GEORGE HARRIS, Esq., LL.D., F.S.A., V. P. Anthropol. Inst.

Sir JOHN HERON MAXWELL, Bart.

The Rev. W. STANTON MOSES, M.A., F.R.S.L., F.S.S.

FREDERIC W. H. MYERS, Esq., M.A.

FRANCIS W. PERCIVAL, Esq., M.A.

Professor CHARLES JOHN PLUMPTRE.

J. EBENEZER SAUNDERS, Esq., F.L.S., F.G.S., F.R.A.S.

GANNENDRO MOHUN TAGORE, Esq.

CHARLES STANILAND WAKE, Esq., V. P. Anthropol. Inst.

Honorary Treasurer and Secretary.

FRANCIS K. MUNTON, Esq., F.R.G.S.

The Society continued to prosper, and besides the papers printed in this volume numerous others were read on kindred subjects, and animated debates took place. The following is a list of the principal papers and discussions :—

- p 4* The Province of Psychology.*
- 41* The Psychology of Sleep and Dream. (2) * *Some more phenomena*
- 61* The Psychology of Memory.* *p 165 of the 1st & 2nd on*
- 73* The Duality of the Mind.* *from p 165*
- 87* Progress of Psychological Research.* *Edison's address*
- 107* Calligraphy as a Test of Character.*
- 99* Materialism and its Opponents.* *see 3rd article*
Some Psychological Phenomena.
- 123* Matter and Spirit.*
- Alleged Clairaudience.
- Comparison of the Mental Faculties of Men and Animals.
- On Consciousness.
- Supersensuous Perception.
- The Psychology of Wit and Humour.
- Objections to Psychological Phenomena considered.
- On Apparitions.
- 131* Psychology of Memory and Recollection.* *see 1st & 2nd ? connection*
- Psychology of the Hindoos.
- 147* Prospects of Psychology.*
- Unconscious Cerebration.
- Artificial Somnambulism and Electro Biology.
- Primitive Psychology of the Aryans.

The Inductive origin of First Principles.

Heredity and Hybridism.

The Human Voice considered Psychologically.

209 Cerebral Psychology.*

Psychological Aspect of Molecular Motion.

Hereditary Transmission of Endowments and Qualities.

Abnormal Experiences.

193 Automatic Mind—Unconscious Intelligence.* *Nature and Law*

219 Has Man a Soul?*

The Phenomena of Trance.

Psychology and Psychography.

Materialism considered.

177 Psychology proved by Physical Science.*

Prepossession and Dominant Idea.

Psychology in India.

Answer to Darwin's Theory of Evolution.

Evidence in Psychological Research.

The Theory of Phrenology.

The Value of Testimony in Matters Extraordinary.

239 Admission of Psychology into the Circle of Sciences.*

Man Immaterial and Moral.

Psychological Ideas of the Oriental Races.

Thought Reading.

Psychology, its Data and Desiderata.

Loss of Memory.

263 Psychology of Hamlet.*

277 Advances in Psychological Science.* *(Art. Science & Psychology)*

* The papers marked with an asterisk are printed in this volume.

In October, 1875, a permanent meeting-room was engaged, and from that time the Psychological Society regularly met twice a month in the hall of the Medical Society, 11, Chandos Street, Cavendish Square, London.

In 1876 a Special Investigation Committee was constituted, and for two years and upwards private sittings were held. On these occasions one or other of the best known persons (in whose presence certain psychological phenomena were said to have occurred) attended. Although the results were not such as could be satisfactorily reported, enough took place to demand further inquiry, and early in 1879 the Society resolved to change its procedure at the public meetings, and invite *viva voce* evidence from members who had themselves witnessed the phenomena in question. This course was adopted on several occasions with great success.

Mr. Serjeant Cox was actively engaged in all the work, and he had volunteered to relate *viva voce*, on the evening of the 4th December, 1879, some of his own personal experiences, and submit to examination. The card for this meeting was

actually printed, but just as it was being sent out to the members, the President, with scarcely a moment's warning, died.

On Monday the 24th November, 1879, the learned Serjeant had presided as usual in his official capacity as one of the judges at the Middlesex Sessions, and in the evening he gave a reading from the works of a popular novelist at a local entertainment, near his country house. He returned home at night apparently in good health and spirits, but shortly afterwards expired suddenly in his library to the great regret of a large circle of friends, and especially of the members of the Psychological Society.

After much consideration the Society came to the conclusion that the President's death was an irrecoverable blow to the undertaking. The following notice of the final meeting is taken from the *Times* newspaper of Monday, 22nd December, 1879 :—

At a special general meeting of this Society, held at 11, Chandos Street, Cavendish Square, on Saturday afternoon, the following resolutions were passed :—1. "That, inasmuch as the Society was founded by Mr. Serjeant Cox for a special object, which has in some measure been attained, and he was

throughout distinctly identified with the undertaking, and his loss is practically irreparable, it is expedient that the Society should be dissolved as from December 31, 1879, and that (except for the purpose of adjusting accounts) it be dissolved accordingly." 2. "That Mr. F. K. Munton be requested to retain his appointment as Hon. Sec. and Treasurer as long as may be necessary to collect the assets and discharge the obligations of the Society, he rendering account thereof in due course to the Council, who, for this limited purpose, shall remain in office and be called together to decide on the appropriation of the balance, if any." In the course of the debate upon the principal resolution (as to which the members had been polled by circular, and the voting was nearly unanimous) the Hon. Secretary remarked that a rumour had gone abroad that the late Serjeant had admitted his belief in the return of the spirits of the dead. He (Mr. Munton) was unaware of any authority for this assertion. All he could say was, that in a private letter from the Serjeant to himself, not long ago, after remarking that some had "assumed that the Society was devoted to spiritualism under a false name," went on to say, "this was not my design, nor yours, and I am not willing to lapse into a spiritualist society." The meeting concluded with a vote of thanks to the Honorary Secretary for his services.

It only remains to be added that the surplus funds were directed to be appropriated to the compilation of the present volume and its distribution among the members of the Society by way of a permanent record of the Proceedings.

The following is a complete list of the members in the order in which they joined, some of whom had died, or resigned their membership, before the dissolution of the Society.

Mr. SERJEANT COX.

FRANCIS K. MUNTON, Esq. *Solicitor.*

GEORGE HARRIS, Esq., LL.D. *Barrister-at-Law.*

WILLIAM CROOKES, Esq., F.R.S.

Rev. W. STANTON MOSES, M.A.

FRANCIS WILLIAM PERCIVAL, Esq., M.A. *Barrister-at-Law.*

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WILLIAM H. T. BALLISTON, Esq. *Admiralty.*

WILLIAM JAMES STILLMAN, Esq.

JOHN GEORGE BLUMER, Esq. *Darlington School Board.*

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Mr. Alderman FIGGINS.

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THOMAS ARTHUR STEPHENS, Esq.

J. EBENEZER SAUNDERS, Esq. *London School Board.*

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JAMES SCOTT, Esq.

JAMES B. PARKER, Esq.

JOHN S. C. STEVENS, Esq.

WILLIAM MAXWELL GOW, Esq.

ARTHUR CATES, Esq., F.R.G.S. *Architect.*

WILLIAM TEBB, Esq.

JOHN WILLIAM JEVONS, Esq. *Solicitor.*

CHARLES CARLETON MASSEY, Esq., M.A. *Barrister-at-Law.*

HAHNEMANN EPPS, Esq., M.S.A.

Sir JOHN HERON MAXWELL, Bart.

† A. B. SPRAGUE, Esq. *New York.*

Col. the Hon. T. G. CHOLMONDELEY.

Lieut.-Col. JOSEPH HARTLEY, LL.D., J.P.

HENRY D. GLASSE, Esq. *Dep. Inspector-Gen. of Hospitals.*

* Captain RICHARD BURTON, R.N.

† REUBEN A. VANCE, Esq. *New York.*

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PERCY GORDON, Esq. *Solicitor*.
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A. VACHER, Esq., F.I.C., F.C.S.
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HENRY C. EMERY, Esq.
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LORD BORTHWICK.

*Professor W. F. BARRETT. *Dublin.*

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WM. PETER ADSHEAD, Esq.

WILLIAM RUSSELL, Esq. *Solicitor.*

FRANCIS A. GWYNNE, Esq., F.R.G.S.

FREDERICK HOCKLEY, Esq.

† J. N. PEEBLES, Esq., M.D. *New York.*

C. M. DOWSE, Esq., M.D.

THE HON. PERCY WYNDHAM, M.P.

ALFRED LLOYD BURRELL, Esq., M.A.

STEPHANO CASTELLI, Esq. *Italian Consul (Amsterdam).*

GEORGE KEMP, Esq.

Lady Subscribers.—Mrs. DIXON, Mrs. HOBSON, Mrs. GREGORY, Mrs. BARRETT, Mrs. SYMINGTON, Mrs. FITZGERALD, Miss M. A. CORBETT, Mrs. MORRIS.

* Honorary.

† Corresponding.

FRANCIS K. MUNTON,

Hon. Secretary,

WILLESDEN, N.W.

THE
PROVINCE OF PSYCHOLOGY:

THE
INAUGURAL ADDRESS
AT THE FIRST MEETING, APRIL 14, 1875,
OF THE
PSYCHOLOGICAL SOCIETY OF
GREAT BRITAIN,

BY THE PRESIDENT,
MR. SERJEANT COX.

LONDON :
LONGMAN AND CO., PATERNOSTER ROW.

1875.

PREFACE.

HAVING but imperfectly anticipated the extent of interest which the Science of Psychology appears to create in the public mind, the Council of the PSYCHOLOGICAL SOCIETY OF GREAT BRITAIN had made very inadequate provision for the Inaugural Meeting to which visitors had been invited. Measuring by the usual attendances at other scientific societies (with the single exception of the Geographical Society), they concluded that ample space for all whom the subject was likely to attract would be supplied by the large lecture room in Conduit Street. Their surprise was great to find every seat occupied long before the hour of

meeting, and it was with regret that they beheld a great number of disappointed applicants departing because unable to find even standing room. It is at the request of those who were thus prevented from hearing it, as of many of those present, that the Inaugural Address of the President is now published.

A very erroneous impression appears to prevail that the PSYCHOLOGICAL SOCIETY OF GREAT BRITAIN has been established with a special view to the promotion of a new faith to which the name "Spiritualism" has been given. As this was far indeed from the design of the promoters, who contemplate the investigation of the entire field of Psychology, this Address on the *Province of Psychology* was prepared with express purpose to show how large is the domain which the Society proposes to survey, and how many and diverse are the subjects that will present themselves for its inquiries and discussions. Formed for the investigation of all psychological

phenomena, the Society could not exclude from consideration any that profess properly to belong to their Science and that shall be duly authenticated to them by sufficient evidence. The phenomena in question are but a small fraction of the multitude of Psychological facts that will from time to time come to be considered. The following Address presents merely an outline of the various branches of the Science and the problems that press for solution under each of them. The Society will exclude no Psychological questions (save such as belong to Theology), from its collection of facts or its discussions upon their causes.

The Council feel that the best contradiction of this misrepresentation of their design will be found in the following pages, which show that the Society embraces no creed, supports no faith, contemplates no theory, has no latent designs, but proposes only to collect facts and investigate psychological phenomena, precisely as other scientific societies investigate the phenomena of

Magnetism or the laws of Astronomy, with no foregone conclusions, and with the single purpose to ascertain, so far as evidence and argument may, what is the very truth, leaving the deductions from that truth for individual opinion and collective debate.

THE
PROVINCE OF PSYCHOLOGY.

*The Inaugural Address of the President of THE
PSYCHOLOGICAL SOCIETY OF GREAT BRITAIN
(MR. SERJEANT COX), April 14, 1875.*

WHAT is the province of PSYCHOLOGY?

This is the first question to be answered by a Psychological Society.

To make that answer clear, it is necessary to ask and answer another question.

What is *matter*?

A distinct and definite comprehension of what *matter* is lies at the very foundation of Psychological Science.

A few words will suffice to make the answer clear to the common intelligence.

Physicists have arrived at the almost unanimous conclusion that the entire Universe is composed of

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infinite combinations of certain ultimate particles, inconceivably minute, to which they have given the appropriate name of "*atoms*."

These atoms, they say, combining in certain definite proportions, in obedience to some unknown natural law, form *molecules*, which are the ultimate particles of *matter*. It may be reasonably inferred that atoms, combining in other proportions, take other shapes than those we recognise as molecular. Molecules are probably but one of many forms into which atoms aggregate. But all the various forms of *matter* are made by various combinations of *molecules*.

The human senses are constructed to perceive only molecular substance. All other combinations of atoms than such as form molecules are entirely imperceptible to us. They make no impression upon either of our senses and, consequently, we are wholly unconscious of their existence.

Matter, therefore, is so much of creation as, because it is of molecular construction, our senses are enabled to perceive. For all the really greater *non-molecular* part of creation, the multitudinous other aggregations of atoms which take other shapes than molecules, and which make no impression on the human senses, Science has yet found no name—unless the supposed universal medium called *Ether* is one of them. For lack of a better title we will call it *Non-matter*.

Matter—molecular structure—of which only our

senses can take cognizance—is but an infinitesimal part even of so much of the Universe as lies within the range of our perceptions. The multitudinous worlds we see with our telescopes are but as so many grains of sand in a sea, compared with the great ocean of space, void to our senses, in which those worlds are scattered.

The proportion of *non-matter*, which is imperceptible to our senses, to the matter which our senses are constructed to perceive, far exceeds what even figures could express. It is most improbable that those vast interspaces between the worlds of molecular structure should not be occupied by many other combinations of atoms than such as form molecules; but which, if they filled the whole space, and even were thronging about us everywhere, would still be unperceived by and unknown to us because, not being of molecular substance, they can make no impression upon our senses and therefore are not perceptible to our consciousness.

What is a MAN?

All that our senses can perceive is a marvellous mechanism of molecular structure admirably adapted for existence upon a world also structured of molecules. This mechanism is subject to all the forces that control matter. But it is subject also to certain other forces that appear specially to control organic matter.

It is the province of *Physiology* to investigate this material mechanism, to trace the parts of

which it is composed, to find the function of each part, and to observe the effects upon that structure of the physical and organic forces.

But although this mechanism is subject to the same forces as is all other molecular structure, it is also manifestly moved and directed by another force, distinguished from the physical and organic forces in this, that it is not, like them, a blind force, but an *intelligent* force—acting in obedience to a power, other than itself, that exercises an independent choice of actions.

This intelligent and directing Power is not one of the Physical Forces, for often it acts in opposition to them. It is also a Power existing, if not generated, *within* the mechanism, whose actions it prescribes although seemingly independent of it.

This is the *Intelligent Something*—call it what we will—be it a form or a force—an entity or a mode of motion—an actual being or merely an influence—which it is the proper Province of Psychology to investigate.

Assuming it to be an actual entity—something other than a mere resultant from a certain collocation of matter—the Greeks called it *Psyche*, and we have called it indiscriminately—*Soul*—*Spirit*—*Mind*. Adopting for scientific purposes the ancient term *Psyche*, we have the term *Psychology*, which, in plain English, means “The Science of the Soul.”

Physiology, therefore, deals with the material structure, with the whole visible and palpable mechanism of Man—whatever of it can be severed by the scalpel, fused in the crucible, subjected to the microscope;—in short, so much of Man as is material—and by “*material*,” I intend *constructed of molecules*.

Psychology deals with the potencies or entities, whatever they be, whence proceed the forces by which this mechanism is moved and directed, and which, being immaterial—that is to say, *non-molecular*—are imperceptible to any human sense. True, they cannot be carved, and weighed, and analysed. But their existence is not therefore the less certain nor, as I shall presently attempt to show, less capable of being made known to us and their qualities and functions ascertained.

The province of *Psychology*, therefore, begins at the point at which the province of *Physiology* ends. They are neither rival nor antagonistic sciences, as some have contended, but in truth they supplement each other. Each requires for its full development some assistance from the other; and a perfect knowledge of one cannot be attained without some knowledge of the other.

I hope I shall not misrepresent the argument by which the Materialists dispute the authority of Psychology to be deemed a legitimate branch of science. It is necessary to note their objection that it may be answered and the

existence of a Psychological Society vindicated and justified.

"We can know," they say, "matter, which is perceptible to our senses, and we can learn something of the laws by which it is governed. We are thus enabled to construct *a science*, that is to say, a systematic scheme of positive knowledge. This is the proper province of Physics, and Physicists have thus a solid foundation on which to build, and actual facts with which to deal, fully capable of demonstrative proof and permitting the formation of probable judgments based upon substantial realities.

"But otherwise it is with you Psychologists, Metaphysicians, Mental Philosophers, and Theologians. You try to construct a science without a foundation. You deal not with the real and the actual, with something perceptible to the senses and whose existence is proved. Your subject matter is not merely unknown, it is *unknowable*. You profess it to be something of which the senses have no cognisance, which cannot be seen, felt, carved, weighed, analysed. Your basis is conjectural and your conclusions are and ever must be conjectures also. It is not permitted to us, as Scientists, to recognise for scientific purposes anything not material. We see in matter "the promise and the potency of every form and quality of life." We know of no existence that is not material. What you call Mind, which has no distinct being to any

of your senses—and which even in your own imagination of it has neither form nor substance, and of which yourselves have no definite conception—is to our conception of it merely a function of the brain, for, as the brain is, so is that mind. Thoughts, emotions, ideas, are only states of consciousness, names given to certain sensations that accompany certain conditions of the brain. When life ceases we see that sensation ceases; the brain as well as the body is resolved into its material elements and the man that was is not. But no part of him perishes. The molecules of which he was constructed pass into other forms of being; but the individual consciousness is extinct.”

This is, as I read it, the sum of the argument of the Materialists. I have stated it very briefly, but I hope not unfairly, for the limits of this address do not permit of a more elaborate exposition. We may frankly admit its cogency. There is in it much that is calculated to impress the mind, and it is not surprising that it should have found very general acceptance among men of science and obtained a large following in the outside world. The argument seems to be without a flaw and the conclusion to be irresistible—that Psychology is a visionary science—in truth, no science at all, but merely a mass of conjectural deductions from conjectural facts.

Now here it is that Psychologists join issue

with the Materialists and boldly challenge them to proof. We assert with unhesitating confidence that we are dealing with a subject as real, and whose existence is as capable of positive proof, as are many of those which the Materialists investigate. We protest that the potencies with which we deal are as capable of actual demonstration as are the Electricity and the Magnetism of the Physicists. We say that the study of Psychology is to be pursued in precisely the same manner, with precisely the same kind of evidence, and with deductions made according to the same logical rules, as those upon whose sufficiency the Physicists rest their claim to a place among the sciences for Magnetism and Electricity, and for themselves the character of Men of Science.

What is Magnetism? What is Electricity? What is Gravitation? What are Heat and Light? According to the Physicists, they are not substances, not matter, not things. They are only *forces*, or, to use the favourite phrase of Professor Tyndall, merely "modes of motion." In truth, the Physicists know not what they are. They know of the existence of these forces, be they things or motions, only by the effects they produce upon the molecular substances our senses are structured to perceive. Although these forces are ever passing about us and through us with tremendous energy, we should be ignorant of their presence but for changes they cause in molecular structure when it impedes their passage. We

feel the shock—say, of the electric spark. But what we feel is not the electricity itself, but the sensation caused by the displacement of the molecular structure through which it is flashing and which is an obstacle to its passage. How, therefore, do the Physicists construct their sciences of Electricity and Magnetism? Not by seeing or feeling the imperceptible fluids, if such they be, but by noting the effects they produce upon the molecular structure the human senses are enabled to perceive, and thence deducing conclusions, more or less probable and more or less conjectural, as to the nature of the forces, of whose existence they do not entertain the slightest doubt, although they are not actually known and probably are unknowable.

By precisely the same processes as the Materialists employ for ascertaining the existence, the powers and the properties of those unknown and unknowable things, Magnetism and Electricity, do the Psychologists propose to ascertain if there be in the human organism, or associated with it, or in any way controlling it, something as imperceptible to the senses, and consequently as unknown and unknowable, as are Magnetism and Electricity—some entity—be it a force or a thing—such as that we call *Life*, which is in organic structure only—or that which is called *Mind* and which is found only in animal structure; and if there be not also something, other than *Life* and

Mind, that gives to Mind its consciousness of individual being—something that constitutes the MAN and yet is distinct from the body of the man, which we call SPIRIT or SOUL. I do not assert now that such things exist—this is one of the many great duties that devolve upon the Psychology of the future—but I say that the existence of these things, their powers and their qualities, are as capable of being studied and may be as accurately ascertained, as are the existence, qualities, and powers of Magnetism and Electricity; and by precisely the same processes as are pursued by the Physicists—that is to say, by observing the operation of the imperceptible entities upon molecular matter which we can perceive. How did Professor Tyndall advance to his discoveries of the characteristics of magnetism? He did not see the magnetic force or fluid, whichever it be. All he saw and knew was, that certain substances under certain conditions were affected in a certain manner. He changed the conditions again and again, until he learned some of the peculiarities of the force he could not see, and thus he arrived at a confident conviction that the force was a real presence, though itself imperceptible, unknown and unknowable, and he ventured upon conjectures, more or less probable, as to the nature and characteristics of that force, or of the entity producing that force.

And in the like fashion it is that Psychology proposes to pursue its researches into LIFE, MIND,

SOUL, imperceptible though they be, and, therefore, according to the Materialists, unknown and unknowable. By noting the effects they produce upon organised being, with which they are associated precisely as are the physical forces with inorganic being, Psychology not unreasonably hopes to arrive at the same knowledge of the existence and characteristics of these imperceptible producers of the forces that govern organised being, as the Physicists have already obtained of the nature and powers of those other imperceptible entities, Magnetism and Electricity—that is to say, by noting their effects upon molecular matter.

And if this can be done, and I challenge the Materialists to the proof that the analogy is not perfect, a *Science of Psychology* is at least as possible as is a Science of Electricity or a Science of Magnetism.

What then is the *Province of PSYCHOLOGY*?

To investigate all of the forces that move and direct the mechanism of man—LIFE—MIND—SOUL; if they be, what they are, what are their sources, their structures, their powers, their capacities, their functions, their potentialities, and their destinies. It is the study of MAN himself, if Man be indeed something more than the material structure that grows from an invisible point to a mature and perfect mechanism, and then fades, perishes, and passes away.

LIFE—MIND—SOUL.

Truly a magnificent field for Science. But how imperfectly cultivated—how strangely neglected! It is difficult to realize the fact that this year of grace, 1875, should witness the germ of the first national association for the promotion of Psychological Science! Great Britain boasts a catalogue of Societies, long established and flourishing, for the investigation of important and unimportant branches of knowledge, all of which have done good service in their way. There are societies for the study of the stars and for the classification of beetles; the relics of past ages are religiously speculated upon by another society; the speech of man engrosses a fourth; the races of man a fifth. But now for the first time is a serious endeavour made to establish an association for systematic and scientific investigation of what Man is—how he came to be—what is the life that moves him—when it began and how—how we move and live—what is the intelligence that directs us—what *I* am—what *you* are—if *Soul* is and what it is, what is its relationship to the body, and what its probable destiny.

The causes of this neglect of a Science so grand, so important and so interesting are not far to seek. They are

First, a popular impression that the subject of it was properly within the province, not of Science, but of Theology. It was assumed by the unthinking, and asserted as a dogma by the super-

stitious, that Mind and Soul were for *faith*, not for *knowledge*. To search after scientific proofs of them was to question the authority that *declared* them to be, but properly refused to *prove* them to be. We have almost outlived that phase of mental darkness, and few of our modern theologians of any creed would now desire to exempt Mind and Soul from the same scientific examination as is given to the body. But undoubtedly the prejudice lingers yet in the public mind and has been and still is an obstacle to the universal recognition of Psychology as a science.

The *second* cause of its depression has proceeded from the opposite quarter. The Physicists have been and still are more hostile to it than ever were the Theologians—for two reasons; first, because it was claimed as being within the domain of Theology, which the Physicists for the most part reject; and, secondly, because, as already stated, its subject matters are imperceptible to the senses and consequently, as the Physicists assert, belong to the unknown and unknowable and therefore are subjects for conjecture only and not for knowledge.

The *third* and, perhaps, the most formidable impediment to the establishment of Psychology as a recognised branch of science has been caused by the Metaphysicians and Mental Philosophers. Instead of pursuing the investigation of Mind and Soul, as all other science is now sought, by observation of phenomena and by experiment, they have

persistently limited their inquiries to the contemplation of their own inner consciousness, preferring argument to observation. Only very recently have a few investigators of Mental and Psychical Science endeavoured to pursue it by the collection of *facts* external to themselves, and by reasonable deductions from those facts. The consequence has been that for centuries mental science has made no progress whatever, while all other sciences have been advancing with giant strides. Not the least of the many uses of this Society will be to prove that the Science of Mind and Soul can be based on at least as many facts and phenomena, and therefore on as secure a foundation, as any of the Physical Sciences.

There has been yet another obstacle to the progress of Psychology which it would be uncandid not to recognise. It has had its open enemies in past times in Theologians, in our own times in the Materialists and the Metaphysicians. But now it has to fear another enemy within its very gates. These are to be found among Psychologists themselves, and the form it takes is incautious credulity. Many of the phenomena are from their very nature strange and rare and often excite wonder as well as curiosity. They are not like the phenomena through which Physical science is explored — the operations of blind forces upon unconscious substances. Mental and Psychical phenomena are for the most part the

action of forces that are directed by intelligence, and the subject of that action is sensitive and conscious. Hence the necessity for the extremest caution in observation, for repeated trial by experiment and test, for careful noting, slow deduction of conclusions, and cautious assertion. It is to the neglect of these precautions by some too hasty adventurers into the field of Psychological Science that it has been somewhat discredited among those whom a more rational treatment would have attracted to its ranks. I cannot pass without remark exhortations to *faith* which have been openly advanced. It is scarcely necessary to vindicate this Society from sanctioning any such return to pre-scientific ages. *Faith* has no recognition in science, which takes nothing on trust. *Science is proof*, and proof means the best evidence the nature of the subject will permit.

Such being the province of Psychology, as recognised by this Society, and such the methods by which we propose to pursue the investigation of it, allow me briefly to sketch an outline of the subjects that will properly come within the scope of its papers and discussions.

And these may be prefaced with the emphatic declaration that all theological debate, or even reference, will be strictly and sternly prohibited. The reasons for this rule are obvious. We intend by it no slight to Theology, no disputing of its importance, no question of its authority. But it is

a science upon which there is a vast variety of opinion, even among individuals professing the same creed. Authorities acknowledged by one are denied by another. If in the discussion of any question a writer or speaker were permitted to cite an authority which *he* accepts as Divine, and therefore conclusive, some others, who dispute that asserted authority, would certainly broach other dogmas of their own; and thus there would be an end to that for which the Society is established — the *scientific* investigation of Psychological questions.

Thus contemplated, how vast and grand is the territory to be explored!

LIFE—MIND—SOUL.

What is LIFE? What is its source? Is it the product of certain molecular structure, or is it the parent of that structure? Is it inherent in the molecule, or is it conveyed into the organic structure from without? Is life the same in all organic being, the man, the animal, the vegetable? Where does it begin? Where does it end? Is it created, or transmitted? Does it reside in the whole organic structure, or in some part of it only? Does it cease to be, or is it only transferred? What are the beginnings of the individual life of Man, animals, vegetables? What relationship have they to one another? What relationship has Life to Mind and Soul? Whence proceed *Heredity* and *Hybridism*? What are their

Phenomena? What are the laws that govern them?

Intimately associated with these inquiries, and impossible to be severed from them, is the great theory of *evolution*, and the consequent questions of the Descent of Man, and the Origin of Species which have made the name of Darwin second only to that of Newton, and wrought a revolution in the science of organic nature.

All these are within the proper province of Psychology, and will be open for discussion among us.

MIND is no less fruitful of problems that invite investigation.

What is *Mind*? Where does it dwell? Is it material or non-material? Is it a function of the brain, or is it something other than the brain, of which the brain is merely the material mechanism? In either case, what is the structure, and what are the functions, of the brain? Is it one homogeneous centre, acting as one whole, having no parts, the entire organ operating in every of its operations, or is it a machine made of many parts, each part having its own special function, and working separately or in various combinations of the various parts, as the requirement may be? Is Dr. CARPENTER right in his contention that the Mind, whatever it be, works as one whole for every thought or emotion? Or is Professor FERRIER right who professes to have proved, by positive experiment, in opposition to the conjectures of CARPENTER, that

different parts of the brain have distinct and definite duties in the control of the motions of the body? For if the body be so directed, it is impossible to escape the conclusion that the mental functions which make the sensations we call ideas and emotions are in like manner performed by distinct parts of the brain. Upon this follows the vast series of questions, still to be answered, what are the various mental functions, and by what part of the brain is each performed?

Our Society will be required at the very outset of its labours to grapple with the great physiological fact by which BROWN-SEQUARD, the first of living Physiologists, has startled the world, the duplicity of the brain and the consequent duplicity of all the mental faculties. The discovery was not a new one, for nearly forty years ago a book was published by an eminent physician, treating of what he termed "the Duality of the Mind." The conception of this he had not, however, learned, like BROWN-SEQUARD, from inspection of the brain, but by careful examination of mental operations, many of which he showed to be explicable only on the assumption that the mind is not a whole, but a structure composed of parts, many, if not all, of which are in duplicate, as are the bodily organs. GALL had previously demonstrated anatomically that the brain is formed of two hemispheres, having duplicate mental organs, as he termed them, so that, as with the two eyes and two ears, an injury to an

organ in one hemisphere still left the patient with a serviceable organ in the other hemisphere, and capacity for its use, which, though diminished in power, is still sufficient for the performance of the ordinary affairs of life. But, as seems to be the invariable practice, GALL was declared by the Scientists of his time to be a lunatic or an impostor, deluded or deluding, because he dared to assert something not recognised by their then limited knowledge of Nature. They refused even to inquire if his teachings were true; they declared the asserted facts to be impostures or delusions; and thus a knowledge of incalculable importance to humanity was condemned as a heresy and pursued with merciless abuse and ridicule by those who had never even inquired into its truth. As a consequence of this, Mental Physiology continued as obscure and irrational as ever and made no progress. But now that the greatest of living Physiologists has ventured, not merely to confirm these despised investigations of long ago, but to declare, as a positive and proved fact to which he pledges his reputation, that we have actually *two minds*, each of which can and does often act separately from the other, and bases upon that asserted fact a series of recommendations for the better education of the double mind, this question of the Duality of the Mind can no longer be looked upon as speculative merely, but must be accepted as a fact in Nature. Thus there is opened to the

Psychologist a new and almost boundless field for examination of mental operations, viewed by the new light that will be thrown upon them by this newly proved condition of mental structure.

But all these problems of incalculable interest and importance belong to the investigation of Mind in its normal state, when its operations are performed with ease and regularity and no striking phenomena present themselves to awaken curiosity and arrest attention. We can, indeed, learn very little of the mechanism of any machine, we are not permitted to take to pieces, from a survey of it when all its parts are working smoothly and regularly. It is when the mechanism falls out of gear, and one wheel grates upon another, and strange motions occur, and its work is done imperfectly, that we are enabled to discover something of the complex structure and the functions of its various parts. Thus it is that we may learn more of the structure of the mental machine in its abnormal condition, when the mechanism is disordered and strange phenomena present themselves, than when it is performing the work of conscious life with regularity and ease.

Therefore, the attention of Psychologists should be especially directed to the various *abnormal* conditions of the Mind and its mechanism, first, with purpose to ascertain *the facts*; secondly, to trace the *sources* of the phenomena; and, thirdly, to discover what light these throw upon the structure

of the machinery and its motive forces. Among the abnormal conditions that will, I hope, early attract the attention of the members of the Society, are :

The Phenomena of Sleep and Dream.—It appears to me that these have been too much neglected by Psychologists. It cannot be that mental conditions so remarkable could fail, if carefully studied, to throw upon the mental processes a stream of light that would advance immensely our knowledge of the methods of brain action and the influences of the forces, mental or psychical, by which it is influenced—especially as that investigation will now be greatly assisted by the recent discovery of the Duality of the Mind, which will certainly explain not a few of the phenomena of dreaming that have hitherto been wholly inexplicable. The nightly recurrence to all of us of these phenomena ought to have made them long ago the subject of a systematic scientific examination by the learned and of eager curiosity to the world. But perhaps it is that the familiarity of the phenomenon has deprived it of its intrinsic interest, and blinded us to its true value as affording the most obvious means for obtaining an insight into the mysteries of mental action. It will be an early duty of the Society to invite the attention of its thoughtful members, and through them of the popular as well as of the scientific world, to phenomena that have been too

much neglected, seeing that they offer the most valuable means for the exploration of Mental Physiology.

The Phenomena of *Delirium and Insanity* are fraught with lessons that should form an important chapter in the records of Psychology; for here we see the operations of the Mind and its organ when under the influence of positive disease.

Still more instructive are the Phenomena of *Somnambulism, Natural and Artificial*. Natural Somnambulism has never been a disputed fact. It is universally recognised as an abnormal condition of the mind common at all times and in all countries. The most strange exhibitions are everywhere recorded of it. There can be no doubt that during its paroxysms phenomena have occurred whose reality the most sceptical of Scientists has not dared to question; many, indeed, have been recorded by the physicians attending upon the patients. Nevertheless, when the same phenomena were exhibited by somnambules in whom the condition had been artificially produced, the charge of imposture was freely cast upon the patients by Scientists who dared not dispute the phenomena when the condition occurred naturally. True it is that there is now an admission that the facts, so furiously denied twenty years ago, are substantially true. Dr. CARPENTER accepts them and endeavours to explain them. It is amusing to note that he uses them to discredit other phenomena

which he now denies as vehemently as his predecessors denied the phenomena which he now admits. Dr. TUKE, in his excellent treatise on "*The Influence of the Mind over the Body*," also accepts the phenomena of Artificial Somnambulism as real. But the fact that they have at length passed into the creed of the Profession is a recognition of their importance which should stimulate Psychologists to a more careful and extended investigation than has yet been made of the remarkable phenomena attending that curious psychical condition, with a view to ascertain precisely their features, their sources, and the conclusions to which they point in relation to the Psychical structure of Man. Here then is another wide field for exploration by the Psychological Society.

The curious mental condition to which Dr. CARPENTER has given the name of "*Unconscious Cerebration*" is another problem that courts solution. The facts upon which it is founded are many, but is the explanation suggested by him sufficient? May not the condition he describes be better explained by the Duality of the Mind—that duplicity of the brain, of which I have just spoken? This, too, will be a theme properly for discussion here.

Lastly, we have the most difficult but infinitely the greatest problem of all—SOUL.

MIND—SOUL.

In common speech, as perhaps in popular con-

ception, Mind and Soul are taken to be identical. Psychology cannot so treat them. Mind may not improbably be the language of the Soul—the manner in which it expresses itself—the medium by means of which in this stage of material existence it communicates with other Souls. But also what we call Mind may be the product of brain organization. It is still a moot question, and until it is determined by far more extensive investigation than has yet been given to it, Science must treat of Mind and Soul as if they were different entities—*Mind* being the term by which we express brain action, and the sensation that action communicates to the conscious self—*Soul* being the term applied to that conscious self which receives and takes cognizance of those brain actions, which to it are sensations.

All, moreover, recognise the existence of *Mind*, while many deny the existence of *Soul* as an entity distinct from the body.

Here it will be convenient to state an objection felt by all Psychologists to the terms "*Soul*" and "*Spirit*," which carry with them to many minds ideas derived from other popular uses by which certain conceptions are already affixed to them, and which are the cause of continual mistakes on the part of the non-scientific public. The term *Spirit* has been associated with certain vulgar notions derived from fanciful mythologies and ghost stories. The term SOUL has been employed to express a

vague notion of *nothing at all*. It is too often a word substituted for a definite idea, and employed to hide our ignorance from ourselves or from others. To most minds the conception of *Soul* presents itself as merely a negation of being; as having neither form, nor shape, nor substance, nor qualities,—in fact, as an idealized nothing. But not such is the *Soul* which Psychology recognises as a subject for investigation. It seeks for a *definite something*, and when it speaks of “The Soul” or “The Spirit” of a Man it refers neither to “the spirits” of superstitious story, nor to the inconceivable nothing of the popular mind. Psychology intends by Soul the definite entity which has the consciousness of individual identity and which constitutes the individual Man.

This Society will do invaluable service to its Science if it could invent and procure the general adoption of some name as a substitute for the misleading terms “Soul” and “Spirit” to indicate the special subject of its own investigations and which should be free from the colour given to the popular names by foregone conclusions. Perhaps the term “*Psyche*” would serve the purpose. At all events it may be employed until some better one is found, and I should venture to recommend its general adoption, as being divested of all foregone prejudices, and as expressing with an appropriate title the *intelligent* motive force that directs the mechanism of Man. I have already

ventured to give to the Force that is the instrument by which the *Psyche* operates upon the material mechanism of the body and upon the external world, the title of *Psychic Force*.

Is it, as the Materialists assert, that Man is nothing more than the material structure perceptible to our senses?—that life is but the product of a certain combination and arrangement of molecules in the special manner we call organic? Is it that Mind—*Intelligence*—is but an action of that material structure and *Consciousness* merely a state of that organism? Is it that, when this combination of molecules is dissolved, life ends and with life the intelligence and the consciousness that were also the product of that combination? Or is it that *this thing that is conscious* is something other than the material organism of which it is conscious? Is the force that moves that complex mechanism self-generated? Is the Intelligence that directs it self-produced? Or is there not something in our material structure that is *non-material*—that is to say, constructed of some other combination of atoms than that which makes molecular structure—something that is in fact *ourselves*, and of which the body is merely the material mechanism through which that non-material something, from the very condition of its being, can alone hold communication with the material world.

This is the first question, surely of over-

whelming interest to every human being, that presents itself to the Psychologist. For a scientific answer to it he must consult—what? Not his inner consciousness, not his hopes and desires, not creeds, not dogmas, not opinions, not conjectures, but *facts*. He must do as did the discoverers of Electricity and Magnetism, as Faraday did, as Tyndall is doing; he must note the changes in the matter which alone his senses can perceive and seek in the phenomena exhibited by this matter if there be the presence of some entity or *force* that his senses are unable to perceive. If he finds the presence of some such imperceptible entity or force acting upon molecular structure, whether organic or inorganic, by noting with strict tests and repeated experiments the action of that force he will be enabled to learn much of its nature and qualities, and especially if it be a blind force or an *intelligent* force.

If it be a blind force, like magnetism, or any of the physical forces, he will be compelled to the conclusion that, like them, it attaches to matter generally and not especially to the individual.

But if he should find, as perhaps he will, that this force is an *intelligent* force—that is to say, that it has a *will* and *knowledge*, and cannot be commanded,—to what conclusion will he then come?

Inevitably that the intelligent motive force proceeds from something as imperceptible to the senses

of the observer as is Magnetism or Electricity. But Intelligence can only proceed from some being that is intelligent—some personality, some entity—call it what you please,—and if this is found to be associated with the individual Man, then the inevitable conclusion will be that Man has in him, or associated with him, some intelligent *being* other than his material structure.

It is to that intelligent entity, whatever it be, and if it be (which is the problem to be solved), that the name of *Soul* or *Spirit* has been given, but to which I prefer to give the name of *Psyche*, because the former names have been so loosely employed that they convey to the popular mind vague conceptions often differing greatly from that which is designed when they are used in a scientific sense.

If the fact of the existence of a *Psyche* be demonstrated scientifically, there will follow the scarcely less interesting questions—whence it is? what it is? what is its structure? what its shape? what are its faculties? what has been its past, if it has had a past? what will be its future, if a future be in store for it?

As I have said, the first business is to ascertain precisely what are *the facts*, and then, by reflection and discussion, to deduce from those facts the reasonable conclusions to which they point.

But *facts* to be used as the basis of science are not to be hastily accepted. Science has a right to

demand that their verity shall be established by *evidence* which, if not always amounting to positive demonstration, shall be such proof as the unbiassed judgment may reasonably accept. But in all cases the evidence must be the best evidence procurable that the nature of the case will permit. It is an inflexible rule of our Courts of Law that the best evidence only shall be accepted and that secondary evidence shall not be received when primary evidence can be had. It is a rule of reason and of common sense. Its observance is no less essential to scientific investigation, and I trust that by this Society no relaxation of it will be permitted. Necessarily we shall be called upon to deal with some reports of alleged phenomena of rare occurrence and transcending common experience. It is scarcely necessary to remind the members that a higher degree of proof should be required in proportion to the strangeness of the phenomenon and that strictest scrutiny must be made into the minutest details before the Society will be justified in giving to it a place among its records of psychological *facts*. The sufficiency of the applied tests must be examined—the accuracy of the observations must be *tried*—and, above all, it must be ascertained if there were not other more conclusive tests that might have been applied—tests that would have exhibited the truth or the error beyond dispute? and the question must always follow—If these conclusive tests were not tried, why not?

Having thus a firm basis of *fact* upon which to proceed, discussions upon *causes* will properly follow and these will involve problems of supreme importance, any one of which should suffice to attract to this Society every man who gives thought to the questions what he was, what he is, what he will be? Whence did I come? Where am I? Whither shall I go? We stand between two Eternities—the Eternity of the Past and the Eternity of the Future. We have emerged from the one and we are travelling into the other. Did we exist in that past Eternity? If so, where and how? What shall we be in the Eternity to come—and where? What is Soul? What is Matter? Is Matter merely the incrustation of spirit—atomic structure aggregated into molecular structure on the surface, as it were, and passing continually from one to the other—as the atmosphere becomes visible in the form of a cloud when it comes in contact with a colder body? Or is it that the vast interspaces between the worlds, those regions void to our senses, in which those countless worlds are but as grains of dust, are really thronged with life—possibly with intelligent life—which, because it is not of molecular structure, is imperceptible to our very limited material senses? *Can* it be that the spacious firmament on high, and even our atmosphere, is tenanted by races of beings whom we cannot perceive with any sense, perhaps not even our equals in intelligence, by

whom some of the acts are done which undoubtedly are performed by no corporeal hands? Or, is it, as some contend, that the agents or their phenomena are the disembodied spirits of men and women like ourselves, who have passed away from mortal life but not from mortal interests and regards? Is there for us another existence when this has closed? Where? In what conditions? Are we to preserve our individuality? If so, have we lived in the past? How? Where? When the mechanism that has served it or clothed it falls to ruin, does the disembodied Soul revive the recollection of its past existence, or, if more than one, of all its past lives? These are a few of the profoundly interesting questions that present themselves in this single branch of Psychology.

But I might occupy another hour in a mere enumeration of the various questions that are offered to the view even by so hasty a glance as this of necessity must be over the Province of Psychology. I have stated some of the foremost of them only, but enough, I hope, to satisfy the most sceptical that there is a vast and as yet almost unexplored realm of Science open to such a Society as this. To reap the full harvest of investigation there cannot be too many explorers and we invite all who take an interest in these questions to come and join us in the search.

The process by which we propose to conduct the exploration of this so rarely visited region will

be, first, by collection of *facts* and, secondly, by discussion upon them with purpose to trace their *causes* and *consequences*. Our primary endeavour will be to secure authenticated reports of all Psychological phenomena, and to subject whatever may be presented to our notice to the severest scrutiny, so to ascertain, if possible, what claim it has to be received and registered as a *fact*.* We hope that, such being our avowed

* In the discussion that followed this address the pertinent question was put to me—"What do you mean by a *fact*? What is a *fact*?" I answered that the term "a fact" is here used in contra-distinction to a conjecture, or a bare assertion unsupported by any *evidence*. A *fact*, in the scientific sense, equally as in legal contemplation and in common sense, is anything, or any state or condition of anything, the existence of which is proved by *evidence*. A fact cannot properly be accepted as such without *proof*, that is to say without evidence of its being. There are, and ever will be, differences of opinion as to what evidence is sufficient to prove a fact, but no proof can be admissible for the purposes of Science which is not also sufficient for the common purposes of life.

But alike for scientific and for social purposes, we must be content with what is called *relative* truth—by which I intend that which appears to be truth according to our mental structure. It is merely a waste of time and thought to hunt after *absolute* truth. We can only know according to the conditions of our being, and we must be content to assume that things are as they appear to be to our cultivated senses and intelligence. For instance, it may be, as some philosophers have contended, that there is no objective existence, that the world is all within us; that there is no correspondence between our mental perceptions and the things we suppose ourselves to perceive. But it is sufficient for all the purposes of existence in this world that we treat as real what our senses inform us as existing, especially if

purpose, no person, however great his authority, will take offence if we subject him to the most severe cross-examination upon any asserted obser-

we find that the senses of others convey to them the like impressions. *Absolute* truth being unattainable, we must be content with *relative* truth; and if this were once recognized, there would be an end to a world of worthless controversy. It suffices for every purpose of mundane existence to accept the external world as a *fact*. I may be a mere illusion of *your* mind, *you* may be an illusion of *my* mind; but so long as we both agree in recognizing the existence of each other, we may treat and think of each other as objective realities, and set ourselves down as *facts* in Physiology and Psychology.

The degree of proof requisite for the establishment⁴ of a *fact* is a fair question for discussion, and it must certainly vary with the various characters of the facts to be proved. There is no great difficulty in determining this. It is done hourly by all of us in the common affairs of life. More difficult questions are decided daily in our Courts of Justice by common minds exercising their common sense. A fact cannot be proved argumentatively whether in Science or in law. It must be something of which the senses have taken cognizance. The fallacy that most seriously impedes the recognition of facts prevails very widely, and quite as much among Scientists as with the uninstructed. It is the consequence of the prevalent habit of not separating the fact from some real or imagined cause of it. If, for instance, before the discovery and investigation of magnetism, five persons had said, "We saw a bar of iron mount in the air untouched and attach itself to a stone held above it," the Scientists of that time would certainly have said, "We do not believe you; it is contrary to the laws of nature for a heavy body without life to rise and float in the air. It is contrary to common experience. You were dreaming, or some conjuror was deluding you. You are either fools or knaves." If the witnesses had said "But we all saw it at the same time, and it was repeated several times. Come and see, and try it," the Scientists would

vations, seeing that we have no other desire nor design than to discover the very truth. When important occasions demand, we shall appoint Committees of Inquiry to examine, and test, and report results. But opinions and speculations *based upon the facts* we shall receive from all quarters and on any side of any question, if only they be temperately advanced.

Should the growth of the Society in numbers permit, we contemplate the periodical publication, not of a mass of essays, but of *Psychological Facts* collected from all parts of the world, which being first duly authenticated, will be narrated without note or comment, so that Science may possess, what it has long wanted, a storehouse of *facts* to which Psychologists everywhere may refer when laying the foundation of any branch of their Science, instead of indulging in the

have answered then, and doubtless did answer, for the history of Science has been one long tale of the same fallacious argument *a priori*—"it cannot be" confronted by the fact that *it is*. "We will not waste time in viewing what we know to be impossible. If we saw it we should not believe it. We should rather conclude that our senses were deceiving us than that a law of nature should be violated." Still this fallacy prevails of not separating the fact from the causes of the fact—first ascertaining the fact and then tracing its cause. Instead of inquiring if the steel leaped to the magnet contrary to the law of gravitation, and then investigating the cause, and whether it was a trick or a hitherto unobserved phenomenon, they preferred to deny the fact of the motion itself. And as it was, so it is, and probably will ever be.

fascinating amusement of conjecture and surmise, which hitherto has been the almost unavoidable practice, by reason of the absence of any reliable work in which the authenticated facts were to be found collected. When permitted, the names of the reporting authorities will be given; when this is objected to, the Society will investigate the authority and guarantee that the facts have been duly authenticated to itself. Thus limited strictly to the recording of phenomena, and wasting no space on mere disquisition, there can be no doubt that this publication, when the funds of the Society shall permit the enterprise, will be one of the most interesting, instructive, and valuable works ever presented to the scientific library.

That its researches may have the largest possible range, the *Psychological Society of Great Britain* will welcome as Honorary and Corresponding Members the Psychologists of all other countries, who will be invited to send reports of Psychological Phenomena coming within their own observation, and to enrich its discussions with papers on themes properly within the province of the Society.

Regulations will be framed for the ordering of the Meetings, limiting the length alike of papers and speeches. This is found to be a necessary rule in all Societies where discussion is desired. It will be especially requisite in this, where the subjects

to be discussed are of such transcendent and universal interest, and on which almost every member will have formed some opinion of his own which he will doubtless desire to express.

The Council have resolved carefully to limit expenses to means, and from a small beginning they hope and expect that the Society will grow to greatness. Ultimately we hope to possess a local habitation, to collect a Psychological Library, to open a reading room, and have a paid officer to conduct our business.

The subscriptions now paid will extend through the current year. Of necessity the first officers of the infant Society have been self-appointed, but it must be understood that they hold office only provisionally, until the commencement of the Second Session, when the election of the entire body, including the President, will be relegated to the members.

In conclusion, let me express a hope that the press will give to our labours so much of its good will as to regularly notice the proceedings of this as of other scientific Societies. The members must not be disappointed if the columns of certain journals who affect to lead literature and science should be closed against them for some time to come. Truth must still be content to fight its way by its own force, as always it has done before. It is often easier to gag an opponent than to answer him.

But we have always this assurance—that we propose to build our science of Psychology on the firm foundation of *fact*. Theories may be exploded by argument, but no argument will answer *a fact*. Deductions from facts may be disputed, and are often disputable, but the *fact* remains as before. No amount of logical contention that it *cannot* be changes for an instant the position of the assertion that *it is*. *Facts* can be refuted only by investigation, by experiment, and by positive proof that their supposed existence is a dream or a delusion. No power on earth can destroy a *fact*. No force of king or populace—no denunciation of dogmatists, scientific or sacerdotal—no reasoning *à priori*, however ingenious—no sneer nor jeer of conceited ignorance, nor jokes of jack-puddings, can extinguish *a fact*. To all such impotent endeavours Science will still return the same response with which the astronomer of old accompanied the forced recantation of his scientific heresy of the revolution of the earth, “*But it moves nevertheless !*”

ON
SOME OF THE PHENOMENA
OF
SLEEP AND DREAM.

READ AT THE MEETING OF THE

Psychological Society of Great Britain,

MAY 12, 1875,

BY

MR. SERJEANT COX,

PRESIDENT.

ON
SOME OF THE PHENOMENA
OF
SLEEP AND DREAM.

. “ *We* are such stuff
As dreams are made of and our little life
Is rounded by a sleep.”

So says Shakespeare. The question to-night is—Of *what stuff* are dreams made?

You are at this moment conscious. You are in the full possession of all the faculties of your mind—that is to say, you can control and regulate their action. You can, by the exercise of your Will, cause your thoughts to follow each other in a certain order. You can, as it were, sit in judgment upon your thoughts—accept such as are fit for use, reject such as are useless or incongruous. You can compare thought with thought and deduce rational conclusions from the relationship of those thoughts.

You are *awake*.

What is the “*you*” that does this? What is *the thing*, distinct from the thoughts that are controlled, marshalled, and judged, which so deals with them when you are awake?

We cannot enter upon that question now. It is too large a subject for discussion in this paper. It must be reserved for special examination hereafter.

For the present purpose it suffices that, when you are awake, some entity we call "*You,*" or "*I,*" exercises an intelligent direction over the process of thought by force of a power we call "*THE WILL.*"

But suddenly the thoughts, so orderly before, fall into disorder. They follow in no definite course. They flow with no discoverable connection. They wander about in all directions. You try to retain or to recal them. For a moment, perhaps, you succeed and the orderly train of ideas proceeds as before. But soon they are starting off again more wildly than ever. The work of reining them in may be thus performed twice or thrice, but unless something startles you into wakefulness, they speedily break away from all restraint and are scattered beyond recovery.

You are *dreaming*.

By one who views you during this process your head will be seen to nod, your eyes to become fixed, your eyelids to droop, your limbs to relax. Occasionally you will start and resume a kind of stupid animation. The eyelids are lifted. The eyes exhibit consciousness.

You are *falling asleep*.

For a moment only. Soon the same paralysed aspect recurs and there is no recovery from it.

You are *asleep*.

This condition of the body accompanies the mental condition described. *Sleep* and *dream* are coincident conditions.

The bodily change that attends sleep is a depletion of the blood from the brain, attended by its necessary consequence, a collapse of the fibrous structure of the brain. Of this any person may satisfy himself by noting the very

perceptible inflation of his brain that follows upon a sudden awakening. The blood is felt to be rushing into the brain attended by a sense of fullness and expansion.

But what is the *mental* condition? That is the question to which I now invite the attention of the Society.

The subject is a very large one, and I cannot possibly treat of it in one paper. This evening I can hope to invoke discussion upon what can be little more than introductory.

Familiarity has destroyed the wonder of it to us, but what can be more wonderful in itself that the change that is accomplished in a moment from the mind awake to the mind asleep?

Suddenly that which before was real is unreal, and that which was unreal is real. Things cease to become thoughts, and thoughts become things. All the conditions of conscious existence are reversed. The mental faculties that are exercised in the process of reason are in abeyance. The mind is incapable of comparing one idea with another, or of holding any thought before itself for examination or judgment. The experiences of the past have no influence over the impressions of the present. The world without is all a dream (with some limitations to be described hereafter). The world within is the actual world to us.

This entire mental revolution is the work of an instant. It is done literally in the twinkling of an eye. We have not time even to be conscious of the change. There is no moment when we can feel "Now I am awake," and "Now I am dreaming," or mark the very passage from the one condition to the other. The whole state of our mental existence is reversed and yet we seek in vain to know the precise period of the overthrow.

May not this psychological fact, occurring to all of us daily, indicate that to the mind, when temporarily released from the conditions of molecular substance, there may be

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other measures of time and infinitely speedier powers of action than when it works subject to a material structure? But this is by the way.

What is the change that sleep thus instantly accomplishes in the mental condition? What does it teach?

In the first place, it shows us that the mind does not work as one entire mechanism to produce one result, each distinct thought and emotion being a state or product of the whole mental machine, as contended by Dr. CARPENTER; but that certain parts of the mental mechanism (whatever that may be) work separately from the other parts. In the operation of dream there is the manifest activity of some faculties, while others are in abeyance. If action of the whole machine were required for each mental act, dream would be impossible, for the whole machine would wake or sleep together and there would either be the reasonable action of waking or the unconscious condition of coma.

We may, therefore, take it as conclusive, that in dreams some of the mental faculties are active and some are at rest—some probably asleep while others are awake.

The next question is, if in sleep and dream certain faculties are always awake and active and certain other faculties always slumbering or inactive?

After a careful review of all my own memories of dream, I am inclined to the conclusion that every mental faculty is sometimes waking and sometimes sleeping, and consequently that the whole brain rarely, if ever, sleeps at the same moment—that some portions of it are active while others are resting, and thence the variations in the character of dreams, not merely from sleep to sleep, but at different periods of the same slumber.

The important fact of the *Duality of the Mind*, as asserted by BROWN-SEQUARD, and which is either the cause

or the consequence of the duplex structure of the brain, in accordance with the duplex structure of the body, will doubtless be found, upon further investigation, to account for many of the hitherto inexplicable phenomena of dream. It may be that, as the brain has two hemispheres, and as consequently all the mental faculties are double, one hemisphere of the brain sleeps while the other wakes, and hence some of the peculiar characteristics of dream presently to be noticed. This certainly appears more probable than that some only of the faculties should be suspended while others are active. In what manner the suspension of the activity of one of our *two minds* would be likely to affect mental action, so as to explain the phenomena of dream, is an inquiry too large to be entered upon here. I hope to return to it hereafter. But in the meanwhile I would venture to invite to this question the serious attention of Psychologists.

What, then, are the most remarkable features of dream?

Foremost of them is the continuous stream of *ideas*, by which term I here intend the mental pictures of things. These occupy the greater portion of our dreams. They are not always images of existing objects, for often they are forms which the eye has never seen, but which, nevertheless, are constructed by putting together the mental images of objects that have been seen. Impressions conveyed by other senses than sight are often reproduced, such as sounds, scents, tastes, and past nerve-pains and pleasures. Indeed, whatever has been at any time impressed upon the mind and become a memory may be recalled in dream, either alone or in association with other memories.

Very much light would be thrown on the phenomena of dream if some man born blind, and who, therefore, can have no mental memories of vision, would describe to us minutely what "stuff" *his dreams* are made of. Does he

dream that he *sees* objects, or only that he *feels* them? Has he *visions*, and what are they? If any intelligent and educated person, labouring under the affliction of blindness from birth, would favour this Society with a minute account of his dreams, I cannot but think that a great service would be done to Psychology by facts which, better than any amount of argument and conjecture, would show us what, if any, ideas are innate, what are brought to us by the senses, and in what manner the mind uses the impressions of the senses for the moulding of its own productions. Of scarcely lesser importance would be a like communication from the deaf. Do *they* dream of *sounds*? Does a deaf man ever dream that he hears music?

But the ideas or images of objects that flow into the mind in dream are rarely or never isolated ideas. They do not come in a confused crowd, nor do they stand alone. Like the beads and scraps of glass that are thrown into the kaleidoscope, and which every turn of the instrument shapes into a new and definite form, the ideas that come into the mind without order are in dream blended together in shapes more or less connected. In addition to the mental faculty engaged in the presentation of ideas, another mental faculty is employed in the *invention* of the story that links them together. Here are two mental faculties at the least that are undoubtedly awake and active in dream.

It is an unsolved problem if in dream *any* of the faculties are actually sleeping. At the first glance it would appear that sleep, or some other disability, suspends the activity of the faculties, whatever they be, that give us the consciousness of congruity and incongruity—that is to say, the faculty of *comparison* and that combination of faculties whose joint action constitutes what we describe in one word as *reason*.

In dream there is no sense of incongruity. The most
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impossible things are brought together and the mind accepts them as realities and feels no surprise. Friends long dead are with us and we wonder not how or why. We do impossible things and forget that they are impossible. We walk upon water, fly through the air, are transported hither and thither without passing through the intermediate distance, and there is no sense of surprise, no consciousness of impossibility. We have the strength of a giant, the fleetness of an antelope, the eloquence of a Cicero, and wield the pen of a Milton, and we never ask ourselves why our present self comes to be so unlike our former self as we were but a moment before ! Reason, so prompt, ere we had fallen asleep, to separate the real from the ideal, the true from the false, the possible from the impossible, is in an instant extinguished ! The Mind, so sane before, is, in fact, insane now, for in sleep Insanity is the normal condition. We are all madmen in our dreams. In truth, how large a part of our lives is really passed in a state of delusion. The man we call mad is only a man who dreams always. We are all what he is when we sleep. He is only called not sane because he does not become what we are when he is awake.

Although ideas are facts to us in dreams, and we implicitly believe them to be realities at the time of their presentation, and they are usually woven together by some thread of relationship, the mind does not sit in judgment upon them as when we are awake. If, for instance, two or more incongruous objects or a series of impossible events were to present themselves to us in our waking state, we should feel the sensation of wonder and instantly compare them with other objects or memories of objects, and our reasoning faculties would be set in motion to inquire into causes and reconcile the apparent incongruities. But in *dream* the mind entertains the inconsistent images and accepts the

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impossibilities with the utmost complacency. It makes no comparison between the present object and its recollections of the past and the reasoning faculty is not employed to try the truth of the present appearances.

In what, then, does the *sleeping* mind differ from the *waking* mind?

First, you have lost your control over the action of the mental faculties. Your Will has ceased to direct them. Hence their dislocation and the disorder that attends their actions.

But *you* are still conscious. *You* know that it is yourself that is dreaming the dream. Although the dream creates in you no surprise, you never for an instant lose your consciousness of your own individuality—that it is yourself that is playing the part in the dream drama. Never do you suppose yourself to be some other person. You may dream that you are a king or a beggar, but it is yourself that has risen or fallen. Your consciousness and conviction of identity remain unshaken amid all the impossibilities with which your ideal existence is encompassed by the fictions of your own making. Is not this another proof that *you*, the dreamer, are not the *thing* that makes the dream (for you cannot be both cause and consequence), but only the recipient of the impression of the dream from the mechanism that makes the dream?

If, then, the individual consciousness continues *awake*, the seat of the condition of dream is to be sought in some part of the process of mental action between the presentation of an idea and the impression of it upon the consciousness.

What is wanting here? There are two processes by which the waking mind is governed. The Intelligent Self forms the desire, and the Will is the instrument or power by which that desire is accomplished.

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In the waking and normal state the brain works under the control of *the Will*.

In the condition of dream, *the Will* is either sleeping or paralysed. Therefore it is that in dream the mental faculties act without control, each one according to its own impulses.

But the dreamer is *conscious* of the mental action, although he cannot control it. The Self is merely a passive recipient of the impressions caused by the brain action. We perceive what the brain is doing—that is to say, the successive conditions into which it is thrown,—but we are unable to control those conditions. The power is wanting by which the Conscious Self controls them in the waking state. That absent power is *the Will*. But the Will is only a force which something wields. What wields the Will? The Self. Upon what is it directed? The Brain. Thus we have it distinctly proved that the Self is not the brain. We learn also that the Will is not the link between the Conscious Self and the brain. The Self is connected with the material mental organ by some other link, for in dream the consciousness remains although the power of the Will is suspended.

The question here presents itself, wherefore does the Conscious Self accept the impressions of brain action in dream without questioning their reality, their congruity, or even their possibility? It does not so when the brain is awake. Then the Conscious Self sits in judgment upon the impressions brought to it by the brain, and is enabled to distinguish between the actual and the ideal, the objective and the subjective. Why not in dream also?

The Conscious Self feels no surprise in dream, however strange the vision presented to it, simply because the condition of its relationship to the brain, as the material organ through which alone it can maintain communication

with the external material world, compels it to accept the impressions made upon it by brain action as realities that have, in the normal state of that relationship, a corresponding external existence by which that action of the brain was caused. True, that the waking brain has not unfrequently self-produced impressions, as always they are in dream. But the Conscious Self has learned this fact from experience, and setting its will-power in action, it tries these impressions by certain mental tests, which enable it, usually but not always, to discriminate between the actual and the ideal—the fact and the fancy.

The reason why the Conscious Self does not so discriminate in dream may be thus stated. The power of the Will being suspended in dream, one mental faculty cannot be brought to bear upon another for the purpose of comparison and reasoning as when we are awake, and therefore all impressions received from the material organ of the mind are accepted as real. The process of reasoning requires the combined action of several mental faculties and probably also the united action of the two hemispheres of the brain—or the *two minds* as BROWN-SEQUARD calls them. If any of those faculties or one entire hemisphere of the brain be sleeping, the process of reasoning is impracticable, and the mental impressions are accepted as real because the test is wanting by which the reality and unreality of mental impressions are determined in the normal condition of the brain.

So far, I have referred only to *ideas* presented in dream—the *pictures* which the brain paints. But the *emotions* are called into action in dream, and the Conscious Self receives the impressions of them also and *feels* them. How is this?

The emotions never come into action capriciously. They can be created only by something presented to them

by others of the mental faculties. We do not feel hate, or anger, or love in the abstract. The presentation of some object, real or ideal, by one of the other mental faculties is necessary to the kindling of an emotion. When the proper object is presented, the emotion follows, without the exercise of our Will and often in opposition to it. So it is in dream. The inventive faculties construct the story and the presentation of that story to the emotional faculties excites them to involuntary action. Hence it is that in dream we feel the love, hate, fear, anger, which the incidents of the dream would have excited in reality, the events and persons being accepted as real by the other faculties and by the Conscious Self.

Thus the *emotions* are excited in dream, as they are excited in our waking state, by the presentation to them of *ideas*. Awake, we find love or hate, fear or desire, provoked as often (and even more frequently) by ideal pictures as by real external objects. In sleep the picture painted by the dreaming fancy invokes the appropriate emotions. As the *ideas* in dream pass through the mind without the direction of the Will, so are the emotions excited without control. Consequently in dream the passions and sentiments often prevail with more fury than ever they burned in us in our waking state.

But there is a peculiarity in dream to which I invite special attention, for I do not remember that it has been noticed by any of those who have treated of its phenomena. In dream we are all dramatists and actors. The most stupid, equally with the most intelligent, invent plots, construct characters, and frame dialogues. A dream is rarely, if ever, a simple reproduction of an actual occurrence. It is always mingled with more or less of fancy. The materials are, of course, quarried from the memory, but these are recombined to make new forms, precisely

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as it is with the novelist or the dramatist. Reflect what the dreamer does! For every dream that has continuity his mind invents a story, often complicated and ingenious. The actors in that story are as frequently creations of the fancy as revivals of the memories of the dead or representations of the living. But perhaps the most marvellous feature of this strange psychical performance is the dialogue. Each personage in the dream plays his own part perfectly. He converses freely and in strict keeping with his character, and often the dialogue, as in the acted play, or in the drama of real life, is maintained by half-a-dozen speakers!

What a wonderful process this is! And yet the dreaming mind does it all! That mind constructs a story, invents characters, and improvises a long dramatic scene, in which the whole dialogue is supplied by itself! And this is not a miracle peculiar to the intelligent and educated mind. It is performed also by the most stupid and illiterate. It is strictly true, that every ploughboy is every night at once a novelist and a dramatist, and this, too, of no mean capacity. To me there is nothing in all the strange phenomena of dream so strange as this, or the study of which promises to throw so much light upon the mental faculties and the manner of their action.

But although the mind is the inventor of this acted drama, it is wholly unconscious that the drama it is creating is an invention of its own. That which itself has created it believes implicitly to be an objective reality. It is satisfied that it sees those places and hears those persons, and that the speeches that fall from their lips are their own, ignorant that it is itself the inventor of that which itself is contemplating.

Is not this a second proof offered by the phenomena of dream, that the brain that acts and the Conscious Self that

takes cognizance of the actions of the brain are *distinct entities*? Awake, the brain works and the Conscious Self takes notice of its working. That self-consciousness is asserted by the Materialists to be merely the consciousness by the brain of its own conditions. If it were so, the brain would be as conscious of its own conditions and actions in dream as when awake. It is otherwise in fact. In dream, the brain works as in the waking state, but the Self is unable to distinguish the inventions of the brain from the impressions of external objects. This change in the conditions could only be by some change in the relationship of the Conscious Self to the dreaming mind. Such a change implies that they are not identical, but distinct entities. It follows that if there be both the Conscious Self and the mind or brain of whose actions that Self is conscious, the existence of *something* in us, other than the corporeal mental mechanism, is demonstrated.

Thus in the phenomena of dream we find the strongest scientific evidence of the existence of SOUL.

A dream is not a desultory flow of disordered images and disjointed ideas; it observes a definite arrangement in the shape of a continuous and connected action, following apparently the same law of association that governs the advent of ideas in the waking state. It is important also to observe that, as in the waking state, the ideas in dream come *in succession*, two or more never presenting themselves at the same instant. Hence our conception of *time*, which is consequent upon the mental structure that entertains ideas only in succession, one following another. If the mind had been so structured as to entertain many ideas together, we should have quite another conception of time than that we now form. The ideas thus produced by the brain in a stream are presented to the Conscious Self in the same order of succession; and

hence that Self, in the normal condition of its relationship to the body, has only the conception of time that results from the successive actions of the brain. But it is something more than probable—it is almost certain—that if the conscious Self were severed from its association with the material organ, through which alone it can communicate with the material world so far as to receive impressions directly, it could perceive simultaneously what through the mechanism of the brain it can receive only in succession, and therefore that the conception of time to such a disembodied self would be altogether different from that which it possesses when informed only through the medium of the brain.

The practical result of this suggestion is that what we call *time* is merely a human conception, the product of brain structure; and that to a being differently structured, and to ourselves when the relationship of the Soul to the body is changed, time may be something altogether different from that which it appears to us now.

And there is, in fact, a very great difference between the waking and the sleeping mind in its conceptions of time. In dream, a whole seeming history will be enacted in an hour which, to have been acted in reality, would have occupied days or even years. It was the notion of Lord BROUGHAM, based upon a dream of long continued action that occurred to him during a brief slumber in court, induced by the drone of some tedious counsel, that dream took place only when in the act of falling asleep or of waking, and not during actual sleep. But this is contradicted by the experience of any person who has been suddenly wakened from sleep, and who will have found his dream as abruptly interrupted. The fact is, that in dream there is no other measure of time than the flow of ideas. When uncontrolled by the Will, the mind produces and presents ideas with incalculable rapidity. The number of ideas is

the count of time to the dreamer. If in a sleep of five minutes as many ideas flit through the brain as in five hours of waking, the measure of time to the dreaming, as to the waking, mind will be the number of ideas and the rapidity of their stream. But in the waking state the mental impressions are corrected by past experiences. In dream, the rapidity of the stream of ideas within, and the absence of any correcting impressions from without, combine to cause an action, that lasts in reality but five minutes, to appear to the Conscious Self as five days.

The psychological importance of this is very great. It serves to correct our notions of time by showing us that it is a human conception merely, and altogether different even in the waking and dreaming conditions of the mind. Faulty notions of time, space, and such like mental conceptions dependent upon mental structure, lie so at the root of popular fallacies, and are so frequent and yet so rarely recognised even by the educated, that some service may be done by inviting attention to the striking proofs of their fallacious character that are found in the Phenomena of Dream.

In sleep, the conception of time, as measured by external events, is not always wholly suspended. The desire to wake at a particular hour often produces the result. But this is not, as some have assumed, the consequence of a measure of time kept by the mind in sleep, for waking during the night, in the absence of an external indication of time, we have no knowledge what the hour is, nor how long we have been sleeping. That waking at the desired hour must be due to some other process than counting in our sleep the march of time. What is that process is a question that well deserves examination.

But my allotted time is exhausted. The subject is so large that I have been unable to do more than touch the fringe of it. The questions it involves, and which, pro-

bably, it will go far to solve, are so important to Psychological Science that I hope to return to the subject hereafter. I will merely now shortly sum up the principal arguments of this paper—a plan which I would respectfully suggest to all who may contribute to our discussions, as being the best means of impressing that argument upon the memories alike of hearers and readers, besides assuring themselves of the definiteness and value of their own suggestions.

1. Awake, the Conscious Self controls the action of the brain, which is the material organ through which the Conscious Self communicates with the material world.

2. The power or force by which this Self controls the action of the material mental organ, the brain, is that called **THE WILL**.

3. In sleep, the action of the Will is suspended, but *consciousness* remains. The Conscious Self perceives, and often remembers, the dream presented to it by the brain.

4. But the Conscious Self receives the impressions of the brain action as they are presented, but being unable, by reason of the suspension of the Will, to bring the faculties of comparison and reasoning to bear upon them, it is unable to distinguish between the ideas self-produced and ideas that are impressions of material external objects. Hence the implicit acceptance of dreams as realities.

5. In dream there is no discerning of incongruity or impossibility. This curious condition is due to the like cause. The paralysis of the Will prevents the calling in of the aid of the “judging faculties,” the process by which, in the normal waking state, we are enabled to distinguish external facts from self-produced fancies.

6. It is a question for consideration whether this may not be due in whole or in part to the *Duality of the Mind* asserted by BROWN-SEQUARD.

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7. In Dream, the conception of *Time* is lost. Adventures that appear to the mind to occupy a week are really enacted by the mind in five minutes. This is the consequence of mental structure, which can entertain but one image or idea in the same instant of time, combined with extreme rapidity of the stream of ideas when uncontrolled by the Will.

8. The mind does not measure time in sleep otherwise than by the succession of ideas. It is deprived of the corrections which in the waking state are supplied by external objects. Hence the conceptions of Time in dream are altogether different from our conceptions of it when awake.

9. The severance of the Conscious Self from the mind and its operations, so remarkably shown in these phenomena of Sleep and Dream, are of the greatest importance to Psychology, as proving the non-identity of the Conscious Self and the brain as the mental organ, and therefore as supplying almost conclusive evidence of the existence of SOUL as an entity distinct from the material brain.

10. Dreams are inventions of the sleeper's mind. In sleep we are all novelists and dramatists. The most stupid constructs, plots, invents characters and places in the mouth of such, however numerous, appropriate dialogues.

SOME MORE PHENOMENA

OF

SLEEP AND DREAM.

(Paper read to the Psychological Society of Great Britain by the President, Mr. SERJEANT COX, Feb. 1, 1877.)

O sleep! O gentle sleep!
Nature's soft nurse, how have I frightened thee
That thou no more wilt weigh my eyelids down
And steep my senses in forgetfulness?
Why rather, Sleep, liest thou in smoky cribs,
Upon uneasy pallets stretching thee,
Than in the perfumed chambers of the great
Under the canopies of costly state
And lulled with sounds of sweetest melody?
O thou dull god! Why liest thou with the vile
In loathsome beds and leavest the kingly couch
A watch case or a common 'larum bell.
Wilt thou upon the high and giddy mast
Seal up the shipboy's eyes and rock his brains
In cradle of the rude imperious surge,
And in the visitation of the winds
Who take the ruffian billows by the top,
Curling their monstrous heads and hanging them
With deafening clamours in the slippery clouds,
That with the hurly Death itself awakes?

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Canst thou, O partial Sleep, give thy repose
To the wet sea-boy in an hour so rude
And, in the calmest and most stilly night,
With all appliances and means to boot,
Deny it to a king?

What is this coveted sleep that least comes when it is most courted?

Viewed physiologically, it is a collapse of the fibres of the brain, either caused by or causing (as yet we know not which) the expulsion of a portion of the blood from the capillaries with which the brain is everywhere interlaced.

Wakefulness is the direct result of the brain refusing to collapse and therefore continuing in the same turgid condition as when it is performing the work of waking life.

Natural causes of this refusal to collapse are over excitement of the whole or a part of the brain (as the leg refuses to rest after excessive walking); or an inflammatory or congested condition of the brain, as in some fevers and notably in that which is called brain fever.

And wakefulness may be artificially produced by stimulants that do the work of disease, keeping the brain fibres in forced action by blood purposely sent to them.

This sketch of the physiology of sleep teaches some useful lessons.

It explains the difficulty of forcing oneself to sleep and the futility of the prescriptions for sleep proffered to the sufferer from sleeplessness, all being based upon the notion of fixing the mind upon one subject, as counting imaginary sleep, making believe that you watch your breath, and such like. It is because the brain is in a state of excitement and will wander that the patient is unable to sleep. He cannot concentrate his mind on one thought. If he could, he would fall asleep without troubling himself to count a flock of sheep.

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But what is the *mental condition* of sleep? That is the question for Psychology.

To make this intelligible and to show how it bears on the Psychology of *Dream*, I must very briefly describe the structure of the brain, which is the thing that sleeps. The Soul, or whatever you are pleased to call the Conscious Self, does not sleep, but only its material organ.

The brain is a duplex structure, that is to say, we have *two brains*, as we have two arms, legs and eyes, and each brain is in itself a distinct and perfect machine—as perfect as is each arm and each eye. The eyes, ears and other organs of the senses, all of which are duplex also, are in their normal condition so admirably adjusted to each other that we are not conscious of the duplex impression made upon the sense nerves. So in their healthy condition do the sense nerves act in perfect unison and thus convey to the *Self* the consciousness of one action or impression only. I will explain it thus, referring still to the analogous mechanism of the double organ of sight, because it is most familiar to you. We have two eyes, on each of which a separate image of the object is impressed. But the two eyes do not receive precisely the same picture, as you may satisfy yourselves in a moment by looking at any object with one eye only—then closing that eye and looking at the same object with the other eye. It will be found that the position of the pictures is changed and you see more with the one and less with the other. But when you look at it with both eyes at once, although two different pictures are impressed upon the two eyes, the mind perceives only one picture. Nor is this all. The picture perceived by the mind is not precisely the picture impressed on either eye, but a new picture constructed of both. The stereoscope is a practical adaptation of this mechanism of vision. It does before the eyes what the nerves of vision accomplish behind them.

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The physical process is very interesting. ~~The two~~ branches of the nerves of vision which run to the eyes unite and a single nerve thread (which, however, is probably not one but the two sheathed together) joins the ganglion at the base of the brain in which all the nerves of the senses converge. Upon this ganglion rest the two brain hemispheres and thus it is that ~~this~~ ganglion communicates with and as it were unites the action of the two brains. Thus the impression made on the nerves of the senses are communicated to both brains and impart to the Conscious Self the sensation which we call, as the case may be, a sight, a sound, a feeling, a smell, a taste, all of which, although we are accustomed to attribute them to external objects as their cause, are only sensations in ourselves produced by the presence of those objects.

Thus it is that, although when an object of sight is presented to the two organs of vision the sensations as of two pictures are brought by the nerve to the brain, the impression made upon the Conscious Self is of one impression only. So admirably are the double organs adjusted to each other.

That so it is we discover unpleasantly when disease or accident destroys this nice adjustment. You can find it for yourselves in a moment, as I have already said, by closing one eye at a time when looking at one object. The loss, temporary or permanent, of one eye does not destroy the sight; but we see less perfectly—less roundly, as it were; the difference being precisely that of a picture seen through the spectroscope and the same picture seen without the aid of the adjusting glass.

Precisely thus it is with our two brains. They act together as do the two eyes. In health, their relationship is so perfectly adjusted that the Conscious Self is unconscious of the double action. But in abnormal conditions the two

brains cease to act together. Then the Conscious Self receives either the imperfect impressions of one brain only, or distinct and often conflicting impressions of the two brains.

This is the simple explanation of a large number of mental phenomena, the causes of which have been among the most insoluble problems of Physiology and Psychology.

It will explain, also, not a few of the phenomena of sleep and dream.

The whole brain rarely sleeps at the same time. Some parts of it, by reason of insufficient depletion of blood corpuscles, remain sufficiently excited to maintain more or less of action. Whatever it be that in our waking state sets up motion in the fibres of the brain and so gives to the Conscious Self the impressions we call emotions and ideas, that motive force continues to excite the same action in sleep, and according to the more or less of power so exercised is probably the vividness of the dream which it suggests.

But we have two brains, each having the same organs, competent to act together or separately—when they work properly together producing the most perfect mental action ; when working separately, or one working alone, producing imperfect mental action, as may be seen in hemiplegia, which is an affection of one of the brains only, and hence the impairment of one side only of the body.

Obviously in the condition of perfect sleep by the entire mental machinery of the brain there could be no dream. Such condition is rare. But it has occurred probably within the memory of all around me, as after long absence of sleep or great fatigue. Then the whole brain sleeps, or seems to sleep, and the Self has no consciousness of any impressions being received from the brain. In such a sleep, even though of many hours duration, the mind has no consciousness of time and the moment of waking seems to have followed

immediately upon the moment of falling asleep. There is no dream,—or at least, there is no consciousness of dream.

The physiology of dream, then, is a partial slumber of the brain. Some parts of it only are sleeping, other parts are more or less wakeful, that is to say, more or less in action, and brain action means the performance of the function of conveying impressions to the Conscious Self and receiving impressions from it.

But this condition is immensely complicated by the fact of our having *two* brains. Save in such rare cases as above referred to, it is not probable that the entire of both brains would be asleep together, and this brings me to the problem, what bearing upon the production of dreams has this fact of a double brain? It is a fundamental fact which has not been sufficiently recognised as an element in the psychology of dreaming by any of the numerous thinkers who have treated of this most interesting and important mental process.

If dream occurs only when a portion of the brain is waking—the question at once presents itself whether the problem of partial sleep may not be solved by reference to the double action of the two brains. It is difficult to accept as an explanation of dream that parts only of the brain are asleep while other parts are awake. Although Professor FERRIER has proved to demonstration that the whole brain is not employed in each mental act, but that different parts of the brain have different functions, we do not as yet know what are those parts, nor what are the precise functions of each part. But we know that the parts must be many and compacted together closely, and it is difficult to imagine one of these parts being asleep while its neighbours are awake, which must be the case if that be the explanation of dream. But may not the difficulty be removed by taking into consideration the fact that we have the two brains and supposing the condition of sleep to be the slumber either of

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the entire of one of the two brains while the other brain is awake, or the sleep of parts of each brain, but those not corresponding parts, as the intellectual faculties on one brain, the emotional faculties in the other brain and such like.

Before we examine this, it is necessary to look a little more closely into the conditions that appear to attend the phenomena of dream.

We pass instantly from the waking state into sleep. We cannot, by any effort, note the precise moment when the change takes place. But although so rapid, what a change is wrought! Think what it is. At this instant we are masters of our minds—we are conscious of external existence—we have the power of the Will and the mechanism of mind and body is obedient to command, our thoughts are orderly, we are rational beings. In a minute all these conditions are changed. We no longer command our minds—we are unconscious of the external world—the Will ceases to control the mechanism either of the mind or of the body—ideas come without call, usually in most admired disorder—we discover neither incongruity nor impossibility in them—we believe implicitly thoughts to be things and mental imaginations to be external realities. We have ceased to be rational beings. We are in very truth *insane*.

If this marvellous change were unfamiliar to us, with what wonder and awe it would be received and with what eagerness would Science devote itself to its examination, as being certain to reveal much of the mystery of the mechanism of man and the relationship of Mind and Matter.

But hitherto, because it happens to all of us daily, it has been almost a neglected source of Psychological knowledge. The exploration of this great field for investigation is a work within the proper province of the Psychological Society

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and in which it may do great services to the Science of Mind and Soul.

But in sleep the *Self* has ceased to control the body. That force (whatever it be) is suspended which in waking life enables us to distinguish between ideas and objects—between dreams and realities. What is this force that has thus suddenly ceased and by its ceasing has changed the whole character of our intelligent being? Why cannot we at this minute distinguish the shadow from the substance, the false from the true, the impossible from the possible, as we did but a minute ago?

What a curious problem is here presented to us! Although this wonderful fact has actually happened to every person in this room every day of his life, who among you has ever reflected upon its marvellousness or asked himself how such a miracle is caused?

So far as investigation has yet gone, we can trace but two distinct differences in the waking and the sleeping states. In *sleep*, the power of the Will is suspended. It has ceased to control either mental or bodily action and the brain is left to its own undirected energies. In *dream* some of the mental faculties are awake while others are asleep and hence it is that they are unable to exercise over each other that mutual check and correction, the common action of which in a healthy structure constitutes that complex whole, made up of many parts, to which is given the collective title of Mind.

The Senses are said to be locked up in sleep; but they are not so entirely. Some of them convey sensations imperfectly. Sounds are audible, touch is felt, the senses of smell and taste are not extinguished. Sight alone is wholly suspended. But we have lost the power of measuring the impressions made upon these slumbering senses. A slight sound often seems to the sleeper, whether

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it wakes him or only suggests a dream, as if it was the report of a cannon. A loud sound will as often seem to him as nothing more than a whisper. This fact, familiar to all of us, proves that the senses are not the rectifiers of the mental actions, as some psychologists have suggested. Hence it may be inferred that the principal agent in the direction of the human mechanism during waking life is not the senses, for they are only partially suspended in sleep,—nor the brain, for that is running riot in all the impossibilities and incongruities of dreams—but *something* which is neither the senses nor the brain, which is independent of either, and whose control alike of mind and body is suspended in the condition of sleep. The immediate agent of this *something* is the Will. But the Will is not an entity; it is only the expression of some entity. The Will is only the force which some entity directs to some intelligent object.

What then is the rational and scientific conclusion from these facts? Is it not that, if there be such an entity, that is neither brain nor body but sometimes controls both and sometimes is severed from both, a reasonable presumption arises that this entity is the *Conscious Self*, a thing distinct from the brain and the body, from which it is then severed more or less. The proposition is plain and simple. There is a *something* which is conscious of what the brain is doing in the wild work of dream; this something is that we recognise as the Conscious Self, the I—the you—the individual being, of which the sleeping structure is only the machine by means of which that being—call it *Soul*, if you please—maintains its communication with the material world in which the present stage of its existence is to be passed.

I hope I am not illogical or unscientific in advancing this as another proof of the being of a non-molecular

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entity as a part of the mechanism of man in opposition to the dark and debasing doctrine of *materialism*.

The subject is very large and cannot be treated in two papers, or within the limits of our ordinary discourses, and therefore I must return to it hereafter. But I purpose now to set before you some suggestions as to the effect upon dream of the action of the double brain.

The business of the two brains, like that of the two eyes, is to correct each other. With one eye we see little more than a flat surface. The mutual action of the two eyes enables us to perceive objects as we see what is a really flat surface in the spectroscope, but which, so seen, is presented in its proper proportions and true perspective. So it is with the two brains. Each supplements the other and the various mental faculties are thus made to co-operate. To take an instance or two. The mental faculty of comparison can only work by having before it the two ideas that are to be compared. But each brain can entertain but one idea at the same instant of time. The two brains supply the two ideas and thus enable the work of comparing to be done. Now comparison is the foundation of the process of reasoning, which is not one mental act, as is commonly believed, but a combination of mental actions. We reason by *comparing* two or more ideas and noting their differences and resemblances; then we compare them with a third idea in like manner, and see how they resemble or differ; and then we reason upon the result of this comparison, and say, "in such a particular A. resembles B., and, in the same particular, C. resembles B.; therefore, in this particular, A. and C. are alike or unlike." Starting from this simple act of comparison and deduction, we proceed step by step from what is known to learn the unknown. Hence it is that, as one brain alone cannot do the work of comparison, so one brain alone cannot reason.

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In fact we find in severe cases of hemiplegia affecting the whole or the greater part of *one* brain, or in cases of the destruction of one brain by disease or accident, the patient is unable to *compare* ideas and has consequently lost the power of correct reasoning, although the other mental faculties, that do not require double action, and especially the emotions, continue in vigour, the one sound brain sufficing to do the work for them.

Apply this state of things to sleep and *dream* and what phenomena should we look for? If one brain be sleeping while the other is awake, we should thus be in the exact position of a person one of whose brains had been paralysed, that is to say, we should have lost the power of comparison of ideas, and, therefore, of reasoning upon them.

Is not this precisely the condition of dream? The self-produced ideas that then throng the mind are accepted by us as being not self-produced but as being brought to us by the senses. Why do we accept them implicitly as realities? Because we are accustomed to rely upon our senses and are compelled to accept their intelligence as actualities. In waking life we try such impressions by comparison and reasoning and we thus discover if they are actual or ideal, possible or impossible. But when we dream it is as if one brain had been paralysed, although it is only asleep; and as the necessary consequence we are unable to compare those ideas and, therefore, we are unable to reason upon them and try their true value, as we are accustomed to do in waking life. Hence in dream our implicit belief that the shadows of the mind's creation are substances and ideas realities; hence in dream we have no sense of incongruity and no consciousness of the impossible. We believe implicitly that the self-produced pictures presented by the brain are brought by the senses from without and then the other mental faculties deal with them

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as if they were realities—that is to say, they weave them into narratives, treat them as events, and cause them to create the appropriate emotions—whether sentiments or passions. It is also to be noted that, unlike ideas, which are *imaginary*, the passions and emotions are *really felt* in dream, not imagined to be felt; another proof that all the mental faculties are not sleeping.

There is a condition nearly approaching to dream—intermediate between the active waking state and the active dreaming state, which may throw some light upon this matter, and help the inquiry so interesting to Psychology—what *dream* is? The condition to which I refer is that known as *Reverie*. In reverie we do not sleep and yet are not quite awake. The senses are not suspended, as in sleep, but they are at rest,—they take no active cognizance of external things. The attention of the mind in this condition is concentrated upon itself. We amuse ourselves with “building castles in the air,” that is to say, the fancy furnishes a series of pictures which the Conscious Self contemplates with pleasure and thus far it is the process of dreaming. But the mind-history invented in reverie, however improbable of realization, is rarely a manifest impossibility and never presents the absurd incongruities of a dream, nor is ever mistaken for reality. When reverie lapses into sleep and dream, although the physiological change is nothing more than the outflow of a small quantity of blood from the brain and the involuntary instead of the voluntary closing of the avenues of the senses, and is accomplished in one moment, the entire character of the self-created pictures is changed, and that which the instant before was orderly and rational, if not probable, becomes a mass of disorder and impossibility, and the consciousness of unreality changes into a confident belief that all is real.

THE
PSYCHOLOGY
OF
MEMORY.

READ AT THE MEETING OF THE

Psychological Society of Great Britain,

MAY 12, 1875,

BY

GEORGE HARRIS, LL.D., F.S.A.

THE PSYCHOLOGY OF MEMORY.

It would have been somewhat difficult to select any subject which requires more time, and thought, and care, satisfactorily to treat upon it, than that which has been chosen for our consideration this evening. A volume might well be devoted to it, and it would not unreasonably engross the entire attention of a philosophical society. It is, therefore, simply impossible to do justice to it in a short paper, or even to touch upon the leading points which require to be embraced in bringing the matter fairly before our view. All that I shall attempt to effect is to chalk out a chart of the subject generally, which may serve as a sort of rough guide in commencing its exploration. The outline that I shall present may be filled up by others who desire to follow up the matter in its various details.

The memory is probably of all the endowments of the mind the most frequently resorted to. And yet, as well remarked by a recent very able writer on psychology, the learned president of this society, "We are almost wholly without knowledge of what memory is."* According to that renowned writer, Hobbes, of Malmesbury the memory may be accounted a sixth sense.† And that distinguished professor, Dr. Thomas Brown, in one of his lectures on the

* "What am I?" by Mr. Serjeant Cox, vol. i. p. 248.

† "Human Nature," c. iii. s. 6.

Philosophy of the Mind, asserts that even conscience is but "a species of memory," which he defines to be "our moral memory—the memory of the heart."*

Be this as it may, the memory may be defined to be that particular endowment or power which the mind possesses, of retaining for a considerable and indefinite period, and of recalling to our remembrance in certain cases with correctness, distinctness, and force, the ideas of different subjects which have been at various times and in various modes impressed upon it.

The memory appears, moreover, to be endowed with two distinct and independent capacities or auxiliary powers, varying from one another both as regards their nature and operation: the first of them being passive, the other active. The first of these powers is ordinarily termed Retention; the second is ordinarily termed Recollection. This latter power is of two kinds, or consists of two subordinate powers or faculties: the power of recalling ideas, and the power of recognition.

Retention is the simple power of retaining in the mind, so that they may be recalled to remembrance without the recurrence of the original cause of their communication, and be ever ready for use, any ideas which have been once received. This power appears to be wholly passive and involuntary in its nature, and to exert no influence whatever of its own accord, either as to the ideas that it will retain, or as to the mode in which they shall be retained; which depend mainly on the manner in which they are communicated to, and impressed upon the memory.

The Retention is, as it were, the tablet of the mind, on which figures and characters of every variety may be drawn and preserved ready for use. Or it might be compared to a sheet of white paper on which the different ideas are in-

* Lecture XI.

scribed in inks of various colours and hues, according to the nature of those ideas, and on which the earliest impressions are usually the clearest and the most distinct ; those inscribed in dark colours being of subjects the most deeply impressed, and those of light hues the most likely to be effaced. The difference in colour would prevent ideas of different kinds being intermixed.

An interesting question here arises, in what respects and to what extent the memory is dependent on the body, or any of its organs, such as the brain, for its vivacity and vigour ; and which of its powers are so dependent ? That the memory is to a considerable extent thus influenced, appears to be beyond all doubt, from the fact that disease of the material frame, or its organs, will serve to obliterate all traces from the memory ; and that any temporary affection of the brain, such as that caused by fever, inebriety, or a blow on the head, will also have for the time a corresponding effect. We may also observe that when the body is out of order, the memory is weak and confused. It moreover fails in old age, when the material organs become enfeebled. Infants, too, are almost entirely devoid of memory. We none of us recollect anything of what occurred at the commencement of our existence, although the transactions which then took place were calculated to make the deepest impression on our minds.

The extraordinary manner in which events are sometimes recalled to the memory during dreaming, when we appear to see persons and places which we had long since forgotten, and which are presented to us in the most vivid and striking colours, is a peculiarly interesting topic connected with the Psychology of Memory ; and which well deserves to be treated of in a separate paper, as it is impossible to do more than to glance at it on the present occasion.

One important fact, however, which appears to me to be

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overlooked by many, ought here to be borne in mind, which is, that it is not *every* idea which the mind receives that is impressed on the memory; and that this is not effected unless the reception of it is accompanied by some reflection, or agitation, or vibration, which serves to fix it there. Thus, there are many ordinary occurrences constantly taking place around us, of which we have a knowledge, and yet from the ideas of them not striking forcibly on the mind, the memory does not retain them. Midst a multiplicity of daily occurrences, during which a multitude of sensations and ideas must have darted across the mind, those only which caused the vibration to which I have alluded are retained in the memory, and these in various degrees of strength, according to the extent of that vibration. For instance, during the last hour, of what a multiplicity of ideas of every kind has the mind of each of us taken cognizance. But not one-twentieth of these ideas are retained in the memory. It appears to me, indeed, that it is from the non-observance of the fact that so many ideas pass through the mind without attracting notice sufficient to excite a vibration which will indent or impress them on the memory, and that the memory frequently fails to record trivial occurrences even when these are operations of the mind, so that they are apparently performed without the consciousness of our having thus acted—and also from the amazing celerity of the action of the intellectual faculties—that the notion of the occurrence of what has been denominated “unconscious cerebration,”—by means of which it is supposed that the mind or the brain can perform intellectual operations without our being conscious of their having been effected—has originated;* but which amounts in reality to nothing more than ideas being received, or mental operations exerted, which have not been noticed at the time, and so not impressed upon or retained by the memory.

* Dr. Carpenter's “Mental Physiology,” p. 515.

According to LOCKE,* pleasure and pain contribute most to fix ideas in the memory; and Mr. SMEE† observes that, “as a general rule, the power of memory is proportionate to the intensity of the impression.”

If, however, we consider the amazing extent of knowledge of different kinds with which the memory of even the most illiterate person is stored,—of actions which have taken place from the early days of childhood, and of matters of various sorts,—we cannot but conclude the power of the Retention to be vast and comprehensive to an extraordinary degree. Indeed, the memory of every moderately well informed man contains probably a far greater and more varied store of information than is to be found in his whole library.

We have next to consider that power of the memory which is termed Recollection, which is of an active kind, and consists of the two capacities of recalling and recognition.

In the first place, it should be determined whether Recollection is of itself an independent power possessed by the memory exclusively, or whether it consists in the exertion of the active capacities of the mind on the passive power of the memory termed Retention, and which I infer to be the true theory of mind in this case.

In the able and learned treatise to which I have referred, termed “What am I?” it is laid down that “each faculty has its own memory, and that memory is usually proportioned to the capacity of the faculty. Thus the memory of words is in the faculty of *Language*; of facts, in *Individuality*; of figures, in *Number*; of music, in *Tune*.”‡ And Dr. MAUDSLEY in his masterly work on “the Physiology and Pathology of the Mind,” tells us that “there is memory in every nerve-cell, and indeed in every organic element of the body.”§

* “Essay on the Understanding,” pt. 2, c. 4, s. 3.

† “Instinct and Reason,” c. iv. p. 56.

‡ Vol. I., p. 248.

§ Page 209.

It is, however, at all events, through the agency of Recollection, whether this be a power belonging to the memory, or whether it be constituted by the action of the intellectual faculties, that the memory is able to recall ideas impressed upon it, and stored up in the Retention. The Recollective power is, as it were, the messenger of the mind, which employs it to search out and bring back to it those ideas which have wandered away. By its other power of Recognition the memory is able to inquire whether, and to determine that, the ideas so recalled have been previously received into the mind, and transmitted to and treasured up in the memory, and that they are not newly obtained through the senses.

It has often struck me, from an examination of different minds, that the extensive possession of, or deficiency in, any of our intellectual faculties, is frequently evinced by the character of the memory more clearly than in any other way; the efforts of the mind being thus, as it were, reflected by the manner in which the memory treats them. I will endeavour to illustrate my meaning by an anecdote. It is related in TWISS's "Life of Lord Eldon," that when he and his brother, Lord STOWELL, were boys, their father used to make them every Sunday evening give an account of the sermon they had heard. Lord ELDON went into minute details as regards some parts of the sermon. Lord STOWELL gave a comprehensive outline of the whole. In this case the memory served accurately to reflect the characters of the minds of the two youths; one of them being remarkable for the precise manner in which it retained the details of a subject; the other for the comprehensive view which it was enabled to take of it.

So also as regards the other faculties of the mind, the memory will be found to reflect those which are most active and powerful. In the case of a person of fine taste or vivid imagination, ideas of this character will be retained in his

memory, while those of an ordinary class will fail to be implanted there. A remarkable anecdote is told of Sir WALTER SCOTT, that after once reading through CAMPBELL'S "Pleasures of Hope," which made a deep impression on his mind from its being peculiarly congenial to his taste and feelings, he was able to repeat the whole of it from memory.

When we bear in mind the multifarious causes of different, and indeed opposite, kinds which severally contribute to influence the character of the memory, and of both its powers, we may fairly arrive at the conclusion that the varieties of memory are about as great as are the varieties in character of different persons. As there are a great many different kinds of substances which may be resorted to for receiving the impress of figures and letters, some of which retain them more distinctly, some more deeply, and some more durably than others; so, in a corresponding manner, may the power of Retention belonging to various memories differ. And the Recollection, which I have compared to a messenger, may also differ as regards its character in the memories of various persons; just as some messengers are more swift, some more painstaking, some more accurate than others.

I believe, however, that the memories of most persons are capable of effecting much more than even the possessors of them give them credit for; and that the more you rely upon the memory, the more it in return inspires you with the conviction that this confidence is not misplaced. I recollect hearing years ago of the marvellous power of memory exhibited by Lord LYNTHURST while delivering judgment in a very complicated case, in which he went through the minute details of the evidence without once having occasion to refer to the notes of the proceedings. I have myself had some experience of how much more the memory is able to accomplish than I should have supposed possible,

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when the necessity for this arises, from being called upon unexpectedly while acting as the judge of a County Court, to sum up a case to a jury, of which I had omitted to take notes; when I found that by relying entirely on my memory (which I am sorry to say is but a very indifferent specimen of its kind), I could recall without difficulty all the main points in the evidence of each witness, quite sufficiently for the purposes required.

The extent of control which we possess over the memory, both as regards the retention and the recalling of ideas, would form a very interesting, and a not unimportant subject of inquiry. A more curious, and perhaps more important question still, is the inquiry whether the mind possesses any direct, voluntary, and independent power of expulsion, or discharge of ideas that are no longer required, and have served their purpose, when they are no further needed, and their presence in the Retention would only occupy the space of more valuable matter. This discharge from the memory doubtless arises, though perhaps only indirectly, in the ordinary course of what is termed forgetfulness; which, however, consists rather in the omission to exercise the Recollection, than in any actual operation upon the Retention. But whether the mind possesses an actual and distinct voluntary power of discharging or expelling ideas from the Retention, other than by the course of their gradually fading from want of being recalled, is a question of considerable doubt and difficulty. On the whole, it appears to me, from observations which I have been able to effect, that not only has the memory an active voluntary power of recalling ideas; but that it can, to a limited extent at any rate, control the retention of them, and erase them altogether from its tablet. And that as it is able at its will to keep ideas in the mind ready for use, as also to recall them when required; so is it also able at once so far to discharge them from the

memory that all traces of them speedily fade. This is caused in part by a positive exertion of the will, and of the various capacities of the mind adapted for this purpose ; and in part by the neglect of the Recollection to recall these ideas for a long period, during which they become effaced from the Retention.

For instance, I will suppose that I am at present engaged in making preparations for a voyage to America. I have a number of things to keep in my memory ready for use relative to the exigencies for the journey. But as soon as it is undertaken, and I have no longer occasion to retain in my memory the ideas connected with those preparations, they are forthwith discharged from the memory entirely, and beyond the power of recall. And so it is with regard to many other corresponding everyday occurrences.

The mode in which the memory can be assisted by artificial aids, is another very interesting branch of inquiry, but upon which it is impossible to enter on the present occasion. I have only space to remark that most of what are very incorrectly termed aids to memory, are in reality contrivances to dispense with memory altogether, and to substitute some actual record of events in its place. All that can be done essentially and directly to aid the memory appears to be to associate with the ideas to be recollected those of some material objects, which are far more easy to recall than are ideas of abstract subjects ; and by, as it were, fastening the one to the other, keep them from wandering too far. Thus, to give a case in point, I found that I was much aided in recalling what the witnesses had said in the cause I was about to sum up, by recalling the ideas of their different persons and physiognomies, with which the evidence they had stated was closely associated.

The improvement of the memory by cultivation and exercise is another interesting and very important practical point, but which to do justice to it would require a separate

paper, and a separate evening, at the very least. Both the Retention and the Recollection are extensively improvable by this means. In proof of this, some remarkable instances might be afforded. Akin to this topic is that of defects and diseases of the memory—a wide and interesting subject—on which I could say much, but which it is impossible to dispose of in a few words.

Another branch of the subject, that of memory in animals, might suffice for a series of papers, and to occupy a succession of evenings at our society. I will not therefore attempt to do more than to glance at the leading principles applicable to this topic. That animals are fully endowed with Retention, appears unquestionable. Whether they have any voluntary power of Recollection, is doubtful. But it seems to me that occurrences are brought back to their memories rather by others of a similar nature, and closely associated with them, taking place, than by any voluntary effort. Whatever recollection they possess is consequently passive and involuntary. It is also doubtful whether all animals possess Memory, even Retention.

The observations which I have offered to you this evening, have been rather of a suggestive character than seeking to supply direct information; and I am not sure that in a society like our own this is not, on the whole, the most advantageous course to pursue. With such limited space and time at command, it is doubtless better to instigate research, than to attempt to convey knowledge. Much more that is really valuable may be effected by assiduously following up topics which have been started, than by any amount of actual information that papers of this kind are capable of affording.

THE
DUALITY
OF
THE MIND.

READ AT THE MEETING OF THE

Psychological Society of Great Britain,

MAY 12, 1875,

BY

MR. SERJEANT COX.

THE DUALITY OF THE MIND.

PHYSIOLOGISTS are agreed in holding the brain to be the material organ of the mind, but opinions differ whether the entire organ is employed in each mental operation, or if special parts of the brain are devoted to special mental functions.

Doctors GALL and SPURZHEIM first publicly maintained that the whole mind is not occupied in each mental act, and that its material organ, the brain, is not one homogeneous whole, but constructed of parts, each part having its own office corresponding to various mental faculties.

They asserted, also, that the brain is constructed of two distinct hemispheres; that all the organs of the mental faculties are also double; that as we have two eyes and ears so we have two organs of imagination, causality, hope, and so forth. Hence paralysis of one side of the brain does not extinguish the mental faculties on the other side of the brain; a condition wholly inconsistent with the theory that the whole mind and the entire brain are engaged in every mental act.

GALL's teachings were unmercifully ridiculed and abused by the Physiologists and Philosophers of his time. Orthodox Science will not tolerate scientific heresies. It cannot burn its heretics, but it can excommunicate them.

It is the old, old story of which the history of science is half made up. Dogmatic authority rejected evidence

upon *à priori* argument, and for a while prevailed. But the seed had been sown, which in good time was to grow to the rich harvest that our generation is girding itself to reap.

Thirty years ago Dr. ARTHUR LADBROOKE WIGAN, a Physician of considerable eminence, whose practice had given him an extensive acquaintance with cases of Insanity, had the moral courage boldly to reassert the doctrine GALL had taught and, in defiance of the hostility of his Profession and of the Metaphysicians, whose prejudices he directly defied, to proclaim the "the Duality of the Mind." Not merely did he adopt the doctrine that the brain is the organ of the mind; that the brain is a duplex organ; that the brain does not work as one whole for each mental operation but that distinct parts of the brain have distinct functions—but he advanced a step beyond GALL and asserted that the two hemispheres of the brain are not only two parts of one mind, as GALL had taught, but that they are two distinct and perfect organs as of two minds. Reflecting on this fact of the complete duplicity of the brain, he instituted a most patient investigation into the phenomena exhibited by brain action in its various phases, and especially in its abnormal conditions, and thus he was brought to the conclusion, that as the brain is so is the mind. He proved by anatomical examination that each brain hemisphere is a perfect brain—that we have in fact two brains, as we have two eyes and two ears, and he deduced from this the conclusion that as the brain is the organ of the Mind, and we have two brains, we have two Minds. Careful examination of the Phenomena of Mind satisfied him that so it was, and, with a moral courage that cannot be too highly commended, he published a volume entitled "The Duality of the Mind," in which he detailed the experiments and observations by which he had been conducted to the conclusion that as we have two brains so we have two Minds.

Dr. WIGAN found the same fate as Dr. GALL. The Scientists of *his* day excommunicated him. The abundant facts by which he supported his arguments, his experiences as a physician, were declared to be impostures or illusions, his deductions from them fallacies. They would not condescend to inquire if his asserted facts were true, because they *could* not be true—they were inconsistent with the established principles of Physiology and Mental Science. Had we not whole libraries of books by the highest authorities based upon the assumption that the mind is a metaphysical abstraction—a thing without parts, or shape, or substance, wholly incorporeal in essence and in association? Were these big books to be reduced to waste paper by a new quackery, and the authority of all the great M.D.'s destroyed by facts and phenomena noted by a little M.D.? Were the arguments of so many philosophers to be answered by reference to the sayings and doings of madmen and somnambulists? "For our own parts," said the Scientists of that day, as some of the Scientists of our own day say now, "We will not waste our time in looking at facts and phenomena, which cannot be accepted in opposition to established principles of science and known laws of nature, and which, therefore, even if we beheld we should not believe?"

So Dr. WIGAN was put down in his turn.

But truth is immortal. A *fact* may be suppressed; it cannot be killed. It will turn up again and again, and in the end it will prevail.

This fact of the *Duality of the brain* and consequently of the *Mind*, announced by GALL, proved by WIGAN, was long after confirmed partially by FERRIER, and now is proclaimed boldly, positively, and without reserve by BROWN-SEQUARD, hitherto held to be the foremost in his Science, but who, perhaps, will at once be deposed as labouring under "partial insanity," or having a natural

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prone to gullibility—the characteristics, according to some Scientists, of all who differ from themselves.

What is the teaching of these four famous Physiologists ?

As the object of this Society is to diffuse, as well as to acquire and accumulate, knowledge in relation to the *Life*, *Mind*, and *Soul* of Man, I will endeavour briefly to describe in popular language what they have discovered and asserted about the Duality of the Mind.

The brain (*cerebrum*) is composed of a mass of twisted folds (*convolutions*) closely gathered together within the skull and covered with a thick membrane, fastened to the skull at a central line from front to back. This membrane descends into the middle of the brain, dividing it into two equal parts, or *hemispheres*, as they have been improperly termed, and stretching down between the hemispheres to a band composed of an ashy white material (the *corpus callosum*), which links together the two sides of the brain—or, to speak more correctly, the two brains. Other small fibrous bands also extend from brain to brain.

The brain is constructed of a mass of extremely minute fibres. These fibres extend to the extremity of the hemisphere to which they belong, but do not pass beyond it into the other hemisphere ; thus affording further proof that each hemisphere is in itself a complete organ.

The membrane that divides the two hemispheres of the brain is called *the Falx*, because it resembles a sickle in shape, the point being towards the forehead. At the other end it meets a like membrane, running across the skull at right angles to it (*the Tentorium*). The use of these membranes is supposed to be to sustain the weight of the overlying mass when the head is reclined, so as to prevent pressure on the parts of the brain that lie beneath them.

From the base of each of these two brains a set of nerves descends. But these two sets of nerves do not pass into the side of the body to which the brain from which they spring

belongs. They cross each other and, entering the body on the opposite side, each permeates the half of the frame that does *not* belong to it. The nerve system flowing from the right brain supplies with nerve force the left side of the body and *vice versâ*. This is distinctly shown in paralysis and it has been demonstrated beyond further question by the experiments of Professor FERRIER.^(a)

Probably, few have formed the slightest conception of the true character of the fibrous structure of the brain. The number of fibres has been actually counted to the extent of a surface inch, shewing, says Dr. WIGAN, the inconceivable number of more than *three thousand millions to the square inch!*

From this outline of the structure of the brain, we learn that in fact we have two brains, distinct and entire, as we have two eyes and two ears. One brain can act when the other is impotent, as is proved by the partial loss of brain control in paralysis, when one hemisphere of the brain only is affected.

These two brains rest upon a bed of pulpy material which forms the point of union between them as also between the brain and the body. Upon this as a centre converge the nerves that pass from the brain to the body, conveying the commands of the will, and the nerves that carry to the mind the impressions made upon the senses by the external world. It is at this point that they are transmitted to the brain.

The precise function of this organ has not been positively

(a) Dr. Wigan says, "the object of this arrangement is at present incomprehensible" (p. 19). In a little treatise on *Heredity and Hybridism*, I have ventured to suggest that this is the contrivance by which the two germs of the two parents are united so as to form one structure. The suggestion of two germs will account also for two brains and two nerve systems, and for the duplex structure of the whole body, for all of which no reason whatever has hitherto been even surmised.

traced because, unlike the brain, it presents no surface on which observation or experiment can be made. It lies within the bone structure and cannot be reached without death to the patient. But, considering its position, its connection with both brains, with the entire nerve system and through that with the body, there can be no doubt that it is the organ by means of which the two brains are brought into harmonious action, and also that through which the *Psychic* or *Soul-Force*, directed by the WILL, is brought to bear upon the two mental organs above and the two nerve systems below. As the nerves of the senses also centre here, it is probably the medium through which the impressions made upon the senses are conveyed to the brain, and by the brain to the Conscious Self by whom they are received and stored away and become *memories*.

If this be so, the important conclusion follows, that here is the point at which the Conscious Self receives its information from the senses and conveys its commands to the body, and here also is the mechanism by which the unity of the individual self is reconciled with the duality of the mental machinery—a question to be considered hereafter.

Dr. WIGAN says of the material mechanism of the Mind :

The two hemispheres of the brain are really and in fact two distinct and entire organs, and each respectively as complete (indeed, more complete) and as fully perfect in all its parts, for the purposes it is intended to perform, as are the two eyes. It would be just as reasonable to talk of the two lobes or globes of the eye as of the two hemispheres of the brain. The decussation of the fibres in the *corpora pyramidalia* is not merely visible, but proved by innumerable consequences necessarily resulting from it, as Hemiplegia and Paralysis. Each set of fibres retains its separate functions in passing to the opposite side and the opposite columns of the spinal marrow. That some of the powers and functions may be combined in the *medulla oblongata* is no greater objection to the absolute completeness and individuality of each hemisphere of the brain, or evidence of their forming but one organ, than the fact of our seeing only one object

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with two eyes proves that the two eyes are not distinctly complete and separate organs, each capable of acting alone when its fellow is injured or destroyed."

The late Sir HENRY HOLLAND, I believe, also maintained the same doctrine of the duplicity of the brain, and the consequent Duality of the Mind.

BROWN-SEQUARD fully admits this to be the anatomical structure of the brain, and makes a practical application of it by asserting that, as the necessary consequence of such a brain structure, if brain be the mental organ, we have *two minds*. He accepts this conclusion without hesitation and proceeds to make practical application of it to education and other mental uses.

The Duality of the Mind being thus established as a fact it will be found of invaluable importance in psychological science, every branch of which it must modify more or less. It will solve a multitude of problems that hitherto have baffled the most sagacious of the mental and moral philosophers. It will throw light upon the sources of the earliest forms of life. It will revolutionize the Science of Mind; it will advance the Science of Soul. Nor is it of theoretical and scientific interest merely. It is of immense practical value in the processes of education, in the guidance of our own minds, in observation of the minds of others. It would be impossible to do anything like justice to so great a theme in one or in a dozen evenings. The fact itself deserves, and I hope will insure, discussion here. But the applications of it are so many that they must be themes for many future papers and many profoundly interesting debates in this Society. Illustrative facts are invited from all quarters as contributions to the store of information which we hope to gather relative to this question. It would be impossible for me in one paper to do more than open the inquiry and indicate what there is to be explored.

But first let me anticipate some difficulties that will probably occur to those who have heard of this suggestion but have given no thought to it. "Are we," they will say, "*conscious* that we have two minds?" Does any sensation inform us of a double mental action? Would not confusion result from two different ideas being presented by the two minds? What if they were to conflict? Are the two minds identical in structure? If not, how do they act in concert, for if they did not act in concert, what confusion of ideas and emotions would follow?"

The answer to these not unreasonable objections is that the two brains as organs of thought and feeling work together precisely in the same manner as do the two eyes and ears. In the normal condition of the organism the two eyes and two ears are so adjusted that the brain receives the impression of one object and communicates that impression to the Conscious Self. In fact, two objects are presented by the two eyes to the optic nerve, but at the point of junction of the two optic nerves at the base of the brain the two pictures presented on the two retinas fall into exact focus, and thus one picture (and not two pictures) is presented to the brain and thence to the Conscious Self. So the ears receive two sounds, but the brain only one sound. But if the two eyes be thrown out of focus by the slightest pressure, we are instantly conscious of their double action, for we perceive two pictures instead of one. If we close one eye the objects seen by the other eye appear in a different position, which is again changed if we close that eye and open the other, and then changed again when we open both. So it is with the double brain. When the two brains are acting together, the Conscious Self receives only one impression and as a rule they work in perfect accord. But in many abnormal conditions, as in reverie, in dream, in somnambulism, in trance, in insanity, the two brains do not act together. Like the two eyes when their action is

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disordered, the two brains convey incongruous and conflicting impressions to the Conscious Self, and it is from an examination of these that we shall learn the true characteristics of the *Dual Mind* and the manner of the action of its duplex structure.

Taking, then, for our standpoint the facts :

- (1) That we have two distinct and perfect brains united for common action, perhaps by the bands that pass between them, certainly by the common base upon which they rest.
- (2.) That the brain being the material organ by means of which the individual Conscious Self maintains its communication with the material world without and performs its functions in its present state of existence, such a double brain conducts to the inevitable conclusion that we have two minds, that act in perfect harmony in the normal condition of the organism, but which can and do act separately in many of its abnormal conditions and under special circumstances.

These conclusions of GALL, SPURZHEIM, WIGAN, Sir HENRY HOLLAND, and BROWN-SEQUARD being accepted as the *actual* form of our mental structure, there remains to us the important and interesting inquiry—

What are the consequences of such mental structure ?

To what extent are those anticipated results ascertained by observed mental phenomena ?

These questions will occupy the remainder of this paper and probably two or three more which I hope to have the honour to submit to the Society during the next Session; for they will certainly demand, and doubtless will receive, the most ample consideration and discussion by the members. My present purpose is to direct their thoughts into a channel probably new to most of them,

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but which, carried to their consequences, will work a revolution in Psychological and Mental Science. (a)

The first proposition to be submitted is :

1. That each of our two brains can and does work as one whole and complete Mind.

This follows as the necessary result of the brain structure. If the brain be the mental machine, and if that brain be double, and if each part of that double brain be a complete organ, there must be a double action of the mental machinery. But of that double action there is but one consciousness. How can this be.

The mechanism of the organ of vision shows us how it can be. We have two eyes. Two distinct pictures of the one object of sight are depicted upon those eyes. But we are conscious of one picture only. Why? Because the two branches of the optic nerve which carries the impressions upon the retina to the brain, to be there communicated to the Conscious Self, are so admirably adjusted that the two pictures painted upon the two retinas blend and present one picture to the recipient brain, as is proved by the stereoscope. The two brains are adjusted in like manner. By reason of their having a common centre at which all impressions are received from without, and to which all internal action is conveyed from within, and at which centre the Conscious Self exercises over the brain above and the nerves below the controlling power of the Will, the same

(a) I propose to follow very nearly the division of the subject adopted by Dr. A. Wigan, to whose admirable treatise I must express my obligation for some of the cases I shall have occasion to cite. But it is also fair to state that I had never seen his book until the present paper had been commenced. The conception of the Duality of the Mind suggested in the little treatise on "What am I?" was deduced entirely from the teaching of Dr. Gall that the brain is duplex. Brown-Sequard had not then affirmed the fact, which was vehemently denied by the Physiologists and Mental Philosophers who held themselves to be authorities.

action is set up by the same cause at the same instant in both brains—that is, in both minds. The common action is consequently presented to the Conscious Self (or Soul) as if it were one act, impression, or emotion. Only when something occurs to disturb that community of action is there any consciousness of the double process. Precisely as with the two eyes we discover their double image when by force or disease they are thrust out of focus, so the two brains are, in such cases of temporary or permanent disarrangement, unfocussed, as it were, and the Conscious Self consequently receives two impressions instead of one, as will be instanced in a subsequent part of this investigation.

A multitude of undisputed facts prove that one brain may be destroyed, or its action paralysed, and yet the other brain preserve its power and perform the mental functions. As already stated, this result may be witnessed in cases of paralysis. One half of the body has lost sensation by reason of disease in one brain only; the other side of the body continues in full possession of its powers of sensation and mental action, because the other brain is uninjured. Dr. WIGAN tells us of a boy who, climbing a tree, fell on a sharp edge of iron, which sliced off a large portion of the skull and brain on one side of his head, 4oz. of the brain being thus lost. His mental faculties remained uninjured until death from hæmorrhage many days afterwards. In another case, one hemisphere of the brain was wholly destroyed by disease, but the man conversed rationally. Dr. CONOLLY records the case of a man of family, one side of whose brain was found on examination to have been annihilated by an abscess, and in its place was “a yawning chasm.” His mental faculties were apparently quite perfect to the moment of death. Dr. JAMES JOHNSON reports another case of a man who preserved his mental faculties, although on a *post mortem* it was found that one hemisphere of the brain had been reduced to a thin membrane,

the whole solid contents of one-half of the cranium having absolutely disappeared. A similar case is recorded by CRUVEILHIER of complete atrophy of the left side of the brain without apparent injury to the intellectual powers, proving conclusively that the functions of mind were performed wholly by the right side of the brain.

These are but a few of a multitude of cases reported by medical observers, and they are adduced here merely as illustrations of the evidence upon which the great Physiologists named have based their contention that each brain is a complete machine, capable of performing alone the mechanism of mind.

But I must accompany this proposition with a slight reservation. Neither Dr. WIGAN, nor BROWN-SEQUARD, recognises the existence of distinct faculties as being located in distinct parts of the brain. Neither of them, therefore, appears to have studied the bearing of the dual mind upon the various mental operations, and the effect of the destruction of one brain upon the action of the other brain. It is, therefore, necessary to accept with caution their unreserved assertion that in all the cases noted by them the *entire* of the mental operations were unaffected. It is almost certain that with the two brains, as with the two eyes, the double action gives more completeness to the mental view. Vision with the two eyes conveys to the mind the sense of roundness in objects that is wanting in vision by one eye, the effect of which is shown in the stereoscope. It is probable that the double brain operates in the same manner. It is also more than probable that certain mental operations need the assistance of *both* brains, such as the process of reasoning, which is the work, not of one faculty only, but of many, and for its perfect accomplishment probably requires the co-operation of both minds. But this is a question that must hereafter be considered by the Society.

It is here referred to as a reservation from the too general assertion, that one brain can perform *all* the functions of mind perfectly though the other brain be destroyed. Dr. WIGAN, indeed, recognises the fact that the highest exertions of mind require the concentration upon them of the exertions of *both* brains, and he has noticed in all cases of extensive disease of one brain an "inability to exercise continuous study, or to learn by heart," although the one healthy brain may exercise the ordinary functions of mind.

It is, perhaps, necessary to prevent possible misconception by stating once for all, that when the terms "mind" and "brain" are here used, it is not in the sense in which they are used by the Materialists, who contend that the brain is the mind and deny the existence in Man of anything other than brain. The proposition I venture to advance is that the brain is the material mechanism by which the operations we call "mental" are conducted, and that "the *Mind*" is the name given to the sum of these operations viewed as a whole. But besides this material mechanism there is the *Conscious Self*, that takes cognizance of the conditions and actions of the brain, and controls them by that *Psychic* or *Soul Force* we call the Will.

Dr. WIGAN presents the argument in this conclusive form :—

One of two things must be: either each hemisphere is a perfect whole, capable of exercising all the functions which in the aggregate form the mind of the individual, or else each half must exercise some of those functions, and the other half the remainder, so as between them to make up a *mind*.

The exact resemblance of the two hemispheres of the brain at once negatives the supposition that they perform different offices. If the functions of mind were performed cumulatively by the two, it is clear that, on being destroyed, only portions of the mind would be annihilated, and not the whole mind.

The propositions sought to be maintained in this paper are :

1. That the brain is constructed of two hemispheres :
2. That the brain is the mechanism by which mental operations are conducted.
3. That one hemisphere of the brain may be injured or destroyed without seriously impairing the operations of the other hemisphere.
4. That in such cases the mental operations also proceed without serious impediment.
5. That therefore each hemisphere of the brain is a complete and perfect mental machine, capable of performing alone most of the mental operations.
6. That therefore we have *two minds*.
7. That this is proved abundantly by recorded cases of persons who have exercised the ordinary mental faculties when one brain has been destroyed.

The subject will be continued in future papers. In the meanwhile, the serious attention of Psychologists is invited to it, for it would be impossible to exaggerate its importance to our Science.

Psychological Society of Great Britain.

Sessional Address of the President (MR. SERJEANT COX), November 4th, 1875.

At the commencement of the Second Session of this Society, the Council have desired to observe the practice of many scientific associations in presenting to the members through the President a summary of the progress made during the Session past and the prospects and promises of the Session beginning. It is with peculiar pleasure that I do their bidding now, because I have little to report that will not be received with great satisfaction, by the members of our Society, as indeed by all who take an interest in the great and important Science for the advancement of which we are associated. The mere fact that this Society is alive and likely to live is a matter for hearty congratulation with Psychologists everywhere, for it was formed and is flourishing in despite of many confident prophecies of failure to find supporters, of impracticability in the subjects to be handled, and impossibility to obtain a hearing either from the scientific world or from the public outside, that were lavished upon the first publication of a design for the formation of a Society for the promotion of Psychology. These evil prophesyings would have sufficed to deter from exertion almost any but the earnest men who had united their energies in the full con-

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viction that Psychology is a science as real and substantial as Physiology or Biology; that it is not, as its opponents aver, a vague and visionary pursuit, dealing only with cobwebs of the brain, having no foundation in facts and not to be proved by observation and experiment. We had, all of us, the most confident conviction that Psychology is as solid and real a Science as are any of the Physical Sciences; that it is to be pursued by the same processes and with equal reliance upon the results of investigations into actual phenomena, instead of the metaphysical abstractions and the delusive study of the inner consciousness, by which its progress has been impeded hitherto. We had, also, a profound conviction that Psychology had been lately growing in the estimation of the public, who were beginning to perceive its important bearings upon the past, the present, and the future of the human race. The fact was patent to all who mingled with educated society that the uninquiring faith which had induced the almost universal acceptance of the existence and immortality of Soul as an indisputable truth was being widely disturbed by the doctrines of materialism, which professed to show by scientific evidence that this faith was not justified—that Soul was a dream or a dogma merely. There had long been plainly visible to all who looked behind the scenes of society a painful disturbance of mind that induced among the thoughtful an anxious desire to find some gleam of hope somewhere, some path that might conduct to a determination of the painful doubts that oppressed them. Psychology opened to them this prospect. Psychology recognises at least the possibility of some mechanism of Man other than the material structure, and it proposes for its mission to inquire if there be *in fact* any such non-corporeal being, and, if it be, what are its nature and characteristics? This is the cause of the vastly increased interest in this once neglected science that has shown itself

of late in so many forms. Psychology and its kindred subjects have been more and more made themes for discussion in the newspapers, indicating that they find many interested readers. Still more frequently is it made the topic of conversation in society. Books treating of it continue to come in fast increasing numbers from the press and find large circles of readers. In brief, there is every indication that the subject is becoming popular. As is the invariable practice when any topic of any kind, and especially any science, has reached the stage of popularity, Psychology has been eagerly seized upon by the herd of charlatans, cheats, and mountebanks who feed upon the brains of others and trade upon the weaknesses of credulity or fanaticism. The phenomena of Mind and Soul, invested as they are with a certain novelty and encompassed with something of mystery and strangeness, have been turned to purposes of profit by impudent impostors and misrepresented and magnified by unreflecting enthusiasts. In such a state of public opinion it was thought by the Promoters that a Society would be welcomed that should devote itself to the investigation of Psychology, with no other purpose than to ascertain, so far as may be, the very truth of it, without respect for any prejudice and with no fear of any consequences from discovery of the truth. We were, of course, not unprepared for hostility from two opposite quarters, from the Materialists, who are so firm in their own faith that they will not admit the possibility of any existence not material, and therefore deny to Psychology the dignity of a Science, and from zealots, who, admitting the existence of Soul, assert that it is the province of themselves alone to deal with it; that it must be received only as a faith and that to search after it as a *fact* is to abjure the faith. But neither of these adversaries has in practice proved so powerful as we had feared. The former have not ventured upon any open act of hostility, although whisperings and objections have not been wanting in private. The latter have shown

an unexpected reluctance to enter into a conflict, and not a few of those from whom we had looked for opposition have not merely spoken and written favourably of the Society, but have intimated an intention to join its ranks.

It was in such a condition of the public mind in relation to Psychology that this Society issued its prospectus. The result has far surpassed the anticipation of any of its promoters. From all parts of the country have come words of encouragement and promises of support. In a week success was assured. The first meeting will not readily be forgotten. The great room was crowded and many were unable to find a place. Opponents and friends were equally eager to learn what the Society proposed for the subjects of its inquiries and its methods of pursuing them. But whatever the motives that attracted the assembly, their coming showed this, at least, how great and widespread was the interest taken in the subjects of our labours. The inaugural address was designed to explain to the audience and to the public what was "the Province of Psychology," as understood by the Society, and which may be briefly expressed as being "the investigation of the Forces by which the Material Mechanism of Man is moved and directed—namely LIFE, MIND, and SOUL." The method by which it was proposed to pursue it, was to be this, precisely as other Sciences are pursued, by collection of *facts* and *phenomena*, and by discussions, written and oral, upon the conclusions reasonably to be drawn from those facts. It is thus that Physiology is investigated, and there is nothing in *Psychology* to except it from the principles and methods of study that applied to all other branches of Natural Science. The Sciences of Magnetism and Electricity are learned by observation of and experiment upon the action upon perceptible matter of forces that are themselves imperceptible. So we contend that Psychology must be learned by observation of and experiment with the perceptible *action* upon the material structure of the *Vital, Mental, and*

Psychic Forces which, like the forces of Magnetism and Electricity, are themselves imperceptible.

This programme of the practical scheme of the Society was widely circulated and extensively noticed by the press ; by some severely criticised, by many warmly eulogised, by others abused, according to the preconceptions of the several reviewers. The objections were, however, not so various as numerous. They resolved themselves into the following :

The first was that, raised at the meeting—to the rigid exclusion of Theological discussion and reference.

To discuss Soul, its being and its destiny, without reference to Theology is, it was contended, to exclude all that we can possibly know about it. One reviewer read to myself personally a very grave rebuke for having permitted this exclusion of authority. On the other hand, some sceptical writers were equally desirous that advantage should be taken of the Society for the promulgation of *anti-religious* opinion and argument. Thus, by two opposing parties, there was a desire to make Psychology a cloak for promulgating doctrinal views that are in direct antagonism. This fact alone is conclusive as to the prudence of our resolution. The very purpose of our being is to investigate *scientifically*, not *theologically*. We are working with express design to ascertain if there be any or what *proofs* to be found *in nature* of the existence of Soul, what Mind is, what Life is, and what relationship they bear to each other—not what *opinions* this or that sect, or men, or creed, or dogma, maintain about them. To permit theological reference would be to drown discussions of Psychological questions in disputes about theological *authority*. All men may be brought to agree about scientific *facts* and even differ without quarrelling about the inferences to be drawn from them ; but if Mr. Smith were permitted to quote a text as conclusive, Mr. Jones would dispute the authority of the text, or cite some other, and the evening would be occupied

in endless conflict, properly raised in a sectarian assembly, but utterly out of place in a scientific meeting. The rule is not ours only. It is common to *all* societies whose object is the pursuit of pure science. What, for instance, would become of the Geological Society if it were permitted to the speakers to cite theological authority? It would not exist for a month; and, if sanctioned here, the life of the Psychological Society would be equally stormy and equally brief.

So far from being in antagonism, Psychology will render to Theology invaluable service by proving the *faith* in Soul to be a *fact* and the teachings of authority to be truths in Nature.

Another objection proceeded from an opposite quarter and is entitled to more respect. An extensive and important class of mental and psychical phenomena (not yet *scientifically* investigated with a view to learn by careful experiment and conclusive tests what are their true nature and sources), have been made the basis of what may be termed a religion, on certain unproved assumptions as to the agencies by which they are produced. By the votaries of this sect our Society was assailed because it did not give to Spiritualism (which is the name assumed by this new faith) a prominent place in its programme. "You ignore," they said, "a series of phenomena directly associated with Psychology and strive to build up a science without the facts that most bear upon it."

Our answer is brief. "We do, and intend to do, nothing of the kind. We do not recognise your theory of *causes*; we cannot accept the assumption upon which you have erected your faith and taken your title. We do not venture without investigation to assert that you are wrong; but we hold that your assumption is as yet wholly unproved according to the reasonable requirements of scientific evidence. The asserted phenomena require to be examined by more crucial tests and more cautious experiment than have been

yet applied to them before their existence, and still more, their extent and nature, can be accepted as the basis upon which to found scientific conclusions. From their very nature, and from the conditions of their manifestation, they are peculiarly liable to be the subjects for imposture by knaves and delusion by dupes. Frauds are confessedly frequent and therefore nothing can be accepted as *proved* that is not obtained under tests that are *crucial* and by evidence that is *conclusive*. Ask us to apply such tests and offer to us such evidence, and the Society will gladly try the truth of any asserted phenomena without prejudice and report of them honestly. As yet you have shown to Science nothing more than that there is something that demands patient investigation. But your very name assumes a conclusion which a society for scientific research cannot recognise. The asserted facts and phenomena will, indeed, be entitled to and will receive a fair examination in common with all other facts and phenomena relating to Psychology, and, so far as they are found to be true, will be admitted to that store-house of facts which it is the primary purpose of all scientific societies to accumulate and without which no science can be securely constructed."

Although the Society began its labours only as the season was drawing to a close, its short session of two months was fruitful in performance and still more in promise. Papers were read on "Memory;" on "The Phenomena of Sleep and Dream;" and on "The Duality of the Mind;" and each elicited a lively and interesting discussion, in which many curious facts were narrated and much new light thrown upon the subjects of debate. Large miscellaneous audiences showed by their continued attendance and the attention paid to the speakers how extensive and profound was the interest taken by the public in the questions the Society is formed to examine; and the session closed amid general congratulations upon the success that had attended the past and with excellent auguries for the future.

Having thus briefly sketched what has been done, I will now submit to you what we propose to do.

As will be seen by those present, we have obtained a fit habitation in a convenient locality, most comfortably provided with all appliances for the conduct of our affairs, and with a room for meetings, the only fault of which is the fear that it may not be large enough to accommodate the numbers who, if the last Session be any test, may be expected to attend the meetings, and we should be very reluctant to restrict the present privilege for the admission of visitors.

We have already made gratifying additions to the list of members. Names of world-wide fame have been permitted to grace our roll of honorary members, and already many corresponding members have been volunteered in other countries.

How widely spread is the interest taken in the Society is proved by this: Lying before me are communications from France, from Germany, from New York, from San Francisco, and from Melbourne, expressing the utmost pleasure at the establishment of this Society, and either sending or promising communications of observed phenomena or papers to be read and debated.

The list of papers promised exhibits, not merely an attractive series of subjects, but the names of contributors known to fame, and when these are announced we may fairly anticipate the accession of many more, especially as it will then be apparent that there is no foundation for the report so industriously spread that we had other aims and purposes than those we had professed. It will be seen now that we are *Psychological* in the broadest sense of that term, inviting the cooperation of all sections of Psychologists, whatever their specific creeds, as the Geological Society embraces all classes and creeds of Geology who seek, or may be assumed to seek, the common object of ascertaining what is the very truth.

The Council have had under their consideration an application from many quarters to admit ladies as members. They have come to the conclusion that it is extremely desirable that ladies should attend the meetings of the Society, and the example of other scientific societies has encouraged them to the partial adoption of the proposal. Sufficient reasons were adduced why it would be inexpedient to admit ladies to full membership; but it has been resolved unanimously to issue Ladies' Admission Tickets at half the ordinary subscription (*viz.*, at *one guinea* for the year), which will admit them to all meetings of the Society save such as may be specially excepted and of which due notice will be given.

And now that I am on the subject of subscriptions, I may state that, seeing how small a portion of the present year remains, the Council has resolved that the subscription of all new members shall extend to the close of 1876, and to equalize this to the existing members by reducing their subscription for the next year by one half.

The Council have considered the practicability of providing tea for the members at each meeting, as is done at some other Societies. This, however, the funds of the Society will not permit at present; but should the number of members be largely increased, the plan will be adopted.

An arrangement has been made for procuring and printing reports of the proceedings of the Society, which will be issued periodically.

But there is one subject to which, before I close, I would earnestly invite the attention of the members and indeed of the public.

The basis of all true Science must be *facts*. Science, to be worthy of the name, cannot be spun out of ingenious brains by the mere process of thinking. Nor can it be founded upon a few isolated reports of phenomena. Medical Science has grown out of the collected reports of thousands of cases that have come under the observation of medical

men, and which have been by them reported and afterwards printed and preserved for reference. If Psychology is to make progress and to solve all or any of the mighty problems of Life, Mind, and Soul, it can only be by gathering together a multitude of facts, where they can be readily found by the philosopher and the student and whence they may be cited with some show of authority, to this extent at least, that they have not been accepted without precaution of inquiry into their sources. Already many interesting cases have been communicated to the Society and many more are promised. We invite them from all quarters, as well from those who are not members, as from our members. We stipulate only that they shall be vouched to us, by the person who sends them, as being trustworthy. Names are not required if there be an objection to their publication. As in Medical Reports, initials will suffice, provided that we receive a name and address from the communicant, whose voucher we may venture to accept. The proposed plan is to publish such cases, without note or comment, for common use as *facts* upon which scientific conclusions may be based hereafter, when a large store has been collected and ample material provided for judgment in this as in the other Sciences. In the same treasury of facts and phenomena will also be gathered gradually the many other reported psychological facts and phenomena that are scattered so profusely in medical and other publications, but which are now practically worthless because they cannot be found by the Psychologist when wanted for his researches. This *Psychological Record* will be commenced as soon as our funds permit and it will be issued from time to time as materials are provided. We shall thus be enabled to perform the first and most important of the uses of a scientific society, by inducing communication by observers of important facts which, without some such centre for intelligence, would have been allowed to pass unrecorded.

When opportunity occurs, or permission for investigation is offered, personal examination, under sufficient tests, will be given to any phenomena brought under the notice of the Society, with a view to ascertain the truth and fully and fairly report the result.

Especially do we ask the Medical Men, who have the most frequent and perfect opportunities for witnessing psychological phenomena, to assist our endeavours by transmitting cases that occur in their own practice; not with names, of course, but as they communicate their ordinary medical cases to the medical journals. We should accept such reports on their authority, withholding their own names, if so desired.

As the Society has now a settled habitation, where all communications may be made, information given, and its publications procured, it may not be out of place to suggest that we should begin at once to lay the foundation of a Psychological Library. Nothing of the kind exists at present in the United Kingdom and of its value and utility there cannot be two opinions. But the Society cannot afford to buy. Like all similar Societies, it must look to presentations of books from its Members and those who take an interest in its objects. While, however, a Society is yet in its infancy there is a reasonable objection with many persons to give to it works of value which, if it should not grow to maturity, may be sent to the book-stall. We propose to avoid this objection by asking for *the loan* only, and not the gift, of psychological works. Then, in case of adversity, they would revert to the persons who had presented them. A time, will, I hope, come to us when such loans might safely be converted into gifts to a Society established, and flourishing, and with a future before it.

Having thus briefly reviewed the past short existence of our Society and described the prospects of the Session now to be commenced, I will conclude with an appeal to the

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Members to show their zeal for the great enterprise in which they have embarked, not only by regular attendance at the meetings, by contributions of all psychological facts and phenomena that may come under their observation, by occasional papers, and by taking part in the discussions, but also by actively exerting themselves to make the objects and uses of their Society known to their friends and urging them to join it. Members are needed, not for influence only, but to provide the means for efficiently carrying out the objects for which the Society is established. This will be facilitated by the arrangement already stated as to the subscription to be paid by members now joining. I trust, at the close of the session, to be enabled to congratulate you upon still increasing prosperity. I now declare the Second Session of the Society's labours opened.

Psychological Society of Great Britain.

THURSDAY, DEC. 2, 1875.

SUBJECT OF DISCUSSION:

PROFESSOR TYNDALL'S *article on Materialism and its Opponents, in the "Fortnightly Review."*
Introductory Address of the President, MR. SERJEANT COX.

You have been invited to night to perform the most important duty of a Society formed for the scientific investigation of so much of the Mechanism of Man as relates to the forces by which that mechanism is moved and directed. Psychology as a science is based upon the assumption that Man is not wholly material—that he is something more than the molecular body. This assumption has been directly challenged by one of the very foremost of our Scientists, in a paper which has caused a great sensation in the world, and in which he answers the opponents of Materialism, which maintains that there is nothing but matter, or at least that nothing but matter is or can be known to us, and consequently that Soul or Spirit—call it which you will, or what you will—is only a dream, Mind

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but a function of matter, and thought but a secretion of a material structure.

As this Society exists to maintain the opposite doctrine—not, however, dogmatically, but as a *scientific fact*, to be proved, like all other scientific facts, by *evidence*—it would have been negligent of its duty had it not accepted the challenge which that paper practically offers to all who assert the being of a something other than the material structure. The Council having well weighed the manner of dealing with this doctrine of materialism, came to the conclusion that the proper course was to do so by public discussion, where all opinions could be frankly expressed, fairly heard and fully answered, and we are now assembled for that purpose.

But before we enter upon it permit me to request that the debate may be conducted without heat and without personality. We are investigating a question of the utmost moment to mankind—but we are doing so purely from the standpoint of Science. We permit of no theological argument for obvious reasons. We are a scientific Society. This cannot be too often or too strongly repeated. We approach this great question as students of science, prepared to meet those who differ from us in their scientific views for scientific reasons, not as opponents, but as persons whom we believe to be moved by the same desire to learn the very truth that we profess for ourselves—giving them credit for equal honesty of purpose, equal readiness to hear what is to be alleged on the other side, and equal fairness to receive all evidences, to examine all facts and phenomena, to deduce from them the reasonable conclusions to which they conduct, and to avow those conclusions whatever they may be, even if they should overthrow the most cherished former beliefs and convictions.

It is in this spirit that I hope this controversy will be
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conducted, acknowledging the consummate abilities of Professor TYNDALL, recognizing the great services he has done to Science, and giving to him the highest credit for the courage with which he has expressed unpopular opinions—conceding to him entirely honest intentions and a sincere desire to find the very truth.

I shall feel it to be my duty as Chairman at once to repress any expression of personal hostility or anything approaching to personality.

All, perhaps, have not read the article of Professor TYNDALL, and to those who have, it will be convenient to refresh the memory. I will therefore condense his argument as much and as fairly as I can, and so to keep the discussion to the real question at issue.

The article purposes to be a reply to those many persons, who, in so many places, adventured answers to that part of his great address at Belfast, in which he condensed the doctrine of Materialism into a short sentence, and avowed it to be his scientific creed. "I see in matter the promise and the potency of every form of life." The controversy in this paper is principally with Mr. MARTINEAU, whom he seems to have looked upon, if not as the most formidable of his opponents, as the one whose arguments were the most worthy of his attention.

I am bound to say that, upon a review of the argument on either side, Professor TYNDALL has the best of it. His Materialism has beaten Mr. MARTINEAU's Metaphysics. The Professor appeals to facts; the preacher to abstractions. The facts are with the Professor, so far as they go. It is *a fact* that our senses can perceive nothing but matter. We have no sensual knowledge of any existence but matter, and we can have none, if all our knowledge comes to us through the senses and we can communicate with the external world only through the material mechanism of the body.

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Professor TYNDALL contends that inasmuch as we can obtain no positive knowledge of anything but matter, we have no right to assume the existence of anything but matter. Arrived at this point, there remains for him only the triumphant task of showing that matter is for ever changing its form but not its being, and that in all its changing forms it exhibits new phases of existence. He asserts the indisputable fact that the body is made of matter, as are all other things in the world,—that it decays, falls to pieces, and is resolved into its elements—that Mind is dependent on the condition of that material body, is feeble or strong with it, is affected by all its changes, grows with it and ceases with it.

Against these indisputable facts Mr. MARTINEAU adduces only hopes, desires, aspirations, his inner consciousness, the faith all men have in themselves that they are not their bodies, and that mind is not a function of matter.

But this is answering scientific facts with appeals to mental impressions. The arguments of Mr. MARTINEAU go no further than to raise a presumption that matter is not everything. He fails, as all metaphysicians have failed before him, and ever must fail. He does not meet fact with fact and answer the scientific conclusions of the Physicists with the scientific conclusions of the Psychologists. So long as by this metaphysical form of fighting alone the battle of Soul is maintained, so long will the Materialists enjoy an easy victory. They have but to point to their scientific *facts* and challenge the Metaphysicians to fight them with the weapons of argument *à priori*, and their triumph is secure.

It would be impossible in the time allowed to us to go further into the details of the controversy that is to be the theme of this discussion. I have in very few words stated the sum of the contention on either side, and now I will as briefly indicate the course which this Society, formed to promote *Scientific Psychology*, should adopt in dealing with

this great question of Materialism, of such overwhelming interest to every human being.

That course will probably be a startling one at the first sight.

We admit that it is a question of *fact* to be determined according to the rules of scientific investigation.

We admit frankly and fearlessly all the facts upon which Professor TYNDALL bases his doctrine of Materialism.

That is to say, we admit that the substance of the body, however highly organised, is material; which means, composed of molecules—the only combination of atoms the human senses are constructed to perceive.

That the brain and the nerve system is the material mechanism through which the operations to which we have given the collective name of Mind are performed.

The Mind is dependent for its power of expression upon the material mechanism of the brain, insomuch that it is less or greater in precise proportion to the quality and quantity of that mechanism—grows with it, fades with it, is extinguished when it is diseased or dies.

Admitting, then, all the facts and arguments of Professor TYNDALL, we nevertheless contend that his conclusion is erroneous. Maintaining this, we start from the point at which his inquiry ceases.

He says in effect: "Here I can go no further; I can perceive nothing but this matter. I have no means of knowledge if there be anything outside of this matter. I am on solid ground so far. I object to advance into a region at once unknown, unknowable, and even unthinkable."

Professor TYNDALL's argument rests upon assumptions which we emphatically dispute.

First, he assumes that what we call "matter" is the only form of being.

Second, he asserts that if there be any other form of being it is imperceptible to us, therefore unknown and

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unknowable, and therefore out of the circle of *knowledge*—an imagination merely—incapable of exploration, and that time and thought bestowed upon it are merely wasted.

Third—that all we see and know of ourselves is material—that is to say, we are made of matter and obey the laws of matter, we are formed of matter and as matter we are dissolved and dissipated and disappear and are seen and known no more.

We distinctly challenge these conclusions. I can but very briefly state the outlines of the argument by which we do so—to be a sort of guide in the discussion that is to follow—hoping that they who take part in the debate will enlarge upon the various points thus indicated.

First, we dispute the meaning of the term "*matter*." We say that what we call matter is only one form of atomic structure—namely, the molecular form—which our senses are constructed to perceive. We say, not only that there may be, but that it is almost certain that there are, a vast variety of other combinations of atoms, which our senses are incompetent to perceive, and therefore of whose existence they can give us no knowledge, even though they may be thronging everywhere about us. It may well be that other beings are formed like ourselves to perceive only some one other combination of atoms, as we perceive molecular existence only, and to them we should be as imperceptible as they are to us. We know how small a portion of the Universe is perceptible to us. There is ample space within its range for a multitude of beings made of some other atomic combination than molecules. What right have we to assume that the infinitely small portion of existence our limited senses can perceive is all that exists—even immediately about us.

But he contends that if there be other forms of being they are imperceptible and therefore unknowable.

We say, that it is possible to obtain a knowledge of

things that are imperceptible—that we do so by observing the effects of their presence on perceptible matter. It is thus that you, Professor TYNDALL, obtain your knowledge of Electricity and Magnetism and the other imperceptible and imponderable forces. So we contend that we can attain to a knowledge of the existence of other forms of being imperceptible to our senses by observing the operations of that being upon the material—that is the molecular—structure our senses can perceive.

We conclude, therefore, that your argument *à priori* is not conclusive. We deny that such being cannot be, and we deny, also, that even if it is, its existence and its qualities cannot be proved. We say that they *not* unknowable.

If we are right in this argumentative answer, it becomes simply a question of FACT—is there any, and what evidence, as a matter of *scientific fact*, not dogma or conjecture, that there are psychical phenomena from which the conclusion may be reasonably deduced that there is some other than molecular being—some other intelligence than the material structure of the brain?

We assert with the most entire confidence that there is cogent, if not conclusive, evidence of such existence—I mean *scientific* evidence of it as a *scientific fact*—and we challenge Professor TYNDALL and the Materialists to examine these proofs and refute or explain them, if they can.

The first fact is *ourselves*—Consciousness. Is this a conceivable property of molecules or of any combination of molecules? A stone is made of the same molecules that make the Man. It is not pretended that a stone has consciousness—its molecules have no consciousness nor intelligence in that form. Why should consciousness be a property of those same molecules when reconstructed in another form and called brain? But consciousness implies something that is conscious of something else, not of itself.

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You are conscious of your body and brain. How can "you" be that body and brain? The Materialists have never yet got over this first difficulty.

Then thought—imagination—emotion—reason—according to the Materialists are the products of matter—secretions of the molecular combination! More impossible surely than the existence of Spirit or Soul!

All men are conscious of *individuality*—of "Self" as distinct from the machinery of the body.

These are argumentative presumptions only, but we assert there are *facts* and *phenomena* that admit of no other conclusion than the existence of some intelligence in the body that is not the body. It would take a volume to describe them—I can only suggest a few of them—the phenomena of dream, of somnambulism, of trance, of psychism, prove to demonstration that there is something in the body that can perceive and act without the aid of the material senses and far beyond their range of action; that being is manifestly something other than the body, something not molecular, constructed of some other combination of atoms,—that is the thing, whatever it be, we call SOUL—and this is the thing whose existence Psychology therefore affirms, and whose nature and qualities it is the province of Psychology to investigate.

What that Soul is, its capacities, and its destinies, are other questions for future discussion. Our present contention with the Materialists is only *that it is*.

The work of the *Psychological Society* will be to collect from all sources past and present the best authenticated facts and phenomena upon which it may hope to construct a Science as certainly and securely based as are any of the Physical Sciences.

CALIGRAPHY CONSIDERED
AS AFFORDING AN
EXHIBITION OF CHARACTER.

READ AT THE MEETING OF THE
Psychological Society of Great Britain,

NOVEMBER 26TH, 1875,

BY

GEORGE HARRIS, LL.D., F.S.A.

CALIGRAPHY CONSIDERED

AS AFFORDING

AN EXHIBITION OF CHARACTER.

AMONG the various modes in which, in the case of each person, an exhibition of his character, intellectual, moral, and physical, is afforded—some displaying it by a peculiarity in manner, others by the tone of the voice, others by their walk—there is none more remarkable than the way in which the handwriting of every human being serves to effect this purpose, alike with distinctness, force, and individuality.

Of the thousands of writings that come under our notice, no two are exactly alike, and very few even resemble each other ; while there is at the same time a distinct peculiarity appertaining to each. Precisely correspondent with this diversity and peculiarity in handwriting, is the diversity and peculiarity in the character of different persons ; no two characters are the same, but few bear close similarity to one another, and each has its distinct individual type.

The origin of this diversity and peculiarity of character is in the mind. The mind acts on the body and its various organs ; and their operations under its guidance serve to re-

flect or shadow forth the character of the active agent by which they are impelled. To the control of the mind are subjugated all the voluntary operations of the body, more especially of such of the material organs as serve for carrying out the purposes of the soul. Thus, the mind is the director of the voice in speaking and in singing, and of the hand, both in writing and in painting. Consequently, the character of the impress made by these material organs reflects, as it were, with more or less clearness, according to circumstances, the individual character of the particular soul which impelled them, and by whom they are in each case directed and disciplined. Hence, what is ordinarily regarded as the education of any particular material organ—as when the hand is trained to paint, or to write, or to play upon an instrument—is, in reality, simply, essentially, and solely, nothing more than the complete subjection and discipline of the bodily organ to the impulses of the soul. This is further evinced by the fact that the left hand, which is not so disciplined (although it fully admits of this application), is not able to perform the same achievements, whatever may be the cultivation which the mind has received. Hence the character of each person is accurately, forcibly, and unerringly evinced by the peculiar features displayed by his handwriting, the hand being guided by the nerves, which receive through the brain a direct impulse from the very soul itself. In the structure and style of the letters, the various qualities of the mind are, as it were, shadowed and reflected, according as they direct and influence the peculiar form of each of them; although the finer the texture of the material organs, the more accurate will be the mode in which they obey the intellectual impulses, which will therefore be in each case more or less modified by this circumstance. They will also be more or less affected by the bodily temperament of the individual frame. These

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two facts require therefore to be borne in mind, in conjunction with the result produced by the influence of the intellect through the nerves and hand in the formation of the writing; although the mind itself is, after all, the leading and directing impulse, the mainspring from which the movement originates.

As a whole, it appears to me that the various agencies operating in the formation of the writing, serve well to illustrate how complex are the operations of the various powers, and energies, and impulses, in our constitution; and how many influences are simultaneously exerted in each case, which, although apparently counteracting each other, all at last become united, and result in one grand central effort and movement. Indeed, as already hinted, not only the handwriting, but every single motion and action in the gait and habit and manner of the individual, and even the very tones of his voice, more or less betoken his character and disposition, physical, moral and intellectual; whether this be caused by a peculiarity in his material texture or temperament, or by something existing in the very soul itself, as regards its qualities, or possibly its very essence.

Dress also serves pretty exactly in many cases to indicate the character of a person, in a manner corresponding with that of caligraphy, by its peculiarity in accordance with the taste and turn of mind of the individual adopting it. So national character is indicated by national costume. Shape, and colour, and variety, are the principal features here displayed. Some illustration of the mode in which national character is reflected by national handwriting, is afforded by the Chinese manuscript in the case on the table.

In the instance of handwriting, we may consider the copperplate letters—such as we were set to copy from when children—as the model form of the original writing, each

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deviation from which in whatever direction, is caused by some peculiar impetus originating in the mind, and acting on the nerves, and through them on the hand of the individual. Those handwritings where this influence prevails the least, as in that of law writers and copying clerks, who are ordinarily persons of but little mental cultivation, and not very susceptible minds, follow pretty regularly the original copperplate type. This is also very much the case with children. In the case of either, as the hand becomes freer, and they deviate from the primitive type, the individual peculiarity and characteristic of each handwriting begins to display itself, and goes on increasing until it has acquired a fixed individual character, which it continues to retain through life. Thus, any nervous excitement in the system will produce irregularity in the handwriting, except, as when in the case of the persons of both classes to whom I have alluded, they are restrained from diverting from the model copy; in which case of course the type is not their own, but they are confined to the imitation of that set before them. In the case of ordinary persons, however, who are free to express this peculiarity in their constitution, the character of the handwriting will vary according to the character and feelings of the writer. The taste will moreover exercise considerable influence on the handwriting of each person; while the mental habits and operations must necessarily have an important bias here. The particular occupation of the individual will also affect the formation, but not the actual character, of his caligraphy. Boldness, steadiness, energy, decision, caution, firmness, openness, and the opposites of these qualities, are especially exhibited by it.

Certain men write in an effeminate hand, which generally, if not always, indicates an effeminate mind. On the other hand, when women, as occasionally happens,
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write in a masculine hand, this betokens their character in this respect. I have known, however, several exceptions to this rule, which might be accounted for by other traits in their character. Although various and complicated influences unite in the formation of the character of the handwriting of each person; yet, on the whole, the moral disposition, rather than mental endowments or physical qualities, appear to be mainly indicated by it. Not improbably, indeed, qualities, arising from our physical constitution, such as temper, pride, appetite, courage, emotion, and passion, are principally evinced by the peculiarity of manner; moral qualifications and character, by the peculiarity of the handwriting; and mental endowment and capacity, by the peculiarity of style in speaking and writing. Each of these performances is, however, more or less influenced by character of each kind.

It seems to me that of the various characteristics forcibly exhibited by handwriting, that of steadiness or unchangeableness of character, and its opposite, fickleness, are the most so. Some persons are always the same, and never appear to vary from day to day. Others are always changing, and do not seem like the same persons for two days, or perhaps two hours together. In the case of such persons I have observed that the handwriting closely corresponds with the character. In certain handwritings I have not been able to detect the slightest variation. The handwritings of other persons seem never to be on two occasions alike, and on opening the letter you fail to recognise the writing, although it is one to which you are well accustomed. Another character which I think the handwriting will often serve to display, is that of duplicity. I mean the case of a person acting in an assumed character, and pretending to be that which he is not. How often do we find a feigned manner resorted to

to conceal a false heart. So is it also in the case of caligraphy. A disguised hand is not difficult to detect. Here and there the real hand will unawares display itself, as the real character will suddenly come out when the wearer of the false one is off his guard. The fable of the cat, whom Jupiter in a frolicsome fit changed into the form of a young lady, and who sprang out of bed the moment that a mouse was astir, is a good illustration of the truth of what I have been saying.

Occasional absence of mind is another quality which appears to be directly and plainly indicated by caligraphy.

When the writing, although of a grown-up person, deviates but little from the copper plate form, and assumes no peculiar type of its own, this may be taken as an indication that the individual is deficient in force of character, and possesses no marked or peculiar features in this respect. It betokens, too, a want of energy. But a bold hand by no means indicates a bold person. And the character of the writing of great generals—as we shall presently see in the case of those of NAPOLEON and WELLINGTON—often widely differs. Plain writing is by no means always indicative of a plain straightforward character; nor is an obscure hand a proof of the reverse. Sometimes, indeed, the character of the handwriting seems to be the opposite of that of the writer. That great orator and genius, Lord BOLINGBROKE, wrote in a peculiarly formal, cramped, and pedantic hand, square small letters, squeezed together as though by some process of machinery, very unlike what we should expect from the intellectual character and acts of the man. But, as I said before, I believe that moral rather than intellectual character is what handwriting displays, and in this respect BOLINGBROKE's writing was highly indicative of the intriguing, insidious, double-dealing conduct of the man. In this case, the handwriting,

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like the character, was evidently assumed. I wish I had the autographs of TALLEYRAND and of RICHELIEU to submit to your scrutiny on this point. But perhaps that of the great NAPOLEON may suffice, who was, I believe, a more complete, adroit, and successful dissembler than both of them together.

Some handwritings are remarkable for the regularity with which the letters are formed. Others for the reverse of this. Some writers are very particular in crossing the "t's" and dotting the "i's," while others as regularly leave this duty unperformed. Some are noticeable for the plain simple way in which they shape their letters; others for the abundant display of flourishes with which they liberally adorn them. All these peculiarities indicate a corresponding peculiarity in the character of the writer; but in cases of this sort we must be careful to bear in mind that in different persons very different circumstances may conduce to the same result. Dean SWIFT, when describing in "Gulliver's Travels" an epistle from a Brobdingnag lady, says that they write from corner to corner, "after the fashion of ladies in England." This custom has, I believe, in our own country, whatever may be the present mode in Brobdingnag, gone out of fashion, although, perhaps, to give place to a worse, that of crossing the letters as well as—perhaps I might say, instead of—the "t's;" the effect of which I fear is often to make the reader cross as well.

In order to judge with any degree of accuracy or certainty of the character of a person by caligraphy, we ought to have not merely a single signature or a single letter, but a number of letters written at different times and under different circumstances, to compare one with another. On the other hand, each word—perhaps each letter—contains more or less of character in itself, and is more or less indicative of the qualities of the writer; like a single

bone in an animal frame, from which naturalists are able at once to determine the genus of the species to which it belongs.

In a brief paper of this description, it is necessarily impossible to lay down any particular directions for deciding on character by caligraphy—which would require a volume (and a pretty big one) satisfactorily and safely to effect. The most, indeed, that I can hope to accomplish this evening, is to demonstrate at least the possibility of caligraphy being applied to serve for this purpose at all. Indeed, to pretend to attempt to teach the art practically in one short address, would be little short of imposture.

Not only do the handwritings of different persons differ extensively from each other, but those of the people of different nations do so also; and in the case of each there is a marked, peculiar, and individual feature—indicative of some corresponding national character.

In the good old times, some five hundred years ago, the greatest people, such as emperors and kings, were seldom able to write, and only made their mark, as uneducated people do now. It is recorded of the Emperor CHARLEMAGNE that he was so anxious to learn to write, that he always carried a bottle of ink and a pen about with him to practise with when he had a moment's leisure, which was not often the case; and so at last he only got so far as to be able to write, or rather scrawl, his own signature, which was probably not unlike what COBBETT said of that of a worthy alderman of the city of London, "the mark made by a mad spider dipped in ink, and dropped on the paper!"

King RICHARD III., of not very fragrant memory, appears to have been a little more successful, and perhaps gave more attention to the subject; though, if history records truly, he must have had plenty on his hands. An enlarged facsimile of his signature when Duke of Gloucester is

before you. The hand appears somewhat crooked and cramped, corresponding with what we are told was the material form of the man; yet on the whole the letters are regular, and the writing is plain and straightforward, regard being had to the style of caligraphy at the time. But without knowing what was the model, form, or character of writing of that period, it is impossible to analyse the character of any particular hand. Singular it is that the autograph in question is inscribed in a book containing drawings of instruments of torture of every variety, preserved in the British Museum.

In the autograph of the great NAPOLEON, the first emperor, in his signature to an order, we fail to detect any marked character in the man. And perhaps the leading feature in NAPOLEON himself was the concealment of his own character. There was indeed in his case such an opposition of qualities, such a contradiction of attributes, that it is not more difficult to determine what peculiar character the handwriting indicates, than that which was indicated by his whole career. Both alike are a mystery and a mixture; a rare combination indeed of generosity and meanness, of nobleness and littleness, of honour and baseness, of humanity and cruelty, of pride and humility, of kindness and harshness.

The DUKE OF WELLINGTON's, as you will see, is free, and apparently frank. He varied but very little in the character of the writing in his different letters, corresponding with the steady, consistent, unvarying character of the man.

The handwriting of Lord NELSON, of which I possess only the autograph signature, is free and bold, frank and fearless,—so far characteristic of the man. There is a certain degree of care and regularity in the entire structure of the words, with a certain degree of minor irregularity in

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the details of the letters. The character appears to be a mixed one,—great qualities and great failings, eminent virtues and unfortunate weaknesses, conjoined together.

One of the most remarkable handwritings as indicative of character is that of Lord BROUGHAM. His caligraphy is very obscure, very irregular, very loose, very changeable, hardly two words alike ; now and then, but not often, a “t” gets a cross, but the “i’s” do not come off so well. The eccentric, uncertain, irregular, erratic career of this wonderful man, versatile genius, and great benefactor to our race, whose name ought always to be held in veneration for the many grand measures with which it will ever be inseparably associated, is surely not inaccurately reflected by his handwriting.

Compare with that of Lord BROUGHAM the handwriting of one of his contemporaries, Lord St. LEONARDS,—who was also a Lord Chancellor, a very able lawyer, and a very estimable man, but in all respects a great contrast, the very opposite, I might say, to Lord BROUGHAM ; and their handwritings were as unlike as possible. The writing of Lord St. LEONARD’S is clear, regular, precise, never varying in character ; it is a round, running, business-like hand, well suited for drawing law documents, but not at all such as one would expect to see employed in scribbling hurried dissertations on philosophical or political topics.

Let us turn to another character, of a very different stamp to those of the two last mentioned,—that of the poet COWPER. His hand is round and regular, his “i’s” are all dotted, but most of his “t’s” are uncrossed. The general style of the hand is not unlike that of a copying clerk, to which his official employment may have conduced ; but there is quite enough of character infused into it, to render it an essential deviation from the mere mechanical type.

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SHERIDAN wrote a running, dashing, irregular hand, certainly very unlike COWPER's, but very much like the character of SHERIDAN, as you will see from the two specimens before you of his caligraphy. There are no two words, hardly two letters, formed alike. No disguise is discernible in the handwriting; and I think that everybody will so far do him justice as to say that there was none in the man!

HORNE TOOKE's was a very different hand to SHERIDAN's, a round clerk-like hand, but with sufficient character in it to cause it to diverge from the copper plate type. The letters are irregular, as is also the punctuation.

CANNING's was a bold, free, running hand. The specimen of it produced is a note taken by him during a debate.

LORD ERSKINE's was a free small hand, not appearing to display much character. ADDISON's, on the contrary, appears full of marked character. It is a small round hand, each letter, as you will see, exhibiting a special feature in the formation, full of individual peculiarity, and without disguise.

COBBETT's was an irregular small hand, varying much in the different words, plain and simple, free from flourishes and high finish; very like COBBETT himself.

I shall conclude by calling your attention to two autographs of men, both remarkable in their way, both writers of fiction, and perhaps most remarkable of all in the contrast of their characters, and correspondingly in the contrast of their handwriting. I allude to the late Lord LYTTON and CHARLES DICKENS.

The writing of Lord LYTTON is that of a man of refinement, and of one used to much and hasty composition. The character appears uncertain, and there is a degree of wildness and irregularity in the style, not unsuitable to a writer of

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romance. In CHARLES DICKENS's hand there is none of the refinement evinced by Lord LYTTON's. It is more the hand of a man of middle rank. The writing is free and clear, with a certain degree of carelessness in the construction of the letters. The words vary extensively, but the variation is singularly uniform. Frankness and sincerity are prominent traits in his caligraphy.

In the remarks which I have made, and in the specimens of caligraphy which I have exhibited before you, I have endeavoured as far as practical, in the very short space allowed, to enunciate some general principles which may serve as a guide in the discernment of character by this means. As I said before, it appears to me that moral rather than intellectual character is that which is generally indicated; although some traits in the writing undoubtedly serve to display also the mental endowments and habits. The study is a difficult one as regards obtaining skill on which you can safely rely. And it is undoubtedly a very dangerous one on which to rely, when you have not sufficient data whereon to proceed. The disguises by which we are liable to be misled are many and deep laid; and the greater the need of disguise, the more artful and insidious will probably be the disguises. How often is a dishonest character concealed under an apparently frank, and, perhaps, blustering manner; as a bold handwriting may be thought to indicate openness, and straight forward dealing, in the writer. Some characters are natural, and appear as they really are; others are assumed, and appear, not as they are, but as they wish to be thought. So it is with their caligraphy also. Some persons appear always in feigned characters, others are always real. In most cases I suspect that the character is mixed, part feigned and part real. Correspondent with this is their caligraphy also. NAPOLEON, and TALLEYRAND, and BOLINGBROKE, were far more feigned

than real. WELLINGTON, BROUGHAM, and NELSON, were far more real than feigned. There was but very little which was not genuine about them. The force of circumstances may in every case cause a slight adulteration of the spurious with the real.

All persons are more or less physiognomists, and judges of character by countenance and manner. And there is no reason, if due attention and care were bestowed on the subject, why they should not be able to decide upon character by caligraphy also. I even venture to assert that the art may be carried so far that a person well experienced and practically skilled in it, may be able to say not only, "show me the handwriting of such a person, and I will tell you his character;" but further than this, he may also say, "tell me his character, and I will show you what style of writing he uses." Be this as it may, the pursuit is an interesting and an attractive one, and is intimately connected with the science of Psychology. It is one also which each person has the opportunity of following up. As the study of man is that which is most proper for mankind, so a discernment of character is the richest fruit which that study can produce.

MATTER AND SPIRIT.

(*Read by MR. SERJEANT COX, the President,*
January 20th, 1876.)

THE very interesting discussion on Materialism, and some incidental remarks of the speakers who have taken part in other debates, have conspicuously shown that the terms "matter" and "spirit" do not carry with them to most minds definite and distinct conceptions of *the things* intended to be thereby expressed. It is apparent also that there prevails a very wide divergence of view even upon so much as is conceived of them. The very word "Materialism," as used in the debated paper by its distinguished author, had been manifestly read in almost as many senses as there were speakers, insomuch that some saw in it a recognition by Professor TYNDALL of the existence of *Soul*, while others could see a recognition of nothing but *matter*. Hence the assertion that in matter he finds "the promise and the potency of every form of being" has been construed as merely an assertion that everything that is is matter, therefore that "spirit" is only a form of matter, and therefore that the Professor is no more a Materialist than are we who claim for man a *Soul* as well as a body. If the terms had been first defined and that definition observed by the speakers, one half at least of the present discussion would have been avoided.

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But the question is sure to recur continually in the papers and debates of the Society. *Matter* and *Spirit* are the bases of almost all psychological science. Controversy must be endless and worthless unless the disputants first agree upon some common meaning to be given to the terms used in their arguments. We shall have these questions presenting themselves again and again in this Society, and they will produce the same unsatisfactory waste of words unless once for all we assign to them a sense in which they are to be taken for the purposes of debate in this room and of use in our published papers.

But let it not go forth that what we propose is to dictate a definition, to be received as being in itself a perfect one. That would be an impertinence. Nothing more is designed than to indicate the sense in which the words should be taken in the discussions and papers of "The Psychological Society," with a view to keeping them more directly to the point at issue, and to prevent the loss of time and labour that must always result when disputants are without mutual knowledge of the fact that they are using the same words in different senses. This indeed is the source of nine-tenths of all the controversies that ever have been. If the same words were always used by all in the same sense, the majority of the disputes of the world would be instantly extinguished.

We cannot as a Society attempt to impose our own meaning of terms upon others. But we may well and worthily recognise it among ourselves. I know of nothing that would more promote the objects of such an association as this. There are many terms that must be of continual use in our science, by strictly defining which at the beginning we may immensely abbreviate our own researches. Remember that the special work of this Society—that indeed for which alone it exists—is to collect

reports of facts and phenomena, and to base science upon them by discussion. If two or more speakers submit to us their inferences from those facts, it will be impossible for the members to form a judgment of the relative nature of the views submitted to them if the words in the argument of one are employed in a different sense from the same words in the other argument. The Society may therefore properly say *to its own members*, "In our own proceedings these terms shall carry with them the meaning we assign to them. In that sense only you must use them here, and in that sense only will they be accepted and understood *by us*."

These doubtful terms are not very numerous. There will be no practical difficulty in resolving how they shall be used by the Society. Thus a list may gradually be formed, as experience discovers them, and circulated for common use. But there are two terms of immediate importance because of their daily recurrence.

"*Matter*" and "*Spirit*."

Already we have found some who say, in effect, "I mean by matter the same as you mean by spirit," and others who say, "I mean by spirit the same as you mean by matter." In the recent debates here on Materialism, speakers on one side contended that spirit was matter, and speakers on the other side that matter was spirit.

They may be so in fact—but certainly the terms as used, or as they are supposed to be used, do not intend the same thing, nor can it be reasonably supposed that they are designed to bear the same meaning.

At all events it must be the care of the Society, not only to see that in their proceedings these terms are not substituted one for the other, but to have it clearly understood that they are not synonymous, that they have essentially different meanings, and indicate different things,

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as also what are the different things that are intended to be described when they are employed in the proceedings of the Society.

Some argue thus for *matter*: "All that is must be made of something—otherwise it would be a nothing, and that something, whatever it be, is what we call matter—therefore all that is is material, and that is all we design to express when we speak of *matter*, and call ourselves *materialists*. Even if there be what you call *soul* or *spirit*, it would be made of what we thus call matter. Therefore, you are materialists, like ourselves."

This is the popular form of the argument, and it is a very convenient one for those who want courage to avow their true opinions. In fact it is merely an evasion of the question. The term "*matter*" is always employed in a more restricted sense. No disputant intends to express by it all that is, for then there would be nothing to dispute about. All really mean, by *matter*, some part only of being, whatever that part may be. It is in that sense we distinguish what we call "*matter*" from what we call "*spirit*." What we choose to call matter may include the thing we call "*spirit*." Let it be so. But when you are contending that there is no such thing as "*spirit*," we cannot permit you to evade it by saying "*spirit* is matter."

Taking "*matter*" then to be only one of the forms of created being, it is not difficult to define it for practical use in psychological discussion. The basis of that definition is very intelligible, and may be briefly stated.

The ultimate particle of which all things are constructed is "the atom." Atoms combine in various proportions, probably innumerable. Of these atomic structures, we know but one, because the human senses are constructed to have perception but of one, namely, that par-

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ticular combination of atoms which composes molecules—which molecules are the ultimate form of being that is perceptible to the human senses.

One only of what is doubtless an infinite variety of atomic combinations in creation being perceptible to us—that is to say, our senses being constructed to perceive but that one particular combination of atoms that forms what Science calls molecules, these are in fact the ultimate particles of all that can be seen, felt, heard, tasted by us. The entire of that small fraction of creation that is perceptible to our senses is composed of molecules, and molecular structure is controlled by a certain class of laws we term the physical or natural laws, and are moved by certain physical forces whose existence is only known to us by their action upon molecular structure.

This, then, is “matter,” or what alone we call “matter.” Whatever is of molecular structure is “matter,” and therefore “*matter*” is whatever is perceptible to the human senses. There might be about us a whole Universe of things constructed of some other combination of atoms than that we call molecular, and they would be wholly unseen, unfelt, unknown to us. We should be in absolute ignorance of their presence.

“Matter,” then, for the purposes of Psychological science, and as it is desired to be understood within the Psychological Society, and in which sense only it will be recognised in their proceedings, is *that combination of atoms which alone is perceptible to the human senses*. Whatever any human sense, unaided or aided, can perceive, is “matter.” All things perceptible to any human sense are *material*. Nothing that is not made of molecules can affect any human sense, which is excited only by the impinging upon it of something that is *material*—that is, of molecular structure. We do not feel the physical

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forces themselves ; we feel only the impact of the molecules they move.

This is a simple, clear, and very definite conception of *matter*, and if the term were always used in this sense, what a world of worthless controversy would be swept away !

What, then, in Psychological Science, is *spirit* ? As distinguished from *matter*, it is simply non-molecular structure, that is to say, some one, or more, possibly all, of the many combinations of atoms other than the molecular, but which combinations are imperceptible to our senses. *Spirit is all of being that our senses are not constructed to perceive.*

It may well be—perhaps it is—that *matter* and *spirit* are distinctions that are more in *ourselves* than in *themselves*. The seeming difference between them may be the result of our own limited powers of perception. It is certain that, if we had one sense more, we should perceive much that now is imperceptible to us, and in such case that which now is *spirit* to us would be *matter* to us. On the other hand, if we had been gifted with one sense the less, much that is now *matter* to us would be *spirit* to us. But the distinction is not the less real to us in our present condition of existence, nor the less to be recognized by Science.

It is the province of Physicists to deal only with perceptible matter, and to trace the forces by which it is moved and the laws by which it is governed. They rightly recognise this as their special work.

But not content with their own domain, they travel out of it to assert, without examination or evidence of any kind, that there is *no* atomic combination other than molecular, or that if there be, as it is imperceptible by the senses, it is unknowable, even unthinkable ; that inasmuch as we cannot seize and submit it to the scalpel and the crucible, we are unable even to prove its existence, much less to

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learn its nature and qualities, and, consequently, that Psychology is no science.

But Psychologists contend that they can learn the presence and character of things which are imperceptible to the senses by precisely the same process as the Physicists learn the qualities of the imperceptible forces of magnetism, that is to say by observing the operations of such imperceptible being upon the molecular structure that is perceptible.

Spirit, then, in the scientific sense in which it is recognised and used by the Psychological Society, is not used in the popular sense of the term, *Spirits*, *Ghosts*, and *Hobgoblins*; but in the contemplation of Psychologists *Spirit* is whatever existence there may be in the world or elsewhere that is imperceptible to our senses, but as real and substantial as ourselves.

"*Matter*," then, is the structure which alone our senses are constructed to perceive.

When we say that a thing is *material*, we mean only that it is made of that which is perceptible to us.

When we speak of *spirit*, we mean anything formed of some other than a combination of atoms which alone is perceptible to us.

When we speak of a *Spirit*, we mean any intelligent being formed of some such non-material structure, and consequently imperceptible to us.

When we use the term *Materialism*, we mean the doctrine that Man is made of *matter* only, that is, of molecules, and that his material mechanism is not associated with any non-material intelligent being other than the material body.

When we speak of a *Materialist*, we mean nothing more than one whose doctrine is that Man is wholly material; that there is of him nothing but the body, which dies

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and is dissipated, and that there is not in that body or associated with it anything in the nature of *Soul* or *Spirit*, or by whatever name we may be pleased to call it.

I hope that the Society will be enabled to define other disputable terms, not, of course, presuming to do so with any design to impose its own definitions upon the public out of doors, but for the special purpose of securing something approaching to common thought and speech among ourselves in the pursuit of the Science to which the Society is devoted.

For the special feature of this Society is that, departing from established methods, it proposes to pursue the Science of Psychology as all other Science is now pursued, by the collection of facts and the observation of phenomena.

THE PSYCHOLOGY OF MEMORY

AND

RECOLLECTION.

Read to the Psychological Society of Great Britain, June 1st, 1876, by MR. SERJEANT COX, the President.

Is our sense of identity due to memory and to memory alone ?

BROWN and some others assert that so it is. If, they say, a rose be presented to the sense of smell, removed, and again presented, we recognise our identity by the recollection we have in the second presentation that the like object had been presented before. *Identity is a repetition of consciousness.* They add that, but for this faculty of memory and recollection, there would be no conscious identity. If, when the second sensation occurred, we had no consciousness of any previous sensation, we should have no sense of personal identity. Practically, we should have a new existence with every new sensation.

It may be well questioned if we have not some other con-

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sciousness of identity than memory gives. Awake or asleep, we never lose the sense of identity: even in dream we do not for an instant cease to be ourselves. Waking suddenly from the profoundest slumber that was or appeared to be dreamless, the consciousness of identity is not lost for a single instant. So it is when recovering from delirium, from somnambulism and from trance.

We may doubt where we are or what we are and have but imperfect perception of objects about us, but we never doubt that we are ourselves, nor forget that we have existed before. Identity is not an act of memory recalling some past sensation; it is an extended consciousness of personal *oneness* (if the coining of a term may be permitted) and of a continuous existence.

It is not positively proved, but it is highly probable, that the mind preserves the memory of every impression, however slight, made upon the brain, and this although, at the moment of its reception, there was no consciousness of such an impression having been made. This conjecture is confirmed by many facts not otherwise to be explained. There is the familiar instance of the servant girl who, in the delirium of a fever, talked excellent Hebrew, which was afterwards found to be the reproduction from memory of readings aloud in that language by a former master while she was engaged in household duty and neither giving heed to nor understanding what he was muttering. Nevertheless, although unnoticed and no attention paid to them, those sounds had been impressed unconsciously upon the brain and conveyed to the memory, whence they were recalled by some unexplained excitation of the fever. Many cases of insanity are on record in which young girls tenderly nurtured have given utterance to the most obscene and vulgar expressions, which could only have fallen upon their ears rarely and by accident, when they had not been listening

nor were even conscious of hearing them ; nevertheless, they had been borne to the brain by the sense of hearing, and either preserved in the brain or by the brain conveyed to the *memory*, whence they were recalled and reproduced under some abnormal conditions, the diagnosis of which is as yet undiscovered.

What then is *MEMORY* ?

Is it a faculty of the material mechanism of the brain, or of the Conscious Self, whose organ the brain is for holding communication with the external material world ? This is another much vexed question in Psychology. But the earnestness of the debate upon it is not greater than its importance to our Science.

The contention of the Materialists may be shortly stated thus : "The brain is the organ for secreting thought, sensation, and emotion, precisely as the stomach secretes gastric juice and the liver bile. As the function of the stomach is to digest food, so the function of the brain is to make *Mind*—using the term *Mind* to express all of the operations the sum of which we so designate. The process may be thus described. Impressions of things without us are made upon the brain through the medium of the senses. The brain is impressed also by its self-actions. Whether brought from without or generated within, those impressions are nothing more than certain motions of the molecules of the brain, which motions appear to *its own* perceptive faculties as ideas, thoughts, and feelings—the operations, in fact, of the *intelligence*. According to this theory, Memory is a capacity of the brain to reproduce past impressions, upon the suggestion of something formerly associated with those impressions. Physiologically considered, Memory is the power the brain has to place itself in a certain series of molecular motions that have at some former time exercised it, and this upon the accidental

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as well as upon the voluntary recurrence of any one of that series of positions or actions."

This Materialistic theory of Memory would be intelligible and plausible if the impressions made upon the brain were few and far between. But they are infinite in number and continual of recurrence. In an average lifetime many millions of different impressions are made upon the brain, probably no two of them being ever precisely identical. Marvellous indeed would it be if the *conscious* impressions alone were the subjects of Memory. But seeing that the most probable office of Memory is to register *every* impression, however slight, at any time made after the brain has become strong and active enough to receive it, whether there was or was not consciousness of the impression, it is difficult to accept the conclusion that all these multitudes of molecular positions or actions could be retained for reproduction within the structure of the brain itself. The more popular and general notion, that so many photographic pictures are printed, as it were, upon the brain in microscopic minuteness and there stored away, pile over pile, to be brought forth again when wanted, is too impossible to be seriously refuted.

The Psychological theory of Memory is less fraught with difficulties and will commend itself by its simplicity. It is based upon the assumption that the phenomena of Memory go far to prove that the Conscious Self is not the molecular mechanism of the body, but that the Man is compounded of something other than the ever-changing brain, bone, and muscle—something that is conscious of that brain, bone, and muscle as being other than itself—something that has a *will*, that thinks, and feels, faculties which neither experience, nor reason, nor any stretch of imagination can attach to molecular substance in any form in which it is cognizable by us. Psychology does not attempt to

define what that something is. As yet it can offer nothing beyond conjecture. But it asserts confidently that it is not of molecular structure. Therefore it is imperceptible to the senses, which are constructed to perceive only the structure that is molecular. Psychology does not call this something *Soul*, or *Spirit*, because these are misleading names, which have been so used that different ideas are attached to them by different persons and having no common definition. But Psychology reasonably suggests that this *Something*, the evidence of whose being is so cogent, is probably constructed of some combination of particles other than that which makes molecules (the molecule being the ultimate particle of matter perceptible by the senses). Hence it is that our senses have no perception of that something, and that its existence can be proved only by its action upon the molecular structure our senses can perceive. We find Something that is imperceptible to our senses setting this perceptible molecular mechanism in motion, and directing its motions by intelligence, and having consciousness of individuality and a will to do or not to do, and ideas, thoughts, emotions. Although no sense can show us that Something in form, we have no more reason to question its existence, as proved by its *actions*, than to question the existence of magnetism, which is imperceptible to us, and which we know only through its action upon the molecular substances our senses are constructed to perceive. I repeat, that we contend only for the existence of this *Something* which constitutes the Conscious Self—the individual Man. But of what this Something is composed, in what manner it is united with the material mechanism, by what process it moves and directs the machinery, how the impressions made on the material brain are communicated to it, and how it conveys its Will to the mechanism, are problems as yet unsolved, which hitherto have received very

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little practical investigation by scientific observation of and experiments upon the phenomena of Psychology, but the discovery of which is not hopeless, now that, according to the plan and purpose of this Society, inquiry is set upon the scientific pathway of exploration by fact instead of by vain metaphysical speculation—as hitherto has been the practice.

We admit that the brain is the organ of the mind—the mental mechanism: that it receives the impressions conveyed by the senses and has self-induced action. We admit that those brain impressions are molecular motions of the substance of the brain. But we contend that the process does not end with the motion of the brain. We say that the impression so made upon the brain by the sense is communicated to that *Something* (not being the brain so moved) which we call the Conscious Self; that by this Conscious Self the impression so received is preserved and stored away (that is Memory) to be recalled under conditions and according to certain fixed laws. According to this suggestion of Psychology, Memory is a faculty of the non-molecular Conscious Self and not of the molecular brain structure.

Other considerations go far to confirm this conclusion. If Memory be merely, as the Materialists assert, the reproduction of certain positions or actions of the molecular structure of the brain, this difficulty presents itself. The substance of the brain is continually changing. The molecules of which it is made are not the same from year to year, or even from day to day. How, then, do *they* preserve a molecular position or action unchanged? It is comprehensible how this might be if all of such actions or positions were frequently reproduced. But how is it conceivable when many memories are preserved without being recalled for years? Again, the brain of the child is very much smaller than the brain of the mature man. But the brain

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of the Man, although differing much in structure, and altogether in substance, not only preserves perfectly the impressions made upon the brain of the child, but reproduces them more rapidly and more vividly than the impressions of its own maturity, or even than the impressions made upon itself yesterday. These considerations appear to be conclusive objections to the materialistic theory of Memory, and no other has been so much as suggested, save this for which I am now contending, that Memory is a faculty of the non-molecular Conscious Self. Nay, more. Does it not supply one of the most cogent proofs of the existence of that Conscious Self as some entity distinct from the brain, of whose action it takes cognisance? Psychology may boldly challenge the Materialists to explain the phenomena of Memory by any theory consistent with the action of brain alone or of any molecular structure.

It is necessary here to guard against an error so frequent that few persons succeed in freeing themselves from it entirely. *Memory* and *Recollection* are not only taken as synonymous terms, but the two processes are almost universally assumed to be the same. This confusion of thought and language has produced serious results in practice. They are in fact two wholly different processes. *Memory* is the faculty by which the impressions made upon the brain are retained either by the brain itself or by something receiving the impressions made upon the brain. *Recollection* is the process by which these impressions are recalled. *Memory*, as suggested above, is probably a Psychic process. *Recollection* is usually, perhaps not always, a brain process. In the normal state of the relationship between the Self and the body, the Self can restore the memories it has through the mechanism of the body alone. The brain must probably prompt the process of recollection, and certainly must receive and

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communicate the memories that have been so recalled. This mutual action is exhibited in the phenomena of dream. In that condition, the brain does not receive its impressions from without and works without the direction of the Conscious Self. Its action being so self-induced, the recollections so arising are confused, conflicting and wild, differing entirely from the memories that come to it directly from the Conscious Self. The like condition occurs in some diseased states of the brain, as in delirium and insanity. From these it may be reasonably inferred that the process of *Recollection* is not, like that of *Memory*, always a purely Psychic act, but that sometimes, in abnormal states, *Recollection* is conducted through the mechanism of the body, without the action of the Conscious Self.

But the Conscious Self works by means of a material mechanism, and therefore can express itself only according to the conditions of that mechanism. The brain is the machine through which it works for all those actions we call the "intelligence," and the extent and character of the action must therefore be determined by the character of the brain. As the Conscious Self can receive only what the brain imparts, and the brain can receive only impressions for which its structure is adapted, so *Recollection*, which is a restoration of those impressions, can be made only through the brain and therefore must be dependent upon the capacity of the recipient brain at the time of recollection.

Hence it is that although *Memory* receives and retains every brain impression, and possibly some received through other media than the brain, the capacity to recal those impressions varies greatly. Some persons recal rapidly and vividly; others slowly and imperfectly. We say of the first that they have *good*, and of the others that they have *bad*, memories. But these are improper uses of the term. It is not the *Memory* that is good or bad but the

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capacity for *Recollection*. This is proved by abundant experience. The act of storing in the memory is performed at one time, and the act of reproducing those stores is performed at another and later time, and often after intervals of many years. Now it is a familiar fact that in certain states of brain excitement, as in fever, insanity, under the influence of alcohol, or even of ordinary pleasurable emotions, the faculty of *recollection* becomes vastly more rapid and vivid in its flow. From this fact we learn that the process of *Recollection*, which can be thus stimulated by a present accidental influence to the revival of impressions made long ago, cannot be the same process as that of *Memory*, which was engaged in that far past in storing away the ideas that are now recalled.

Another question in relation to *Memory* has been often mooted and is still in dispute among Psychologists. GALL, and his successors, who have maintained the phrenological theory of the dedication of distinct parts of the brain to distinct mental faculties, have held, in strict accordance with their theory, that each mental faculty has its own memory. The metaphysicians, who have contemplated mind but as an abstraction only, consistently held, and still hold, the memory to be one mental faculty and one act of the whole mind denying the existence of various mental memories, as they deny the existence of various mental faculties, the many facts to the contrary notwithstanding. Their contention is, that these apparent diversities of memory are due to the accident of the particular memory having been more employed for one purpose than for other purposes, and they assert that, with equal practice, the memory would have been equally good to whatever subject it had been directed. The fact is indisputable that there are many varieties of memory. One man has a memory for words, another for figures, another for facts, another for music, and so forth. The Phrenologists

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contend that these varieties of memories are dependent upon the capacities of the several mental faculties to whose province those mental actions are consigned.

Referring to the physiology of memory suggested above, it will be seen to be in entire accord with the contention of the Phrenologists, so far as it relates to the distinct offices of the various mental faculties. But the Psychological theory carries it one step further. According to the suggestion I have ventured to advance, that memory is an act of the Conscious Self and not of the brain merely, the process may be thus described : The various mental faculties, through their material organ the brain, impart their impressions to the Conscious Self, by which they are stored away. Inasmuch as the number and vividness of the memories so stored are dependent upon the capacity of the brain organ of those faculties, the power of recollection—that is to say, the capacity for recalling those stored-up memories—would be proportioned to the power of transmission. The memory, thus understood, is a faculty of the entire individual Conscious Self, which receives and retains all the brain impressions brought to it by the brain, and, therefore, is dependent upon the various capacities of the brain that brings them. With the Metaphysicians we hold Memory to be one faculty of the Conscious Self—the individual entity we recognise as “I” and “You.” With the Phrenologists we hold that each mental faculty conveys to that Conscious Self its own impressions and that the process of Recollection is performed through the same mental faculty. The process of memory and that of recollection are consequently alike dependent for power upon the capacity of the brain organ that conducts them.

The mechanism of *Memory* and the manner of its action may, therefore, be thus described :

The brain receives all sense impressions, which it carries
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to the Conscious Self. Moreover, the brain is also subject to self-induced impressions ; and these also it conveys to the Conscious Self.

But the whole brain is not employed in receiving and conveying every impression, whether coming from without, or induced within. Each mental faculty, having a corresponding agent in the mechanism of the brain, is the exclusive agent for the conveyance to the memory of its own impressions. Hence it is we find that the capacities of Memory so much vary, not only in various persons, but in the same individual. If memory were one act of the whole mind there might be difference in the degree of memory among different persons, but there would be no, or only very slight, difference in the degrees of memory in the same mind. But in fact we find the most extraordinary diversity in this respect in the same individual. The same person often possesses an extraordinary memory for facts and none for words ; another can remember words accurately, but not music, and so forth.

So it is with Recollection, which is quite a distinct process from memory. It is accomplished through the same mechanism. The same brain organ that conveyed the impression can alone receive it again from the Conscious Self and cause it to be expressed when recalled.

That being the mechanism, let us endeavour, by some familiar instance, to trace its action.

Something was said yesterday which I desire to recollect to day. I direct my attention to it and it comes back to me. By what contrivance ?

Let us closely and carefully follow it.

Certain waves of the atmosphere, which we translate into words and which suggest thoughts, came to my sense of hearing and were conveyed to the central brain by a nerve which extends from the point that receives the impression

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to the other extremity in the brain at which the impression is communicated to the Conscious Self—this nerve being in fact, an extension of the brain. We can only conceive of this action as being performed by motions of the molecules of the brain, which motions suggest to the *Conscious Self* (of which the brain is the molecular organ for communication with the molecular world) the words so impressed upon the sense of hearing. The Conscious Self takes cognizance of this motion of the brain and *retains* the consciousness of it. This is what we call *memory*, and thus it is that we “commit to memory.”

Years afterwards we desire to recal the words so consigned to the memory. How is this process of recollection accomplished? Thus :

The Will goes to work and calls into action that part of the brain which performs the functions of the mental faculty of language, (for each mental faculty has its own memory). The process by which the required words are found when not immediately reproduced is by recalling other words or objects with which the desired words had been associated; a process well called by the Mental Philosophers “simple suggestion.” This brain action is received by the Self, and the past impression is revived, or, as we say, recollected.

This is the Psychological view of the Mechanism of *Memory* and *Recollection*, and it is equally good as an explanation of it, whether the brain be the Conscious Self, as the Materialists contend, or whether the Conscious Self be something other than the brain, as Psychology contends. Even if the brain be the ultimate agent, no other reasonable explanation of the mental action of Memory and Recollection has been yet suggested.

The explanation offered by some, that all mental action is merely a motion of the molecules of the brain, and that

memory is a capacity of the brain to reproduce any of its former molecular motions in the order in which they occurred, is so incomprehensible in itself, and so entirely inconsistent with all the phenomena of memory and recollection, as scarcely to call for serious refutation.

The suggestion offered in this paper may not be accepted as sufficient, and may not endure the test of further examination. On a subject so obscure, and upon which our knowledge is as yet so imperfect, it should not be rejected merely because it is new. If any thinking man can see in it anything that commends itself as true, I venture to hope that some thought may be given to it. The subject is certainly one that well deserves investigation by this Society, which is founded expressly to promote Psychological science by collection and investigation of *facts*.

It is no part of the argument, but I may be excused for directing attention to some interesting conclusions that appear to flow from it.

If Memory be the Treasury of the Conscious Self, and not of the molecular brain alone, and if that Conscious Self preserves its individual existence, with consciousness, after the garment of the molecular body has fallen from it, it follows that every the minutest thought and action of its world life will be then present to it, and this, not as they are now recalled, presented in slow succession, according to the conditions of the structure of the material organ by which they are conveyed and restored, but all together—the good and the bad—the whole life, in fact,—thus of itself making a heaven or a hell.

And if it be (as some hold, because it is a notion difficult to sever from an immortality in the future) that the Conscious Self has pre-existed, it follows also that, when disembodied, the Memory of the Conscious Self would

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contain and *present*, not merely the entire of its latest life, but the life history, also, of *all its past existences* !

What greater incitement than this to Man to lead a life that may be viewed at one glance by the disembodied Self with satisfaction and not with sorrow ?

POSTSCRIPT.

IN the discussion that followed the reading of this paper the question was put to me in what manner I supposed that the Conscious Self was united with the material body, so that the impressions made upon the brain could be conveyed to it.

Obviously the answer to this question could be nothing but mere conjecture. It was impossible to do more with so obscure a problem than show any suggested solution of it to be within the limits of the possible and the practicable. It was in substance thus :

The body is constructed of molecules, which are the ultimate particles of the matter that alone is perceptible to the human senses.

But there can be no reasonable doubt that molecules are not the ultimate particles of created matter, nor that the aggregation of atoms that makes molecules is not the only form of atomic structure. On the contrary, the reasonable *probability* is that molecular structure is but one of an infinite number of structures in creation.

Yet, inasmuch as our senses are constructed to perceive only that form of matter which is made of molecules, the other infinite varieties of atomic structures must be absolutely imperceptible to us, even though all space about us may be filled with them.

Our bodies made of molecules are not solid bodies; no two of the molecules that form them are in actual contact. There is ample space for them to be interfused, as easily they might be, by any other non-molecular structure. If the Conscious Self be composed of some combination of atoms other than that which makes molecular structure, it might easily permeate and possess the whole body.

This is a simple solution of what, on first presentation, appears to be an insoluble problem. I have shown *how it might be*. Is not the suggestion *reasonable* and *probable*?

But my own views of the nature and manner of this relationship were requested. I answered to this effect: "Conclusions on such a

theme are impossible. We have no facts on which to found them. The subject has not been sufficiently considered with a view to a definite and practical conception of it. But observation of the phenomena of Psychology, and continued reflection upon the theme, incline me more and more to the conclusion that the connection of the Conscious Self and its material mechanism (or that which in conventional language we term "soul" and "body") is not, as we have been accustomed to consider it, the occupation of one structure by another structure, the junction of two distinct entities—a soul, in short dwelling in a body—but the Mechanism of Man is that of a Self (or Soul) clothed with a body; that we are Souls, of which our molecular structure is merely the garment, our bodies being as it were incrustations at the point of contact with the molecular world; that the thing we call *spirit* is in fact the *substance*, and matter only so much of spirit as is presented to our senses, and which alone our senses are competent to perceive. If there be any truth in this suggestion, all that our senses can perceive is *matter* to ourselves, and all that the vastly larger portion of creation our senses cannot perceive is *spirit* to us. A new sense bestowed upon us would instantly convert much we now deem to be spirit into matter. The deprivation of one sense would instantly convert much we now call matter into that which now to us is spirit. Such an explanation solves many problems of Psychology and Physiology otherwise insoluble, and removes a thousand difficulties which attend every theory yet mooted of the relationship of a non-molecular Conscious Self to the molecular structure it moves and directs.

Psychological Society of Great Britain.

(Presidential Address at the Opening of the Third Session, Nov. 2, 1876, by MR. SERJEANT COX, President.)

It is my pleasing duty to open the Third Session of this Society with a brief review of the work it has done since its last anniversary and of the prospects with which it commences the third year of its existence. I have also to report the progress which our Science has made and the most important incidents that have occurred to it during the same period of time, for in the record of the past we may trace the promise of the future.

My task will be one of almost unbroken congratulation. Our Society has good cause to be proud of the progress it has made and the position it has won. There has been a great accession to the number of its members. Increased attention has been given to its proceedings by the press and the public. The attendance at its meetings has never failed. The interest taken in them by members and visitors alike has not flagged. The papers read have been upon many subjects of the utmost interest and importance. The discussions have been animated and instructive. I believe I may assert that, with the single exception of the ever-popular Geographical Society, no Scientific Asso-

ciation in London has attracted so large and constant an attendance.

But I must begin with the dryer details of business before I touch upon more exciting topics.

During the last year twenty-seven new members have been elected and only three have resigned. Our finances—always a matter of the utmost importance in Associations such as this—are in a flourishing condition. Thanks to the prudence of the Council, and the economy of our Hon. Secretary, we have avoided the rock upon which so many other Societies have been wrecked—expenditure not absolutely necessary to existence. Especially we have escaped the printer's bill. Some complaints have been made that we do not print our papers and report our discussions. Our answer is, "We cannot afford to do so at present, and we have resolved not to run into debt for any purpose, however desirable in itself. When increased income is produced by increase of numbers, we shall be prompt to publish our sayings and doings as older and wealthier societies have done. But it is our determination to keep our necessary expenditure within our income and be content to wait for luxuries. If the progress already made be continued—and we have reason for hope that it will be accelerated—the Council will not hesitate for a moment to carry out that which they desire even more than do the members."

But something has been done by way of advance. We have found a habitation, and I think all who visit us will say that a more comfortable one could not be desired.

Papers have been contributed by many competent Psychologists on various branches of our great science, which show at least the wide and almost unexplored field of research that is opened to it. Each of these papers has contributed something to our knowledge, to which the debates that followed always made some additions. A few of those papers have been published. But not by favour. They were printed by the authors, at their own cost, and by them

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liberally presented to the Society, and this course must continue to be observed for the present.

The subjects that have come under discussion during the last session have extended over a very wide area of Psychological science, whose magnitude and importance will be shown by recalling the subjects that engaged the attention of the members. I take them in the order of time. Mr. GEO. HARRIS raised a very curious question in a paper entitled "Caligraphy as a Test of Character." In fact every intelligent action of the body is an expression of a mental action, and as the mind is so must be the bodily act. Character is really indicated in every lifting of a finger—the difficulty lies in the reading of it, and tracing the precise mental characteristic with which the act is associated. But the question well deserves investigation. Two nights were occupied in debating the question of Materialism as advanced in Professor Tyndall's article in the *Fortnightly Review*. The discussion revealed great differences of conception as to the meaning of psychological terms—almost every speaker using them in a different sense. This led to a suggestion for the settlement of definitions of terms to be recognised within the Society—so that they may be understood and used by all the members in the same sense,—but without attempting to impose those definitions out of doors. The Committee has not as yet made progress with this work, but we hope soon to do so. Mr. MASSEY laid before us a report of some experiments tried by him in America with some powerful Psychics. He did not then anticipate the conspicuous part he would afterwards take at home in opposing the prosecution of one of them and in resisting the attempt of the Materialists, under a transparent pretext of protecting the public, to suppress the investigation of all psychological phenomena, because, if proved to be true, they are fatal to the theory of materialism. To Mr. TAGORE we were indebted for two very eloquent papers on "The Psychology

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of the Aryans," which introduced us to some knowledge of our science as it was held by the most ancient races of the world, and faithfully transmitted to their descendants,—our fellow citizens in our Indian Empire. An animated and deeply interesting discussion was promoted by a paper on "Comparison of the Mental Faculties of Men and Animals," a question which, if followed out, cannot fail to throw great light on mental physiology generally.

Mr. Wake contributed a paper on "Consciousness," which exhibited throughout evidence of the profoundest thought on one of the most difficult and controverted questions that has engaged philosophy. Consciousness is the point at which Psychology comes into direct conflict with Materialism, and the phenomenon which the Materialists themselves are compelled to admit completely baffles them. They can, it seems, digest the notion of thought being secreted from matter, but how matter can be conscious of itself perplexes them still, as ever it will do. The problem, indeed, cannot be solved without the admission of Soul as a part of the Mechanism of Man. Again Mr. HARRIS, in a well-reasoned paper, considered the objections made to psychological phenomena and very completely disposed of them. In another paper he brought under the consideration of the Society the alleged phenomena of "Apparitions," but time did not admit of its full discussion, and the subject will probably be renewed during the present Session. There is indeed much to be said on both sides. Lastly, the Society honoured myself with admirable debates on three important psychological questions, which I ventured to submit to the members, namely: "Matter and Spirit," "The Psychology of Wit and Humour," and "The Psychology of Memory and Recollection."

This will be admitted to be a goodly list for so youthful a Society as ours. But I hope it is only a foretaste of the material that will be provided in this and future Sessions towards the advancement of the grandest Science which

the mind of Man could entertain, and the knowledge of which will so conduce to the highest interests of humanity.

The subjects brought into debate have been remarkable for the extent of their range, showing the truly enlightened spirit in which the Society has entered upon its task—which is not to advance any system, nor maintain any theory, nor promote any *ism*, nor support any foregone conclusion, but to inquire what the truth is by observation of the facts of nature. We are not teachers but learners—pupils not masters. We do not profess to promulgate a science, but to establish a science of which at present little more is known than the most elementary principles, and the facts of which are as yet almost unexplored. We acknowledge our ignorance of them. We admit frankly that the few hitherto collected are insufficient to afford a solid basis upon which to build up a Science. When Physical Science was treated by the world as Psychology has been treated until now, the Physical Sciences were as backward as is Psychological Science. So long as Scientists used the argument *à priori*—this cannot be because it is inconsistent with something we know to be true—that is impossible for it is opposed to common sense and common experience—no progress was made. It was not until this incubus was shaken off and a so-called philosophy of mere argument was abandoned for the exercise of the senses—when the terms “impossible,” “improbable,” “irrational,” employed by one party, and the scarcely less terrifying terms “sacrilegious,” “diabolical,” “supernatural,” “damnable,” shouted by another party, were treated with the contempt they deserved, that the Sciences of Astronomy, Geology, Magnetism and the rest made a leap forward and advanced with ever-growing speed along that highway of discovery and positive knowledge on which they are still progressing. It is not long ago, in the measure of a world’s life, that it was declared to be opposed to common sense and to the experience of all mankind—aye, even of

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our senses—that the earth revolved round the sun ; and the man who so asserted had a narrow escape from being burned alive for his audacity. But now the whole world accepts this impossible theory, so contrary to common sense and universal experience, as an undoubted fact. Harvey was persecuted almost to death for affirming the circulation of the blood in the body. “Every man,” said his opponents, “who has ever lived knows that it is not so ; he could not have a stream running through his body at such a rate without feeling it—besides, it is contrary to the known laws of nature that a liquid should run uphill—we can prove by argument that it cannot be and common sense pronounces it impossible.” Stephenson was told by the Scientists of his time that it was impossible *à priori*, and contrary to common sense, that wheels should carry a heavy load over an iron tram at a rapid rate ; they would not bite and *could* only revolve without advancing. When the phenomena of Somnambulism were asserted within living memory, they were denied and their assertors denounced as fools or rogues, impostors or dupes, because those phenomena were strange, impossible, contrary to common sense and common experience, and Dr. Elliotson was hounded to his ruin for declaring them to be realities. And now these very phenomena, within my own memory so vehemently denounced, and for exhibiting which prosecutions were threatened and persecutions were practised without stint, are admitted by all physiologists to be true, and find their place as facts in every Treatise on Mental Physiology, and are proclaimed by learned Professors from the platform of the British Association for the Advancement of Science.

This Society is established to deal with Psychological science in the same manner as Physical Science has been dealt with, and to which its astonishing progress is due—by collecting all facts bearing on it from all reliable sources, by observing and recording all alleged phenomena having relation to it ; from those facts to trace the laws by which the

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human intelligence is governed—what is its structure—what its relationship to the material mechanism in and by which it is exhibited, and in what manner and to what degree it influences the external world. Surely this is a legitimate field for investigation; surely it is a work worthy of the best intellects to inquire what the mechanism of man is—what are his powers and capacities—what is that mind on which he prides himself,—if he really has the Soul he had fondly believed, until assured by the Scientists of our time that it is a superstition and a dream, and that even to look for it is to stamp you a fool and to say you have found it is to prove yourself a knave.

We have, however, this great consolation—that it is the common lot of all truths. The ordeal of truth is always and everywhere the same. Interest and vanity combine against whatever threatens the profits or the infallibility of the established chiefs of science. No weapon is deemed to be unlawful in such a warfare. The formidable rival must be suppressed at any cost. If argument will not suffice, then abuse and ridicule. If facts cannot be explained, they must be boldly denied;—if inquiry is to issue in their affirmation, it must be suppressed;—abuse and ridicule must not be spared, and, if these fail in their turn, then the police court and the gaol. It was thus in old time the priest succeeded in stamping out theological heresy. It is thus that in our own time the scientists propose to stamp out scientific heresies. The spirit is the same, the motive is the same, the dogmatism is the same, the same end is sought by the self-same means. The Inquisition flourishes still, but the Inquisitors are Professors. The only difference is that they cannot now use the thumbscrew and the faggot. But they do not scruple to exhume mouldy statutes, passed in times of ignorance, wherewith to strangle the inquiry they dread, nor to torture with abuse and ridicule and social discredit those whom they are unable to answer by refuting their facts.

Dogmatically denying the existence of soul—believing

honestly that man is wholly material—that he is merely an automaton—that his intelligence is only brain structure—that the Conscious Self is but a condition of matter—thought but a secretion of the brain—that man is nothing but the machine our senses show us—that soul is a diluted insanity—spirit a myth—and life after death an invention of priestcraft, the hostility of the Scientists to such a Society as this is readily explained. Denying the very existence of Soul, an Association that proposes to investigate the Science of Soul cannot but appear to them a ridiculous folly. “There is nothing for you to inquire into,” they say. “There is no such thing as that which your name assumes. If there be, you cannot find it, for it is imperceptible and inconceivable. You cannot grasp it, carve it, analyse it, exhibit it before the Royal Society. Until you do this Psychology can be only a sham science. We will none of it.”

But why the fierceness of wrath with which Psychology is assailed by the Scientists? What means the rage it excites? The question must have occurred often to many and we may pause for a moment to find the answer.

Enthusiasm in favour of proofs of the being of Soul is intelligible enough. It is at least a natural emotion. But an enthusiasm on behalf of materialism—an almost fanatical hope to prove soul *not to be*—a burning desire to defeat whatever tends to prove its being, to suppress inquiry and deter from investigation by appeals to prejudice and ignorance and by every unscrupulous device that the vocabulary of abuse and the letter of the law can furnish, seems utterly unintelligible. A pursuit in search of Soul might have been supposed to be at least harmless. Any proofs of it asserted to be found might have been expected to be received with respect and examined with eagerness. But the fact is otherwise. If a blight and a curse were looked for instead of that which, if it be, is the greatest prize that could be offered to laborious investigation, the howls raised against it could not be more full of malignity. Wherefore so?

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Psychology, or the science of Soul, is denounced by several classes from directly opposing motives.

First are the Materialists—they who hold the faith that man is only a machine which produces the force that moves and directs itself—that Death is annihilation and the future a blank. These are the natural enemies of Psychology;—they are, and must ever be, engaged in a struggle with it of life and death, for the two principles are in direct antagonism—they cannot coexist. If one be true the other is false. If Psychology supports her claims, Materialism is extinguished. If Materialism maintains its contention, its assertion will be proved that there can be no such science as Psychology. The bitterness with which the Materialists assail the Psychologists, the contempt they pour upon them, the frantic endeavours they make to deter from the examination of any phenomena that appear to point to the being of something in man other than his mortal material structure, is thus accounted for.

The hostility of Materialism is therefore sufficiently explicable. Not so the hostility of the opposite party. At the first blush it might be supposed that Theologists at least would have welcomed with delight and hope what Materialism views with dislike and dread. Theology is built upon the assumption that man has a soul. If soul be a dream and not a reality, if Materialism be right and Psychology wrong, Theology must close its churches, banish its priests, and burn its libraries. But nevertheless, wonderful as it seems, the hostility of Theology to Psychology is in fact only second to that of Materialism.

What is the meaning of this ?

The cause is clear though strange. Psychology proclaims its purpose to be to prove the existence of Soul, or rather to seek for proofs of it—not by argument or assertion, but by the evidence of facts and phenomena,—and to pursue it by the same methods and establish it on precisely the same basis as the other facts of nature. Theology objects to this

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that it is an intrusion upon her province and a practical disputing of her authority. To seek for *proof* of soul as a *fact* implies that it is not to be accepted on her authority as a *dogma*. Shallow as such an argument may be, it prevails very extensively and enlists a second great array of opponents.

The third army, not so powerful, perhaps, but still far more numerous than it is thought to be, is formed of those who admit the reality of the abnormal phenomena of Insanity, Delirium, Somnambulism, and Psychism, but say that they are the product of demoniacal agency. The Insane are possessed; the Somnambulist has his wonderful super-sensuous perceptions through devils; the force displayed in Psychism is an infernal power. These opponents have at least the merit of consistency and offer a fair question for examination.

Lastly there are the mighty multitude who have no knowledge of their own, who have never witnessed anything, who have not even the capacity for judgment, who take all their opinions from others and who are wholly led by whatever may be the prevailing views of any question whatever—mere echoes—as noisy and as empty.

There is another remarkable feature of this warfare against the existence of Soul as asserted by Psychology. Not only does it unite the most opposing parties but it is conducted by them in quite a novel fashion. The usual course of Scientists is to require each to keep to his own science. If a new fact or a new theory is announced by the electrician, the geographer or the geologist would not dream of passing an opinion upon it. He would defer to the judgment of those whose study it has been. So with individuals. What sane man who knew nothing of magnetism or physiology, who had never witnessed an experiment nor learned its principles, would proclaim himself a fool by denying its facts and denouncing its theory. The chemist takes his electricity from the electrician, the

physiologist looks to the geologist for his geology—each would deem it an impertinence in the other if he were to pronounce a judgment in the branch of knowledge not his own. Strange it is, but true as strange, that this rational rule is wholly set at naught in the treatment of Psychology. Physical Scientists deem themselves competent to pronounce a dogmatic judgment upon Psychology and all that appertains to it, without having witnessed any of its phenomena and in entire ignorance of its principles and practice.

And what are the objections they have raised? They are worthy of notice only that they may be answered.

It must ever be remembered that Psychological research differs from Physical experiment in this, that the subject is not only sensitive but has *intelligence* and a *will*. The subjects of physical research are wholly at the control of the experimentalist. *He* can command his own time, place, circumstances, and impose his own conditions. Otherwise it is with the Psychologist. Time, place, circumstances and conditions are not at his command and he cannot impose his own conditions upon his subject; they must be more or less imposed upon him. The Physicists are as unable or unwilling to recognise this as they are to acknowledge a difference between organic and inorganic laws. They continually talk of imposing their own conditions upon a living intelligence as they are accustomed to impose them upon a dead earth or metal. A Physicist who has distinguished himself in the great fight now going on between Materialism and Psychology wrote thus to me, "Give me my conditions, and I will undertake to expose any number of them." He is right in this; and I will undertake to do the like with him and his colleagues. Give me my conditions and I will warrant the failure of every experiment they attempt and exhibit them to the world as apparent impostors. With a few drops of water I would easily defeat every one of Professor Tyndall's brilliant experiments at

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the Royal Institution. I would not require even to go near him or to hold his hands or examine his table. I would sit in the gallery far from him and a shower of invisible spray from the syringe with which I water my plants would make him look as foolish as he would feel. Let *me* impose my conditions upon *his* experiments and I will undertake to annihilate them. As it is, the world has faith in him and his reputation would relieve *him* from suspicion of trickery and fraud. But if he were a stranger and for the first time exhibiting his marvellous experiments and asserting, contrary to common experience, that light, heat, electricity and magnetism are identical, and that he would prove them to be so by experiments performed under *his own* conditions, those experiments failing under *my* conditions, he would have been called a rogue and a vagabond, and prosecuted as an impudent impostor by rival Scientists whose theories his experiments would, if successful, have destroyed.

But this subjection of the experimentalist to conditions imposed by his subjects actually prevails with one branch of Science—Physiology. Mr. Lankester is a physiologist. He has advocated vivisection as vehemently as he opposes Psychology. He is as eager to prove that animals do not feel pain as that Man has no Soul. When he wants to dissect a living dog to view the beating heart and the quivering nerve, he must first paralyse the limited intelligence of the creature. The physician who desires to learn the functions of the human mechanism cannot do so when he pleases and how he pleases, or with any human structure he pleases—he must look for cases of abnormal action—and even then he must observe under conditions imposed by the patient and not under his own.

But what shall be said of those Scientists who deliberately pronounce a judgment upon that of which they have seen nothing and know nothing? What would *they* say if we were to do the like with them? If a Psychologist were to question the experiments of an electrician, or the dis-

coveries of physiologists, having witnessed nothing and learned nothing of either, what would not be the reproach and ridicule heaped upon his impudence and ignorance by those whose studies and experiments he had set at nought? Or, if the Psychologist had called the Physicist a fool for believing his eyes, declared him to be incompetent to observe, and charged him with *diluted insanity*?

To return from this long but not uncalled-for digression to the immediate business of the Society. It is established for more important purposes than that of a debating Club. Papers and discussions are a useful interchange of opinion by thoughtful minds. Science, however, must be based upon *facts*, or it is not Science, and these facts must be many and various, collected from many sources and stamped with a sufficient assurance of authenticity. Psychology has been so long lagging in the rear because it was based upon metaphysical abstractions and the deluding impressions of self-consciousness, instead of observation of objective phenomena, collected facts and experimental research. It was the admitted necessity for entering upon a new path and pursuing Psychology as the Physical Sciences have been so successfully pursued, that this Society owes its existence; for it is only through the machinery of a great and widely extended association that such a gathering of observed phenomena and reported experiment can be brought together.

In this work, the primary purpose of its being, the Society has made good progress. Reports of observed psychological phenomena have been publicly invited and liberally supplied from all parts of the civilised world. The reading of these is the first and perhaps the most interesting business of our meetings, precisely as in other scientific societies the objects of their investigations are exhibited. As our brother and ally "the Anthropological" displays its skulls and its battle-axes—as the Pathological shows its gangrenes and its wens; as the Entomological

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in this very room produces its beetles and its humble bees ; so do we collect reports from observers everywhere (who authenticate them to us) of the facts and phenomena that are the product of the operation of one or more of the forces by which the Mechanism of Man is moved and directed : *Life—Mind—Soul*. Already there has been brought together a large body of facts that settle some disputed questions by proofs far more numerous and conclusive than those upon which Physical Science has based its axioms. I will refer to one of many ; but it is a specimen of all. The existence of super-sensuous perception—of mental perceptions by some other as yet undiscovered means than the ordinary media of the senses—is established by a mass of evidence perfectly overwhelming. Yet was this phenomenon not long ago disputed and denied, declared to be a delusion or a cheat, its believers fools and dupes and its subjects imposters or conjurers, until now we have the fact admitted by Dr. Carpenter himself and proclaimed by a learned Professor from the platform of the British Association.

We had hoped to have been enabled ere this to print the record of these collected facts ; but merely as *reports*, without comment or discussion, as material only for the future structure of our science. For the reason already stated we have been unable as yet to accomplish the design. But the contributions we have received are carefully preserved for future publication and we would earnestly entreat, not a continuance merely, but a largely increased flow, of such communications of psychical phenomena from all who may have opportunities for observation of them. Their occurrence in private families is by no means infrequent. But as they are often associated with abnormal physical conditions, there is a natural reluctance to make them known. Let me repeat that all such reports are, if desired, received and preserved in strict confidence with respect to names and places, and we require only such an authen-

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tication as may be necessary to assure the Council of the genuine character of the report. For instance, it will suffice if the reporter of them to us is a person whose voucher may be accepted that the facts are as reported, without mention by him of names and localities. But where privacy is not insisted upon we should, of course, prefer the full statement. In this manner some hundreds of important psychological phenomena might be sent to us yearly for preservation in the record that must become ultimately the solid basis of *fact* upon which alone Psychological Science can be constructed for the future.

Such are the events relating to the proceedings of this Society within this room. I have now to refer to some incidents affecting Psychological Science which have occurred since the opening of our last Session. They could not be omitted from an address which is designed to be, however imperfectly, an annual review of the progress and prospects of Psychology.

The first and greatest of the events of the year was the discussion of Professor Barrett's paper before the British Association. It was a narration, by a qualified observer, of some of the phenomena of Artificial Somnambulism, notably instances of supersensuous perception. This is a great step gained, for if supersensuous perception be a fact, the conclusion is inevitable, that there is something in us having a capacity for such perception, and that something other than the material brain, which we know to work only through the material mechanism of the senses. As a Society, we have nothing to do with *isms* of any kind, nor do we venture to express, or even to form, any judgment as to the causes of the phenomena we record. On these individual members may have their own belief. But the time is not yet come for the Society to formulate theories or invent names. We must be content to go on piling up facts until a foundation has been laid broad enough and solid enough upon which to build a Science.

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[An attempt is being made to determine disputed questions of science in Courts of Law. But it is not thus that Scientists should fight. The Materialists are wielding a weapon that may recoil. The Law is double-edged. In its dusty folios statutes can be found that might immesh themselves. Their anxiety to discredit every fact or phenomenon which, if established, would go far to annihilate the degrading doctrines of Materialism is sufficiently intelligible. Doubtless it is the desire and the design to discredit the authority of Barrett, Wallace, Crookes, Lindsay, Rayleigh, Huggins, Carpenter, and other members of the Royal Society who have publicly recognised the reality of some of the Psychological Phenomena as exhibited in Somnambulism and other abnormal conditions of the human mechanism. There is an eager desire to deter, by dread of popular prejudice, other persons from pursuing investigations which, if found to be true, will be fatal to many reputations. But in the name of universal Science, in the great cause of freedom of inquiry and liberty of thought, an indignant protest should be made against all endeavours to revive in this nineteenth century the practice of the Inquisition, and to seek the suppression of scientific heresies by penal laws.(a)]

We may, however, congratulate ourselves on other signs of marked progress. Investigation has been demanded by high authority and notably by the *Spectator*. It is now admitted that in many of the alleged psychological phenomena there is at least some truth that challenges inquiry. This public call for scientific examination has been already anticipated by the Society. At the close of the last Session an experimental committee was appointed, whose business it will be to examine with requisite experiment and test all alleged psychological phenomena that may

(a) This paragraph is substituted, the Oxford Union having carried a resolution to the effect that inquiry into a scientific question from which the majority dissented should be put down by penal legislation.

be submitted to the notice of the Society and to report the results of those investigations. The Committee will actively pursue its labours during the present Session.

There is no more fatal fallacy than that Truth will prevail by its own force—that it has only to be seen to be embraced. In fact, the desire for the actual truth exists in very few minds and the capacity to discern it in fewer still. When men say that they are seeking the truth, they mean that they are looking for evidence to support some prejudice or prepossession. Their beliefs are moulded to their wishes. They see all, and more than all, that seems to tell for that which they desire; they are blind as bats to whatever tells against them. The Scientists are not more exempt from this common failing than are others. As Psychologists, whose special study is the human Mind and Soul, we also must emphatically recognise that weakness of our common nature, and therefore it behoves us the more to keep watch and ward against its stealthy influence with ourselves. Individually we are all disposed to see things from our own point of view alone, to colour them with our own prepossessions and to jump at hasty conclusions that square with our preformed impressions. But *as a Society*, composed of men having a variety of conflicting views—which collectively, in its corporate capacity, can have no prejudices nor prepossessions—we may endeavour, with some confidence, to make search after the truth, the whole truth, and nothing but the truth, and having found it, to proclaim it fearlessly, whether the issue of that search shall be to exalt Man to immortality or degrade him to a mollusc.

CEREBRAL PSYCHOLOGY,

READ AT A MEETING OF THE

PSYCHOLOGICAL SOCIETY OF GREAT BRITAIN.

BY

CHARLES BRAY,

AUTHOR OF THE "PHILOSOPHY OF NECESSITY," "A MANUAL OF ANTHROPOLOGY,
OR SCIENCE OF MAN" "FORCE AND ITS MENTAL CORRELATES,"
"THE EDUCATION OF THE FEELINGS," ETC.

"The absolute and unholy barrier set up between psychical and physical nature
must be broken down."—DR. HENRY MAUDSLEY.

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CEREBRAL PSYCHOLOGY.

"And words of learned length and thundering sound,
Amazed the gazing rustics ranged around,
And more they gazed, and more their wonder grew,
That one small head could carry all he knew."—GOLDSMITH.

THAT our individual consciousness is all we know, or can know, is now generally recognised as a fact, and the wonder of it, that "one small head" should carry it all, is not confined to the "rustics." I propose to examine what that knowledge is we thus carry about in our heads, and how it gets packed there. If, putting aside the prejudice we have derived from "our mothers," founded on old women's tales that have come down to us from the infancy of our race, we open the Book of Nature, we shall find there many pages very clearly written of facts easily verified.

Passing the "fiery mist" or nebulous matter, where all forms of life are said to have lain "latent" and "potential," as a fact not very easily verifiable, let us go on through countless ages to the time when the earth was capable of bearing, not only Life, but Sensibility. Till then it was practically non-existent, for a world without feeling or consciousness is the same as no world at all. By Consciousness I mean any kind of feeling or sensibility, and

not reflection on consciousness, which is another thing. In its lowest form it exists as a sort of nebulous mist or protoplasm, out of which all higher kinds of thought and feeling are evolved. Where it begins it is difficult to say; whether plants have feeling has not yet, I think, been quite satisfactorily determined. From the *monera*, the first form of sensitive individual life, we pass by successive evolutions through amœboids, worms, polyzoa, and ascidians, till we arrive at the vertebrata and mollusca, with the first of which we have only to do, as there only we can distinctly trace the nervous system through all its wonderful variety. The increase of sensibility or power of feeling always increases in proportion to the enlargement and complexity of the nervous system as we trace it through fishes, reptiles, birds, and quadrupeds. From the point of the animal scale where the brain becomes distinctly visible up to man the nervous substance is the same; and as the range of its function extends part after part is added to it, thus increasing both in size and complexity. The evidence of this afforded by comparative anatomy is irresistible. The *Edinburgh Review*, even in its 94th number, a long while now ago, recognised this; it says: "In the nervous system we are enabled to associate every faculty which gives superiority with some addition to its mass, even to the smallest indication of sensation and will, to the highest degree of sensibility, judgment, and expression. The brain is observed to be progressively improved in its structure; and with reference to the spinal marrow and nerves, augmented in volume more and more, until we reach the human brain, each addition being marked by some addition to or amplification of the power of the animal, until in man we behold it possessing some parts of which animals are destitute, and wanting none which they possess." Ascending thus the scale of sensi-

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bility or feeling through the nervous system we find that the brain of a fish bears about the average proportion to the spinal cord of 2 to 1 ; of the reptile, of $2\frac{1}{2}$ to 1 ; the bird, 3 to 1 ; the animal, 4 to 1 ; and men, 23 to 1.

By a careful comparison of function with development or structure, we have been able to ascertain what thoughts and feelings are connected with each part of the brain as it increases in complexity and size. I know this is denied, and all that the leading Physiologists of the present day admit is, that all thought and feeling is connected with the molecular action of the brain. It is said Phrenology is not a certain science ; it appears, however, to me, after forty years study, to be quite as certain as any other department of Physiology ; and that the functions of the brain are as well or better known than the functions of any other part of the body. What knowledge of any part of the body can yet be said to be *certain* science ?

But leaving every one to form his own opinion of our cerebral Physiology according to his ignorance or knowledge of the subject, I wish to point out the Psychology, or Phrenology, or Science of Mind, that has been based upon it, and which has been acknowledged even by opponents to be the only one that is generally recognised, or has any numerous class of followers.

According to this system the Intellectual Faculties which perceive *existence* are, Individuality, Form, Size, Weight, and Colour.

The Intellectual Faculties which perceive the *relation* of external objects are Locality, Number, Order, Eventuality, Time, Tune, and Language, which latter faculty gives a facility in acquiring a knowledge of, and a power of inventing, arbitrary signs, or sounds to express thought.

The Reflective Faculties of Comparison, Causality, and Congruity, compare, judge, discriminate, and trace adjust-

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ment or purpose. The External Senses are the connecting links between these faculties and the external world, and in direct perception are necessary to bring the faculties that perceive existence into activity.

The Feelings are the Self-Protecting, the Self-Regarding, the Social, the Moral, the *Æsthetic*, the Religious, and the feelings which give concentration, power, or permanence to the others. Each of these divisions comprises a group of feelings or faculties. Each Intellectual Faculty and Feeling is connected with a particular part of the brain, the relative size of which can be pretty accurately determined by those who have qualified themselves for the purpose. These thoughts and feelings, thus consequent upon the molecular action of the brain, are but varied kinds of sensibility differing from the monad to man according to the structure or body with which it is connected, and with intensity of feeling in proportion to the size and perfection of the organ through which it acts.

We have now, I think, a sufficiency of facts before us to enable us to determine what we set out to do, viz., what the knowledge is we carry about in our heads, and how it gets packed there. Now, as to the nature of our knowledge, we know, and can know, only our own consciousness, that is, the thoughts and feelings we carry about in our heads. We think we know a great deal more about the world without us; but all we really know of it is simply how things without us act upon our sensibility. As J. S. Mill says, "What we term the properties of an object, are the powers it exerts of producing sensations in our consciousness." The generality of mankind think they know a great deal more. They believe in an external world as it appears to them, and not merely in modifications of our sensibility. Fichte says of these things external, "there is, in fact, nothing there, but only a manifestation of power from something that is

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not I." Kant also says "that there is an illusion inherent in our constitutions that we cannot help conceiving as belonging to things themselves—attributes with which they are only clothed by the laws of our sensitive and intellectual nature." We are told, however, by the Realistic School, "that man is brought into relation with external objects by means of faculties, each one of which corresponds with a special property of the object." Thus, that objects have form, size, weight, colour, number, &c., and that man has organs or faculties by means of which he perceives these attributes. But it is impossible to conceive how an external property or force can have any possible likeness to an internal feeling or idea. As Mill says, "A cause does not, as such, resemble its effect; an east wind is not like the feeling of cold, nor heat like the steam of boiling water; why, then, should matter resemble our sensations? Why should the inmost nature of fire or water resemble the impressions made by these objects on our senses?" A few simple impressions received from without are worked up in the brain itself into a picture which we believe to be the external world, and this picture has no existence anywhere but in brains similarly constituted. An impression is made by the senses on the brain that lies immediately over the superciliary ridge, and we have ideas of form, size, colour, &c.; and by our organ of Individuality we attach these qualities to individual existences; we perceive the number and locality of such existences, and conceive of them as existing in *space*; motion and succession give us our idea of time; we trace also resemblances and differences, and relations of causality, and congruity or adjustment. Only some of these faculties have direct relation to external objects, and others have relation to the ideas furnished by such objects; so that only part of our knowledge can be said to come through the senses. Our faculty of individuality

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gives us our noun substantive ; form, size, &c., our adjective ; and eventuality, which give us our idea of action and motion, our verb. The forces acting upon us seem to bear certain relation to each other, the recognition and registering of those, with their modes of action, is called Physical Science. It is expressed in imaginary or unknown quantities called molecules and atoms, with their attractions and repulsions, or likes and antipathies. This is the kind of knowledge man carries about in his head ; his world is manufactured there ; and it is the same with all other animals, each creates its own world according to the extent and perfection of its nervous system ; a world differing from ours, but equally fitting it for its place in the scale of being.

Let us illustrate this by the organ of colour. If the part of the brain over the centre of the eyebrow is deficient, people can only partially distinguish colours ; with a further deficiency they are colour blind. People colour blind are met with everywhere, so that this is a *fact* easily verified. Mr. Gordon, I believe, is mistaken when he says the defect is in the eye. *I* have always found deficiency of brain. The eye is merely the means of communicating with the brain, and it may do that imperfectly, but it is the brain alone gives an *idea* of colour or of anything else. Now a world without colour must be a very different world to the one perceived by people generally. The brain is liable to be similarly deficient with reference to other faculties ; there may be blindness in the reflective faculties, or in the conscience. This happens every day ; the extraordinary thing is that people so deficient very seldom seem aware of their own deficiency, any more than they are aware of their want of discriminative power in colours. Consequently, we have all sorts of people in the wrong places, and mischief and failure every-

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where which could not happen if people were rightly placed. Such deficiencies, as well as extra powers, are readily discerned by all who qualify themselves for the purpose.

A competent phrenologist sees at once, without any special examination of the head, or feeling of the bumps, as it is called, whether a man has the natural powers that would make him a good husband and a firm and affectionate friend; whether he is fond of home; brave or timid, or morally brave; violent in temper, reserved, acquisitive; proud or vain; persevering, firm in principle; fond of truth and justice; courteous, kind, hopeful, credulous, and poetical. Of the Intellect, he sees at once whether the faculties are best fitted for Art, Science, or Mechanics, for Literature, or Philosophy. All this knowledge is now thrown away, because the Science of Cerebral Physiology has been quacked, and an assumption of greater certainty claimed for it by professors than we are yet prepared for; and because, also, a bad name has been given to it as leading, it is said, to Materialism.

Now, with reference to the manner in which knowledge gets packed in the head. The character of our knowledge, or what we are capable of knowing, was determined ages before we came into the world. We cannot know more than how things or forces without act upon our brains, causing a peculiar mode of sensibility. The difference in these modes of sensibility we call faculties, and these faculties represent a specific action of different parts of the brain. Now how has this specific action been brought about? Simply by the repeated action of force without, and the reaction of force within. This in time has moulded the brain to its particular shape and power of action, and this shape and power has been transmitted from one generation to another. Thus our mental powers are merely experiences which we have inherited through the brain given to us by

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our parents. All our powers, both of thought and feeling, thus act as instincts or intuitions; and when in a previous paper I said "Instinct was memory once removed," I meant it was impressions made upon the brain in a previous generation, not in childhood, or in our own lifetime. Man is thus a bundle of instincts, transmitted through every animal form of life that has previously existed. As I have said elsewhere, "Memory is the result of impressions on the brain; these impressions are deepened by repetition till both speech and action become involuntary in a recognised and definite order, along the path so often travelled. In old age, when our animal vigour is exhausted, and less force passes through the brain, and the brain itself becomes less susceptible of impression, the old impressions resume their sway, and we return to our old habits of feeling and thinking, and our early memories."* But I need not dilate upon the subject of present Memory, as you have already had an excellent paper on the subject by one of your Vice-Presidents, Dr. Geo. Harris. He tells us that, according to Locke, pleasure and pain contribute most to fix ideas in the memory; and that Mr. Smee observes that, "as a general rule, the power of memory is proportionate to the intensity of the impression." This is only saying with Helvetius, "that there is no memory without attention, and no attention without interest;" and with Serjt. Cox, in "What am I?" "that each faculty has its own memory, and that memory is usually proportionate to the capacity of the faculty;" and let me add that the capacity of each faculty is proportionate to the size of its cerebral organ.

It may be thought, from all I have said, that I am a Materialist; on the contrary, I cannot even understand

* A Manual of Anthropology, or Science of Man, based on Modern Research, p. 65.

the supposed difference between Materialism and Psychology. All we know of things without us—of matter, of objects—is simply how they act upon our sensibility, and there is no reason whatever for supposing that this something that acts upon our sensibility in any way resembles the sensations it occasions. As Mill says, "There is not the slightest reason for believing that what we call the sensible qualities of the object, are a type of anything inherent in itself, or bear any affinity to its own nature." How foolish, then, to talk of *mere matter*, of what it can do, or cannot do, and of its essential difference from something else, when in fact we know nothing about it, except how it affects us. We know only our own consciousness, and this we call Spirit, but we know no more of its real nature or essence than we do of matter. How, then, do we know that there is any *difference* between Matter and Spirit? But if there is, what we know is Spirit,—and we know nothing of matter, and Materialism results in absolute Idealism.

We know nothing of either Matter or Spirit, but in their modes of manifestation, one as conscious, the other as unconscious; but the conscious is constantly passing into the unconscious, and the unconscious into the conscious. So that, as Mill says, assuming the Mind (or Soul) to be a distinct substance, its separation from the body would not be, as some have vainly flattered themselves, a liberation from trammels and restoration to freedom, but would simply put a stop to its functions, and remand it to unconsciousness, unless and until some other set of conditions supervenes, capable of recalling it into activity, but of the existence of which experience does not give us the smallest indication." (Essays on Religion, p. 198.)*

* Do the "Spiritualist" manifestations indicate any of these conditions?

Life, Mind, Soul, then, what are they? Of Life—this “vital spark of heavenly flame”—we know nothing, but that it is dependent for its existence on “the continuous adjustment of internal relations to external relations,” and sensibility, that is, the aggregate of all our thoughts and feelings, which we call the Mind, depends upon Life. The Soul is the force or power which anything possesses, whether that be conscious or unconscious. Each separate thought has its own soul, each “organic unit” of the body which has its own proper attribute, has its separate soul or force, the specific action of which is entirely dependent upon the whole body. As Cowper says:

“There lives and works
A soul in all things, and that soul is God.”

“Science,” Carnot tells us, “conducts God with honour to its frontiers, thanking Him for His provisional services.” This is too much the attitude of science at the present day; but if, as Tyndall says, we find in matter, “the promise and potency of every form of life,” then what he calls matter, which “at bottom,” he says, “is essentially mystical and transcendental,” is what we call God, in Whom, and through Whom all things exist, and Science is our “Revelation.”* In another paper I have treated of this “Soul in all things,” under the title of “Natural Law, as Automatic Mind or Unconscious Intelligence.”

* It is but one form of the Universal—of the “Substance” of Spinoza, of the “Being” of Hegel.

NATURAL LAW,

AS

Automatic Mind or Unconscious Intelligence.

READ AT A MEETING OF THE
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BY

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AUTHOR OF THE "PHILOSOPHY OF NECESSITY,"

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"If the Divine Idea will not retire at the bidding of our speculative science, but retains its place, it is natural to ask, what is its relation to the series of so-called Forces in the world?"—JAMES MARTINEAU.

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NATURAL LAW,

AS

Automatic Mind or Unconscious Intelligence.

By Natural Law we simply mean the order in which things invariably follow one another, without reference to the cause of why they do so, or why they do so invariably. With respect to the cause there has always been a great difference of opinion. That this sequence is invariable is held by scientists to be all we know, and that we know nothing about the cause or why it is so; that is held to be beyond the limits of our knowledge.

Again, is there any necessary connection between these sequences, between cause and effect? This has been answered, Yes, by one school; No, by another of equal authority. We have no means of knowing, say others, neither can we tell whether such causation is universal.

Again, whence do we get the idea of Causation; how is it formed in our minds? By experience, say some; by habit, by intuition, say others, but these are the same things only a little farther removed from each other. Habit is repeated experience, and intuition is habit organised and transmitted. But there is another school, to which belong

Locke, Mill, and Mansel, who say that our idea of cause arises from analogy to our own voluntary actions. The generality of mankind expect the sun to rise from habit, few go so far as experience, that is, that it will do so because it always has done so, and fewer still ask what Power it is that makes it do so. But when we come to reason upon this "power" or cause, the only idea we have of it is the use we ourselves make of it in our own voluntary actions.

The Persistence and Correlation of Force is the great discovery of the nineteenth century, and yet no sooner has it been made manifest that Force is as real, as measurable, as indestructible as matter, than all classes of both mental and physical philosophers are in a hurry to bury it again; and that which is proclaimed to be indestructible is nevertheless said to be no entity. The physicist finds only "motion," the psychologist "free will," and both Materialist and Spiritualist equally find matter and spirit acting spontaneously. No cause or force is required for the production either of motion or volition; and the fact that there is such a thing as force, and that each manifestation of it can be interpreted only as the effect of some antecedent force, is practically ignored. The Materialist says, force or power is simply an innate principle or attribute of matter, or rather it is the physical motion itself, and the notion, or rather feeling, that power is a something distinct from matter, is an illusion, and the idea that matter would be inert except for something else pushing it behind, or carrying it along, is absurd. Thus the active principle, the cause of all change, is supposed to be inherent in matter itself, the same as psychologists affirm the active principle to be inherent in mind itself. The one party wishes to get rid of the invisible or spiritual principle in matter, the other to do without cause for volition, or what becomes of free will, and the interests of morality supposed to be based upon it!

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Now how is it after the discovery of force and its indestructibility that Philosophers of all schools are thus so well able to do without it? This is owing to the imperfection of language and the want of definition, the term "Force" indicating a mere abstraction, having no real existence, but standing for the ability or power of the agent of which it is the force. But as motion is inseparable from the thing moving, so is force from this agent. Matter is supposed to be this universal agent by one school, mind by another, but both matter and mind are forms only of this agent, whatever it may be. Like everything else it is unknown to us in its own nature; objectively it is invisible, and known to us only as a mode of motion; subjectively, as Will power, that is, as a sense of effort when we voluntarily overcome resistance. Matter is concentrated force or centres of force; molecules and atoms are imaginary creations invented to express certain relations of quantity of forces to each other. As Huxley says, "Every form is force visible; a form at rest is a balance of forces; a form undergoing change is the predominance of one over others." This predominance of one over others is caused by more force being added, which change or mode of motion continues till the additional force passes on to something else. Nothing can give out more force than it has received; when that is expended it is inert or dead till it has been re-charged. In a row of ivory balls force is put in at one end and passing through each it comes out, undiminished in quantity, at the other end. Force is put into a watch, by compressing a spring, it works all the machinery till it is expended, and then the watch stops. It is the same with the human body; its "organic units" each of which has its own proper attributes, are supplied with force; when that is given out to the new matter, they are dead, and require to be carried out as so much waste. What we call matter never generates force, it only conditions

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it, that is, determines its mode of action ; and every existing state has necessarily grown out of the preceding, each manifestation of force being the effect of some antecedent force, and thus, as Oerstead says, " Everything that exists depends upon the past, prepares the future, and is related to the whole."

Force, by which we must always understand the Unknown Agent of which it is the force, passing through the brain becomes conscious ; it then loses its characteristic as a mode of motion, until, under what we call the power of the Will, it resumes its action as physical force and becomes again unconscious.

This consciousness is all we really know—to know a thing and to be conscious of it being the same thing. Hume says, " We may observe that it is universally allowed by philosophers, and is, besides, pretty obvious of itself, that nothing is ever really present with the mind but its perceptions or impressions and ideas, and that external objects become known to us only by those perceptions they occasion. . . . It is impossible for us so much as to conceive or form an idea of anything specifically different from ideas and impressions. Let us fix our ideas out of ourselves as much as possible ; let us chase our imaginations to the heavens, or to the utmost limit of the universe, we never really advance a step beyond ourselves, nor can perceive any kind of existence but those perceptions which have appeared in that narrow compass."

This would appear to be the merest truism, yet no one *practically* believes it. It appears to be one of those axioms which, as Hume says, admits of no answer, and produces no conviction. We know only thoughts, not things, and of those thoughts we know only that they are our thoughts ; we know nothing of their real nature or essence. All arguments, therefore, based upon an assumed essential difference between matter and spirit, between the material

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and the immaterial, are only so much idle talk ; we know nothing of such differences, we know only of difference in their modes of manifestation.

Herbert Spencer says, "That a unit of feeling has nothing in common with a unit of motion becomes more than ever manifest when we bring the two into juxtaposition." What a unit of motion may be, as motion is inseparable from the thing moving, I do not know ; but whatever it may be, we can perceive no other kind of existence but our own perceptions, how then can the two be brought into juxtaposition ? Again, we are told that the latest results of scientific inquiry, whether in the region of objective psychology, or in that of molecular physics, leave the gulf between mind and matter quite as wide as it was judged to be in the time of Descartes. It still remains as true as then, that between that of which the differential attribute is Thought, and that of which the differential attribute is Extension, there can be nothing like identity or similarity ; the fence that divides them has never been broken down, and until the inseparable distinction between subject and object, between the conscious and the unconscious, can be transcended, it can never be broken down : (" *Outlines of Cosmic Philosophy*," by Mr. Fiske, p. 445.) Knowing only Mind or our own Perceptions, how do we know that there is any gulf between Mind and Matter ? Motion and Extension are only known to us as modes of thought. But what is this distinction between the unconscious object and the conscious subject ? "The sum of our knowledge of the connection between mind and body," says Sir. Wm. Hamilton, "is that the mental modifications are dependent upon certain corporeal conditions, but of the nature of these conditions we know nothing." Fiske tells us, with reference to these conditions, that "the physical action which accompanies physical changes is an undulatory displacement of molecules,

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resulting in myriads of little waves or pulses of movement." Under this action of the brain, force—of which all unconscious objects are composed—passes from the unconscious into the conscious state. I know that this is denied. It is said that an unfailing parallelism between the manifestations of the two is all that has yet been established. It is true Herbert Spencer says, "that no idea or feeling arises, save as the result of some physical force expended in producing it, is fast becoming a common-place in science." But both he and all others at present confine this expenditure of force to the production of the abovementioned corporeal condition, while I maintain that if consciousness tells us anything, it is that under these conditions a great part of the force received into the body with the food passes from unconscious into conscious force, from what is called matter to mind, from the object to the subject—proving, in fact, what our later philosophers, with Spinoza, have asserted, that there is but one comprehensive ultimate substance, of whatever nature it may be, and which we may call Mind, Conscious, or Automatic.

Sensibility or Feeling, then, is a correlation or transformation of force. That the gulf between physical and mental force has hitherto been pronounced unpassable is owing to the altogether arbitrary distinction that has been set up between them. The medium through which physical force becomes conscious force is the brain and nervous system; the specific character of thought and feeling—that is, the varying consciousness—from the monad to man depending upon the complexity and perfection of its structure. Each animal thus has its own ideas or feelings, and a world of its own, created in its own brain, in which it plays its part. The food supplies a certain amount of force to the body, estimated, whether correctly or not I do not know, at fourteen million foot pounds daily in a full grown man.

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This force works the whole machinery of mind and body, and our sensibility, that is, our ideas and feelings, are strong and vivid in proportion to the amount of force expended in producing them. The force that thus passes into feeling is no longer known to us indirectly as a mode of motion, but directly as consciousness. That our physical force is so used up in feeling is evident to us in a thousand ways in the direct relationship between mind and body. Let a person watch himself carefully, and he will soon discover, notwithstanding that the brain is a great reservoir of "potential" power, that in proportion as he expends his strength elsewhere he has the less for thinking or feeling. We cannot think to any purpose when the force is required for digestion; and the best cure for love or any strong feeling is a thirty miles walk. Cripples who can expend little muscular or mechanical force often display great powers of mind. Had Sir Walter Scott not been lame in his youth we should probably have lost all the fruits of his wonderful genius. If we lose one of our senses it increases the power or sensibility of the others. This is not merely from increased action of the brain, but that a larger amount of force is supplied to it for transformation into feeling. This is supplied by the blood, and an instrument has been invented by which the relative quantity supplied to the brain may be measured. A portion of the arm is inclosed in a vessel, and as that portion of the arm is expanded or contracted, the amount of blood supplied to other parts of the body is measured by the rise or fall of a barometric column. When a person was asleep there was most blood in the arm, and the least when the mind was most active, so that the amount required for any strong thought or feeling was correctly measured. To say, then, that a mere "unfailing parallelism" between the action of the brain and consciousness is all that has yet been established, is disproved by all facts, for

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what is called physical force, through the instrumentality of the varied nervous systems of animals, is constantly passing into mental force, and back again to physical force, throughout the whole world. Let those who affirm this mere parallelism tell us where consciousness, which is the mental *force* of thought and feeling, comes from. The customary reply is, oh! it is the Soul which thinks. Granted, but if so, where does the Soul come from? and out of what is it made? and why is every attribute of its thought and feeling dependent entirely upon the body? The answer to this, from my point of view, is simple. As physical and mental force pass so readily into each other it is a fair inference that like all other forces they are forms only of the same entity, and that there can be no mutual influence where there is no common property—* and that mind, therefore, only can produce mind, that all force is mind conscious or automatic, and that the Soul is that portion of Universal Mind which plays such varied tunes

* "Is, then, the transmigration of forces altogether an illusion? By no means, but before one can exchange with another, *both must be there*; and to turn their equivalence into a universal formula, *all must be there*. With only one kind of elementary matter, there can be no chemistry; with only the chemical elements and their laws, no life; with only vital resources, as in the vegetable world, no beginning of mind. But let Thought and Will with their conditions once be there, and they will appropriate vital power; as life, once in possession, will ply the alembics and the test-tubes of its organic laboratory; and chemical affinity is no sooner on the field than it plays its game among the cohesions of simple gravitation. Hence it is impossible to work the theory of Evolution upwards from the bottom. If all force is to be conceived as one, its type must be looked for in the highest and all-comprehending term; and Mind must be conceived as there, and as divesting itself of some specialty at each step of its descent to a lower stratum of law, till represented at the base under the guise of simple dynamics."—"The Place of Mind in Nature and Intuition in Man" (REV. JAMES MARTINEAU).

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as it passes through the equally varied organisms that are its instruments. Mr. G. H. Lewes tells us that motion—not Force—and feeling are identical, and he devotes the last fifty pages of his “Problems of Life and Mind” to the elucidation of this supposed fact. But how can Motion be anything? It is the mere transference of a body from one point in space to another; it is a mere abstraction inseparable from the thing moving, and surely Mr. Lewes does not mean that the brain moving and thought are the same thing? But that is what he says: thus “the neural process (the brain in motion) and the feeling are one and the same thing viewed under different aspects. Viewed from the physical or objective side, it is a neural process; viewed from the psychological or subjective side, it is a sentient process” (Vol. 2, p. 459). “Motion is a mode of Feeling.” (p. 456) . . . “The phenomenon known objectively as a nervous tremor, a neural process involving very complex elements of molecular energy, does not *become* a feeling in the sentient organism; it *is* that feeling in the organism, and is the occasion of a quite different feeling in the observer” (*Idem*, p. 488). Again he says, “So far as knowledge reaches, the forces at work in consciousness are the forces at work in the organism; and the forces at work in the organisms are the same in kind as those in the Cosmos.” So far it will be seen I quite agree with him, but he adds: “there, as here, Force is nothing but *mass acceleration*.” Thus we are to infer that “mass acceleration,” *i.e.* matter in motion and feeling are the same thing. Mr. Lewes is determined to exclude the agent which is the cause of mass acceleration, and, consequently, he is obliged to make our “perceptions” the only kind of existence we can ever know as identical with Motion, which is *nothing*, or with the

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brain in motion, *i.e.*, mass acceleration. And yet Mr. Lewes, having got rid of Force as mass acceleration, immediately after reinstates it in its proper place as molecular energy. Thus he says, "A stream of molecular energy flows through the organism from the great cosmic force, and returns to the ocean whence it came" (p. 462). This is precisely what I have been asserting, only by "molecular energy" I mean the stream of force that sets the brain in motion, and by that force I mean the Unknown Agent of which it is the force or from which the force is derived. Animal bodies

"Are but organic harps diversely framed,
That tremble into thought, as o'er them sweeps,
Plastic and vast, one intellectual breeze,
At once the soul of each, and God of all."—COLERIDGE.

Mr. Lewes says, "We may now condense the various arguments of this chapter in a single statement—Existence—the Absolute—is known to us in Feeling, which in its most abstract expression is change, external and internal. The external changes are symbolized as "Motion, &c." (*Idem*, 502). Now, if Mr. Lewes will allow us to substitute for change or motion, which is nothing but an abstraction, this agent or cause of change—and that is evidently what he means—I can agree with him entirely. He says truly, "There is no real break in the continuity of existence; all its modes are but differentiations. We cannot suppose the physical organism and its functions to be other than integral parts of the cosmos from which it is formally differentiated; nor can we suppose the psychical organism and its functions to be other than integral parts of this physical organism from which it is ideally separated" (*Idem*, p. 503). The law of the Persistence of Force or Continuity of Energy shows that it is the same force which, passing through different organisms, assumes different

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"forms" under these new conditions, and that this force is part of the general Cosmic force although thus differentiated to serve a specific purpose. And, as Mr. Lewes says, "This unification of all the modes of Existence, by no means obliterates the distinction of modes, nor the necessity of understanding the special characters of each. Mind remains Mind, and is essentially opposed to Matter, in spite of their identity in the Absolute; just as Pain is not Pleasure, nor Colour either Heat or Taste, in spite of their identity in Feeling. The logical distinctions represent real differentiations, but not distinct existents. If we recognize the One in the Many, we do not thereby refuse to admit the Many in the One" (*Idem*, p. 504).

We can only judge of Mind from our own very limited experience as it presents itself in our consciousness. We find there that conscious acts of volition, frequently repeated, pass into the automatic or unconscious state. The same mental power is displayed, and the same effects produced unconsciously as consciously, and this appears to be effected by the structure or body with which we always find Mind in connection. It is illustrated in our walking, talking, eating, and playing upon an instrument, every motion of which originally required a distinct conscious volition. If this can take place in the very short period of our existence, it is reasonable to suppose that all unconscious action may have originated in the same way; that all power is Will power. Our only knowledge of power is that which we ourselves exercise when we overcome resistance by the action of what we call Will. Matter consists of innumerable atomic forces acting each in its own special way, attractive or repellent. Each is striving or making efforts like our own Wills, and each individual atomic action was originally, most probably, a conscious act of volition. These atomic forces, by a series of combinations and adjustments, have passed into the

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Order of Nature, from conscious to unconscious action, so that we have now all the effect of intelligence acting unconsciously; and this unconscious intelligence is more intelligent in the growth of plants and animals than the conscious intelligence anywhere known to us. It may be said that we have no more right to assume that all force is mental than that it is physical, particularly as it is from the physical power that the mental seems to arise. But how does it so arise? It is only from every atom from the first acting from conscious intelligence that this result is attained. It is mind throughout that produces what we call mind, physical force being automatic mind; for, as we have seen, "unless among your primordial elements you scatter the germs of Mind as well as the inferior elements, the evolution can never be wrought out:" (Lotze's *Microcosmos*.) The intelligence of man is the highest *conscious* intelligence with which we are familiar, but he could not make his own body; where each part now acts unconsciously towards the ultimate objects of his being—the production of the largest amount of pleasurable sensibility. This body has probably taken millions of years to make, part being added to part on the principle of evolution, but each part originally existing separately and acting consciously. If we now consciously attended only to the action of the heart, there would be little else that the mind could do. But all that is done for us, leaving the mind free for higher purposes, consciousness only returning when something is going wrong in the machinery, and interference is necessary. And so it may be in nature; in the progress from the monad to the man evolution and natural selection are yet unable to account for all that has taken place, and no doubt the "missing links" are supplied by the action of conscious power and intelligence. Of the nature of this intelligence, and of its mode of action, we can know little or nothing, we can only judge faintly by analogy.

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Man's body, which is a Universe in itself, acts unconsciously to release the high powers of sensibility, viz., of thinking and feeling. The body of the Universe acts unconsciously, in what we call Natural Law, to produce the largest amount of pleasurable sensibility. The connection between cause and effect, in which we see nothing but invariable sequence, is one of purpose, to produce this effect. Originally each cause and effect was a conscious action of power; in the ages it has passed into the automatic. All power is Will power. As motion is inseparable from the thing moving, so is force or power from the agent of which it is the power, and this Source of all Power we have called God. All things are produced directly, although not consciously by Him, for power cannot be delegated or separated from its source. As Spinoza says: "He is the universal Being of which all things are the manifestations." If all things partake of the nature of Mind, and space or extension is a form of thought—a thought not being a yard long and a foot thick—then as the World exists in thought in our mind, the Universe may exist in the mind of God, and may have no other existence; and so Force also is One; in this sense we may conceive of God as a Personality.

"All are but parts of one stupendous whole,
Whose body Nature is, and God the Soul."

But while Soul and Body are One and indivisible—all we see is but the Nature of God, and what we call laws of Nature are attributes of Deity. "Every *thing* is a mode of God's attribute of extension; every *thought*, wish, or feeling, a mode of His attribute of Thought" (Spinoza). The Universe or Body acts as our body does, automatically, in the order which we call Natural Law, while the Soul is the essence of pleasurable sensibility, which we call Happiness, for I think, with Bishop Butler, "that it is manifest that nothing can be of consequence to mankind, or any creature (or Crea-

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tor), but happiness." The force out of which this happiness is created centres only in God, He is the Divine Source of it all, and truly and literally "in Him we live and move, and have our being." Man, contemplating himself as an individual, necessarily fails to understand the mysteries of his being. *Cogito, ergo sum*, is a delusion. The "Ego" is a mere form of thought, like space and time: all that we know is that thinking is. The universal Force, which resumes its consciousness, thinks in me. Thought and feeling, and the happiness of which it forms part, is not individual, but universal. Thus Fichte, whose *Ego* is no individual *Ego*, but the universal world-*Ego* come to consciousness, recognises this view, and consequently he would not say, I think, but it thinks—the universal world-process of thought thinks in me. We are units only of the great aggregate of Sensibility of which God's being is composed, in which the aggregate of happiness is so great that all pain or evil are obliterated. It is only when we have "laid the meddling senses all asleep" and the force is withdrawn from bodily action

"That with an eye made quiet by the power
Of harmony, and the deep power of joy,
We see into the life of things."

When we feel with Shelley that

"The awful shadow of some unseen power
Floats tho' unseen among us;"

And with Thompson that

"All is but the varied God.
From seeming evil still educing good,
And, better thence again, and better still,
In infinite progression."

Psychological Society of Great Britain.

Fourth Sessional Address by the President
MR. SERJEANT COX, Nov. 1, 1877.

THE FOURTH Session of the PSYCHOLOGICAL SOCIETY OF GREAT BRITAIN commences amid circumstances that cannot fail to give a new interest and importance to the Society, to attract to its proceedings the attention of a larger public, and to enlist the sympathies of many by whom its objects have been hitherto unknown or misunderstood.

The questions "Soul" or "No Soul?" "Is Psychology a real or sham science?" "Are we associated for the investigation of a myth or of a very real existence?" have been of late actively agitated by both speech and pen. Thus has this great subject been brought under the notice of the educated public to an extent and in a manner never attempted before. In the *Nineteenth Century* the question of Soul or no Soul has been distinctly put forward for formal discussion and comment. Thinkers of all shades of opinion were invited to express their views. The pages of the periodical were fairly opened to all sides. Divines, statesmen, lawyers, scientists, economists, philosophers, accepted the invitation and took part in this Modern Symposium. For several months the question has thus been ably argued from the Theological, the Positivist,

the Materialist, the Physical, and the Metaphysical point of view, and all that the best thinkers of our time could say about it *argumentatively* has been said—and well said.

But with what result? All who followed this discussion from its commencement to its close must confess that it left the question at least as obscure as before and the reader more perplexed than ever. This effort to solve the problem has had no other effect than to shake the confidence of the believer and to leave the doubting more doubtful.

Psychologists cordially welcomed the proposal of this controversy and have followed it with eager interest. For my own part, having read every word of it, I have closed it with something more than disappointment—with the profound conviction that, if this be all the best minds among us can adduce to show the existence of Soul in Man and its survival after the death of the body, HUXLEY and TYNDALL are right, we are but automata and the Soul a superstition to be consigned to the limbo of vanities; but, as a fact in nature, to be taken into account by science, or for any practical purpose, it must be received as are other poetical fancies. The entire of this memorable debate was *argumentative*. It was a series of inventions of reasons, more or less ingenious, why Soul *ought* to be and *may possibly* be, but without a solitary proof, or even an attempt to prove, that it actually *is*. The familiar appeals to man's hopes and aspirations—to his longing after immortality and the injustice that must be if there were no future to redress the wrongs of the present—were reproduced with eloquence and power, but no answer was attempted to the adverse facts adduced by the equally earnest advocates of Materialism. The *Science* of Psychology—the *Science* of the Soul—was scarcely recognised. As I have said, this battle of words left the doubting more doubtful, and must have shaken the faith of many who had a firm faith before, because the doubts had never before been so distinctly presented to them.

This *fiasco* has invested the Society with a new importance and its proceedings with a new interest, because the great work thus attempted and failed to be done by argument will be seen more clearly than ever to devolve upon ourselves, who prefer to adopt the more scientific process of proof by observation and experiment. The metaphysicians having so lamentably failed to sustain by argument alone the existence of a Soul in Man, the way is opened for the Psychologists to *prove* that existence, if they can, not argumentatively and by appeals to the inner consciousness, but by reference to facts and phenomena and by the production of objective evidence accumulating to positive proof. Psychology has not yet received its due recognition because the public mind has been content to accept the being of Soul upon dogmatic assertion, or metaphysical abstractions, and it was happy in its unreasoned faith. But the Materialists have rudely disturbed that faith. The shaken confidence can never now be restored by argument alone. Nothing but a defeat of the Materialists with their own weapons will suffice to replace faith by knowledge. Henceforth the desire will be to say, "I know." It will not be enough to say, "I trust." The battle of the Soul must be fought with the same instruments with which Science has maintained the existence of magnetism. The last and greatest endeavour to prove Soul by *argument* against the disproof of it by *fact*, as is the contention of the Scientists, having conspicuously failed, there remains for the student only the questions—*Are there such facts? Are there psychical phenomena which prove the existence of Soul by the same process as the existence of any other fact is proved, by the evidence of the senses for the phenomena and by inquiry into the sources of those phenomena as reasonably to be deduced from their nature and character.*

But the Society is still more indebted to Professor TYNDALL for having, in his recent brilliant address at Birmingham, so distinctly defined the province of Psychology and the con-

sequent work that devolves upon Psychologists. True, that the object and scheme of our Science has been persistently stated in our prospectuses, in our addresses, and in all our proceedings; but it has received only a partial public recognition. So powerfully is even the scientific mind prepossessed with the notion that Psychology is a purely metaphysical study, to be evolved from men's inner consciousness and pursued by logic alone, without reference to *facts*, that a proposal to pursue it, as all other sciences are pursued, by observation of phenomena and experimental investigation of facts, has been looked upon rather as a heresy to be put down than as a rational claim to be gravely considered.

Therefore it is that our gratitude is due to Professor TYNDALL for having directed public attention, by a statement intelligible to all, couched in language the most attractive and enlivened by illustrations the most apt, to the precise point in the mechanism of man at which Physiology ends and Psychology begins. We thank him, also, for the admirable clearness with which he defines the proper province of Psychology. True, he tells us that in his judgment and in that of the Scientists generally, Psychology is a Science without a subject—the baseless fabric of a vision—a poetical conception merely. But he does not disguise from himself nor from his audience the true difficulty in which his brilliant argument involves him. He does not deny that there may be something more in man than Physiology reveals. He says only that Science has found no proof of it; and he declares that, if Soul be, it must be proved, not by dogmatic assertion, not by conjecture, not by desire, not by authority, but by *facts*.

This is precisely what has been said by the Psychological Society, and it was to perform the task of collecting and investigating the *facts* and *Phenomena* of Mind and Soul that the Society was established. It has by three years anticipated the challenge now publicly made by Professor

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TYNDALL, for we cordially concur in his contention that Soul is not a question of sentiment, desire, or dogma, but of *fact*, to be decided like other questions of fact. We take up the glove the eloquent PROFESSOR has thrown down. We accept his challenge. At this point we join issue with him. We have said, again and again, and we repeat now, that we propose to prove the existence of Soul *as a fact*, by evidence of precisely the same kind as that by which Professor TYNDALL proves the existence of magnetism and electricity. If such proof should be found to fail, then we will sorrowfully admit that Professor TYNDALL and the Scientists are right—that Soul is a myth—Psychology a sham science, and Man a machine merely.

But not to do him an injustice, I must cite Professor TYNDALL himself.

The argument is conducted with exceeding subtlety. He bases it upon the now admitted theory of the *Conservation of Energy*—which may be described as meaning, that this World is a ball composed of a certain quantity of matter incessantly moved by some energy (or force) existing within or applied from without. Of this mass of matter no particle is ever lost. It may and does change its forms continually, but there is not now an atom less than there was yesterday and will be tomorrow. So with the *energy*, or cause of motion, that permeates every part and particle. That, too, is not lost. It disappears only to reappear in another form, presenting itself in other modes of motion, insomuch that one form of motion can be converted into another form of motion by the skill of the Scientist, as many of us have seen in his own inimitable experiments in the lecture-room of the Royal Institution.

This principle of transferred instead of extinguished force shown in inorganic matter the Professor applies to organic structure and finds it there also. The muscles work—that is, they generate force. How? By consuming a portion of themselves. It is the force stored up in the

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blood that is conveyed from the arm to the load it moves. The nerves convey the Will to the muscles and set them in motion. But what is the Will that thus moves the nerves? What is the "I" that is conscious of the command, and of the performance of that command? *That* is the question upon which the Physicists are at issue with the Psychologists. *That is the Province of Psychology.* Professor TYNDALL has made this clear to the whole world. He says :

"The warrant of science extends only to the statement that the terror, hope, sensation, and calculation of Lange's merchant are psychical phenomena produced by, or associated with, the molecular motions set up by the waves of light in a previously prepared brain. But the scientific view is not without its own difficulties. We here find ourselves face to face with a problem which is the theme, at the present moment, of profound and subtle controversy. What is the casual connection, if any, between the objective and subjective—between molecular motions and states of consciousness? My answer is, I know not, nor have I as yet met anybody who knows. It is no explanation to say that the objective and subjective effects are two sides of one and the same phenomenon. Why should the phenomenon have two sides? This is the very core of the difficulty. There are plenty of molecular motions which do not exhibit this two-sidedness. Does water think or feel when it runs into frost-ferns upon a window-pane? If not, why should the molecular motion of the brain be yoked to this mysterious companion—consciousness? We can present to our minds a coherent picture of the physical processes—the stirring of the brain, the thrilling of the nerves, the discharging of the muscles, and all the subsequent mechanical motions of the organism. But we can present no picture of the process whereby consciousness emerges, either as a necessary link or as an accidental by-product of this series of actions. Yet it certainly does emerge—molecular motion produces consciousness. The reverse process of the production of motion by consciousness is equally unpresentable to the mind. We are here, in fact, upon the boundary line of our intellectual powers, where the ordinary canons of science fail to extricate us from our difficulties. If we are true to these canons, we must deny to subjective phenomena all influence on physical processes. The latter must be regarded as complete in themselves. Physical science offers no justification for the notion that molecules can be moved by states of consciousness; and it furnishes just as little countenance to the conclusion that states of conscious-

ness can be generated by molecular motion. Frankly stated, we have here to deal with facts almost as difficult to be seized mentally as the idea of a soul. And if you are content to make your 'soul' a poetic rendering of a phenomenon which refuses the yoke of ordinary mechanical laws, I, for one, would not object to this exercise of ideality. Amid all our speculative uncertainty there is one practical point as clear as the day—namely, that the brightness and the usefulness of life, as well as its darkness and disaster, depend to a great extent upon our own use or abuse of this miraculous organ. We now stand face to face with the final problem. It is this. Are the brain, and the moral and intellectual processes known to be associated with the brain—and, as far as our experience goes, indissolubly associated—subject to the laws which we find paramount in physical nature? Is the will of man, in other words, free, or are it and nature equally 'bound fast in fate?'

This, then, is the conclusion of our most famous, most eloquent, and most accomplished teacher of physical science—that *consciousness* is a condition of organisation; that the Conscious Self is only the aggregation of various states of Consciousness; that "You" and "I" are nothing more than masses of brain and nerves; that it is an unsolved and probably insoluble mystery how brain is conscious, although bone and muscle are not conscious, and by what process the sense of personal identity and the conviction of individuality are established. He sees nothing, feels nothing, perceives nothing, other than brain, therefore he knows nothing and not knowing he dares not affirm. With this negation he bids us be content. But if we cannot be content to be merely brain, he graciously bids us amuse ourselves with a poetical conception of Soul in addition to brain and make ourselves as happy as we may in this fool's paradise.

The argument is fairly stated, and boldly as fairly. Let us commend his moral courage, and, may I add, strive to emulate it by the like bravery.

PSYCHOLOGY joins issue with him in all of this. We say that brain and nerve are not "conscious." The nerves convey molecular motions; *they* do not feel them. The brain has no sense of injury to itself. Even if it were

self-conscious, a combination of consciousnesses will not make individuality, that is to say, will not give us *memory* nor account for our knowledge that the consciousness of to-day and twenty years ago was the same. How can that be the work of a structure, every particle of which has changed during those twenty years? But we do not rest our case upon a mere denial of the Scientist conclusions from some assumed functions of brain and nerve. We do emphatically dispute those inferences. We *do* deny that there are no proofs of an individual entity other than the brain. We boldly assert that there is *evidence*, abundant and cogent, that *something* exists, as a distinct and definite entity other than the brain, which constitutes the individual "I" and "You,"—call it Soul or by any other name. We assert that this individual entity exists as a real being capable to act, and often expressing itself in action upon the external world, beyond the range of the bodily structure and without its agency. We assert that this is demonstrated by a long series of phenomena, many of which are familiar to all of us, therefore uncontested by any. Some are of less frequent occurrence and, therefore, are subjected to some doubtings; while others again, being rare and of strange aspect, are met with incredulous denial—by those who have never seen them.

Upon this issue Psychology takes her stand as opposed to Materialism. I use this term Materialism with reluctance, only because I know of none that would convey the same meaning to my audience. But it is an inaccurate and misleading term. It means the recognition of matter as constituting the perceptible Universe, and in this sense we are all Materialists. It is used here to describe the doctrine of those who deny that there is any intelligent existence that is not molecular, and, when applied especially to the Mechanism of Man, that the structure is composed of anything more or other than the brain and the body that are visible to us. The employment of this term at once

raises the question, "What is matter?"—and thus, as all are not agreed upon that point, an opening is made for a fight under false colours on one side or on both.

Some use the term "Matter" in a very vague sense—as being whatever can be mentally conceived. Science demands a stricter definition. Whatever is *perceptible* to us is to us "matter"—I mean perceptible to any sense. As molecular structure is the only combination of atoms perceptible to us, so "matter" is whatever is made of molecules. All other combinations of atoms, being wholly imperceptible to us, are to us non-material. But not, therefore, do they the less exist, nor is their existence necessarily unknown to us. We can learn their existence, and something of their qualities, by observing their action upon the molecular matter that is perceptible to us.

The term SOUL is open to a difference of definition, but not to the same extent. There are infinite varieties of conception as to what Soul is or may be; but there is no difference as to *the thing* intended for discussion, or as to the precise issue that is raised. It is agreed on both sides that the question of Soul is—if there be in the Mechanism of Man an entity—a being—a structure—not formed of molecules and therefore not perceptible by any human sense, but formed of some other of the infinite atomic combinations with which creation is doubtless thronged—and which non-material because non-molecular *thing* is the MAN—is the SELF—is I—is YOU—and of which thing the molecular body is merely the material mechanism clothing that Soul—the necessary medium for its communication with the molecularly constructed world which is its present dwelling.

This is our contention. Let there be no mistake about it. *This* is the doctrine of Psychology. If it be not a true doctrine, Psychology is a false Science. Professor TYNDALL has raised the question fairly. He denies the existence of

Soul, and consequently of the Science that relates to it. But he is unfair in this—that in his splendid discourse he tells his audience the truth, but not the whole truth. He says that Soul is merely a poetical fancy—that there is *no* proof of its being—that he and his brother Scientists can discover nothing beyond nerves and brain and can find in these a sufficient cause for all they see of mental action. He does not go on to tell us what he must well know to be *the truth*—that, although he and his brother Physicists can find in their dissecting rooms and laboratories no tangible proof of the being of Soul, there are phenomena—some undisputed and indeed incontestable; some contested, but asserted by observers as competent as himself—*facts* that are wholly inconsistent with his theory of Materialism and impossible to be explained by it. As a truthful man, he should have told his audience that there is a numerous, an intelligent, an observant, a reflective, a calm judging body of men who have arrived at less degrading conclusions as to man's structure—conclusions not based, as he would represent, upon unproved dogma, or on our eager hopes, or high aspirations, but arrived at by precisely the same process as that which has conducted him to *his* discoveries—the process of observation and experiment—by the noting of facts and phenomena and tracing the existence and the characteristics of imperceptible non-molecular agents in their effects upon things that, being molecular, are perceptible to the human senses. The Professor may differ from the Psychologists in their conclusions, and he may dispute their facts; but it is neither fair nor generous to ignore them, and to treat his theory as if there were no other side to it than the melancholy one he presented to us—of automatism and annihilation.

In all former controversies upon this and kindred question the Scientists have protested, with reason and justice, against the practice of combating facts with *à priori* arguments and answering *evidence* by opinion. Hitherto they have

echoed the scornful exclamation of Galileo, "But it moves for all that." Opinions and arguments may be suppressed by logic or by persecution. But a fact is immortal. It is still a fact, though all the world refuses to recognise it. Its existence does not depend upon what this man or that man thinks or desires — no amount of denunciation, or protest, or ridicule, or neglect—no law or abuse of law—no prosecutions nor imprisonments—no Judge and no Jury—no prejudice—no prepossessions can put it down, or extinguish it, or make it other than it is—a FACT.

Yet, strange to say, the Scientists, who were the first to proclaim this great truth when *their facts* were denounced by dogmatism, are now the foremost to wield this weapon against other asserted facts that conflict, or appear to conflict, with their own dogmas. "We have come to the conclusion," they say in effect, "that Soul is a myth—a dream—that, as it cannot be, it is not. There is no place for it in the human organism that we can find—there is nothing in man's mechanism that our theories cannot explain. Theology teaches Soul and Immortality, but Theology is a visionary creed. These are but harmless dreams of poets and sentimentalists, and so they may pass with a contemptuous smile. The Psychologists, who hitherto have asserted Soul from their inner consciousness, and supported it by argument of possibility and probability alone, we can afford to treat as learned visionaries. But otherwise it is with those who dare now to assert that they can prove the existence of Soul by *facts* and phenomena, precisely as our own Sciences are proved and who challenge us to the examination. If they are right we are wrong. If they can produce a tithe of the evidence they boast—if they can prove but a fraction of their assertions, our doctrine of materialism is scattered to the winds. That would not much concern us ; but we shall be discredited with it and the laugh of the world will be against us. How shall this catastrophe be averted ? There is but one course for us. We must deny the facts. To

discredit the facts we must discredit the witnesses. We must give them bad names—fools of their senses, deluders, deluded. If we are reminded that many of them are men of science and accomplished observers, or men of business, or men trained to try and weigh evidence, in all respects our equals and in many respects our superiors, we must declare that they are suffering from “diluted insanity,” the victims of *prepossession*, the dupes of their senses, that they do not see with their eyes nor hear with their ears. If it be said that the outside world may possibly be inclined to listen to them, our course is clear. We must vilify the subject and make Psychology unpopular. We must stigmatise the seekers after Soul as rogues and vagabonds. We must proclaim the believers in Soul insane or idiots. If social persecution fails, then legal prosecution, relying on the prejudice and prepossession we have invoked. If we cannot put down that irrepressible pseudo-science Psychology, we can at least limit the number of Psychologists; we can deter others from becoming its disciples, and scare them from investigation of facts and phenomena that threaten the fabric of our doctrine of materialism and the permanency of our personal fame. True, there is some awkwardness in their challenge to us to see and experiment for ourselves. But let us be equal to the occasion. We have only to contend by argument *à priori* that, according to our notions of nature the facts *cannot* be, and the conclusion is clear; therefore they are *not* facts and therefore we need not give time and thought to their investigation. We deny Soul to be and therefore we should be simply discrediting ourselves by looking for it. If we saw, we would rather say our senses deceived us than confess that we had come to wrong conclusions upon insufficient premisses. Be assured it is easier to put down opposition by ‘Phoo, phoo,’ and ‘Fie, fie,’ than by evidence and discussion.”

During the past year Psychology has been publicly challenged by another philosophy—not new, though taking a

new name. It calls itself *Agnosticism*, but it is intimately allied with *Materialism*. It asserts that we have, and can have, no knowledge but that which the senses bring to us; and that even the knowledge so conveyed is dependant upon so many conditions that it must be accepted with hesitation. So far the Agnostics are right. But they proceed to deduce from this that whatever does not admit of sensual proof is to be rejected as unknowable as well as unknown. They, too, fall into the same fallacy as the Materialists. They forget that there are other means by which knowledge may be obtained. We may learn the existence and qualities of many things imperceptible to the senses by their action upon the matter the senses are formed to perceive, and our knowledge of these imperceptible forces is as real and practical as if we had direct intelligence of them through the senses. The Agnostics say that Psychology is merely a dream because the things with which it professes to concern itself—*Mind* and *Soul*—being imperceptible by the senses, are unknowable. The answer of Psychology to Agnosticism is that, although Mind and Soul cannot be seen, heard, felt or tasted, their existence is proved by their operation upon the organic molecular structures our senses are formed to perceive. The Agnostics say that they can recognise no natural forces other than those which direct and control inorganic matter. Psychology contends that there are forces and laws, directing and controlling organic structure, different from and often opposing the inorganic laws; that these can be discovered by observation of their action upon that structure, and, the intelligence thus obtained is knowledge as real as any that the senses bring to us of external molecular existence. We say, therefore, that Psychology is as real and soundly based a Science as any other, if only it be rightly pursued,—by observation and experiment instead of metaphysical argument and ingenious conjecture.

Such is the precise condition of the controversy between

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Materialism and Psychology at the commencement of this 4th Session of the Society. But such misrepresentations of our scheme are no longer practicable. Our position is now distinctly defined for us by Professor TYNDALL himself. He has drawn the precise line at which Physical Science confesses that there is an end to her researches, and where Psychological Science proclaims with pride that she begins hers. Of course, if he is right, if there be nothing in the Mechanism of Man but the material molecular structure, we must confess that our Science is as baseless as the Scientists declare it. The writers in the *Nineteenth Century* have exhausted intellectual skill in an endeavour to prove, by *argument* alone, that Soul exists as part of the human structure—a veritable *being* other than the molecular body and separable from it. But it must be admitted that they have done nothing more than prove that Soul is an aspiration of humanity—that it *may be*—that it *ought to be*—but not that *it is*. To prove that *it is* has consequently become the proper business of this Society. We take our stand upon a clear and definite platform, with a distinct and definite duty. Our programme is contained in a few sentences. Are there *any facts* that *prove* the existence of soul, or point to its probable existence? If Soul cannot be proved *argumentatively*, can it be proved *experimentally*? It is our belief that *it can*. It is our business to prove it, or at least to search for proofs, and try their worth, and trace the conclusions to which those truths conduct.

With this great and glorious mission before us we ask all who approve its object—all who desire to know what they *are*—what they *will be*—to promote them by joining the Society.

In accordance with this grand purpose of our existence, our first object is the gathering together from all authentic sources reports of facts and phenomena that proceed, or appear to proceed, from the action of that something other than the material mechanism—that intelligent force—call

it *Mind* or *Soul*—call it mental impulse or psychio force—by which the material mechanism of the body is moved and directed. Already we have brought together a considerable number of very interesting and valuable reports of such phenomena, which we are about to print, not merely for reading and preservation, but in the hope that other observers may be induced to send them still more abundantly. It would be impossible to exaggerate their value, for they are the solid foundations of fact upon which alone a secure Science of Psychology can be built up and with which alone we can hope to combat successfully the dark and degrading creed of Materialism. Thus only can we hope to restore by Science the belief in Soul which Science has shattered. So far our work has proceeded successfully. Seeing how high and important to the welfare of the world is the object after which we strive, this Society, although numerous enough for economical work, has not yet enlisted the support which would enable it to carry on that great work as it deserves to be pursued. Our meetings show no lack of interest in it, for this room is usually crowded. Our papers are various and instructive and our discussions vigorous. In these respects we can compare advantageously with any other scientific society. But we desire to enlist more members that our usefulness may be extended much more. We should like to print our proceedings but cannot without the funds that numbers only can supply. We have one experimental committee. We should have three or four, occupied in different branches of the inquiry. But this would be attended with greater cost than we can afford. We ought to print *all* our papers. But those only can now be printed of which the writer pays the expenses. If our numbers were doubled, it is not too much to say that our usefulness would be quadrupled.

In pursuing our researches and experiments, we are not unconscious of the difficulties that attend them. We recognise to the full the influence of “prepossession” and

"dominant ideas" so truly asserted by Dr. CARPENTER. To none is their disturbing effect upon evidence better known than to myself. It is daily under my notice. Witnesses, the most honest in intent, the most truthful in design, see, or fail to see, according to prepossession. They saw with their prepossessed minds, not with their natural eyes. They looked not to see what they could find, but to find something they hoped to find, and found it. Or they desired not to see something, and they did not see it—though plain before their eyes. Peering through the fog of a dominant idea, they could see nothing at all, or nothing clearly. I repeat again and again the wise saying that cannot be too often repeated, "Men do not believe what is true, but what they wish to be true." The senses are the slaves of the mind, and the mind, (as we discover in dream when it is unaided by the senses), cannot tell us what is objective and what is subjective — if the impression is brought from without or created within. It is a humiliating truth that educated minds are more the victims of prepossession than the untaught mind, whose perceptions are often singularly acute and accurate. But of all minds the scientific mind is the most liable to be enslaved and blinded by prepossession and by "dominant ideas," because it is most preoccupied with preformed opinions and theories. There is not a more notable instance of this than Dr. CARPENTER himself, whose emphatic warnings to beware of them are doubtless the result of consciousness of his own foible. An apter illustration of this common human weakness there could not be. The characteristic feature of his mind is *prepossession*. His subjection to "dominant ideas" is apparent in all his works. It matters not what the subject, if once he has formed an opinion upon it, that opinion so *prepossesses* his whole mind that nothing adverse to it can ever after find admission there. It affects alike his senses and his judgment. He can see nothing that conflicts, or appears to

conflict, with his dominant idea. He has a microscopic eye for anything that seems to favour his prepossession. The effect of prepossession upon the senses is either to paralyze them, so that they cannot perceive anything that conflicts with that prepossession, or to distort every object presented, or to make the victim perceive a great deal more than is actually presented to him. Dr. CARPENTER is a striking but by no means a solitary instance of mental blindness and obliquity produced by *prepossession*—he is only one of the most conspicuous. They who are familiar with our Courts of Law are aware that of all witnesses the least trustworthy are scientific witnesses—experts as they are called. It is a vulgar error that attributes less of honesty to them than to other witnesses. Their untruthfulness is, in fact, the result of prepossession. They go into the witness box possessed with theories, and, unconsciously perhaps, they measure the facts by their theories. They cannot or will not recognise facts that tell against them. They transmute or magnify any fact that will support their preformed views. So it is with Dr. CARPENTER. Nobody will deny his honesty. But it is impossible to deny that he is the slave of *prepossession* and *dominant ideas*. Psychology, from its very nature, is peculiarly subject to these malign influences. Therefore Psychologists will do well to be warned by so eminent an example as that presented by Dr. CARPENTER, and in pursuing their own researches let them be ever on their guard against prepossessions and dominant ideas that will be as fatal to sound and impartial judgment with them as they have proved to be with him.

The work of the last Session extends over a very wide range of subjects. Mr. MASSEY favoured us with a paper on "Some Applications of the Theory of Unconscious Cerebration." To Professor PLUMPTRE we were indebted for two very interesting and instructive essays on "The Human Voice considered Psychologically." Mr. CHARLES BRAY contributed

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a thoughtful paper on "Cerebral Psychology," and another on "Natural Law, Automatic Mind, and Unconscious Intelligence." One of our Honorary Members, Mr. JAMES CROLL, F.R.S., favoured us with perhaps the ablest papers over read in this room on "The Psychological Aspects of Molecular Motion," which all who did not hear should read. To Mr. GEORGE HARRIS we were indebted for a treatise on "Certain Psychological Peculiarities observable in the Hereditary Transmission of Endowments and Qualities." "A Record of Abnormal Personal Experiences," communicated through Mr. C. MASSEY, excited much discussion. A remarkable paper "On the Phenomena of Artificial Somnambulism and Electro-biology" was contributed by Mr. E. H. VALTER, and your PRESIDENT read two papers, one on "Some more Phenomena of Sleep and Dream" and the other on "The Psychology of Wit and Humour." This is a goodly list, and, thanks to the liberality of the writers, several of them have been printed and may be read with profit. We believe that the fruitful past is the promise of of an equally fertile future.

The subjects treated of during the last Session have paved the way for others of still greater moment which we hope to bring under discussion in the course of the present Session. To promote that which is the principal purpose of the Society—the communication of personal experiences of psychological facts and phenomena—the Council have determined to devote some meetings to discussion alone, without the introduction of written papers, and some very important subjects will thus be treated. Memory, the Will, Dream, Somnambulism, Insanity, Trance, and other abnormal conditions of the human mechanism, claim to be considered thus, where facts may be contributed by those who take part in the debate, and the theories of those who have thought about them may be tried and proved by the free interchange of opinion.

With our prospectus before the world, it is, perhaps
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scarcely necessary to say that this Society has nothing to do with any *ism* of any kind. It belongs to no creed, nor sect, nor party. It is not realist, nor idealist, nor materialist, nor spiritualist, nor positivist, nor agnostic. It is only an earnest and honest seeker after the truth, the whole truth, and nothing but the truth. Its object is to learn what *Man* is, what *Mind* is, what *Soul* is. It inquires if the be-all and the end-all be indeed here "upon this bank and shoal of time," if we must "leap the life to come," or may look to the hereafter as a grand certainty. I hope we have, all of us, the courage of our opinions, even as Professor TYNDALL has. As Psychologists, we investigate every fact and phenomenon, reported to us on good authority, that has an apparent connection with the *Mind* or *Soul* of Man—regardless alike of abuse, of ridicule and of sneers. But it must be well understood that our researches are thus limited. We do not concern ourselves at all with the *supernatural*. It is not within our province. We list to Nature only—to the *living* man—to the *actual* world. If we cannot find in these the facts and phenomena that teach us what Mind is, if Soul be, and what it is, then it is no part of our mission as a Society to seek further for them. Nor is there need to do so. Already we have found an ever-widening field for research in the world that is about us—*facts* full of interest—*phenomena* replete with instruction—vast in number and variety, observed by hundreds of those with whom we are dwelling and in daily intercourse, but which have remained unreported and unknown because there has been no centre to which they might be contributed and no machinery for their collection, preservation, and collation for the advancement of *Science*.

That need is now provided for. Ere long it will be seen how plentiful is the supply of information and what overwhelming evidence there is that Psychology is a true Science—based upon as broad and secure a foundation of fact as are any of the Physical Sciences.

Again I invite the active co-operation of all, who are not content with the position publicly assigned to Man by the Scientists, in the great and good work this Society is formed to prosecute; of seeking if *Science* may not restore Man to the position from which Science has degraded him.

PSYCHOLOGY PROVED

BY

PHYSICAL SCIENCE.

*(Abstracted from a Paper by JAMES CROLL, ESQ.,
F.R.S., President of the Geological Survey of
Scotland. Read to the Psychological Society of
Great Britain, Thursday, March 15, 1877, by
the PRESIDENT.)*

MR. JAMES CROLL, of Edinburgh, one of our distinguished Honorary Members, is desirous to submit to the consideration of the Psychological Society his theory of "What determines Molecular Motion," so far as it bears upon the great Science to the advancement of which this Society is devoted. But I regret to say that he is labouring under a physical infirmity of sight, which prevents him from writing, as otherwise he would have preferred to do. In these circumstances he has supplied me with materials for presenting in a condensed form the very important conclusions at which he has arrived and the clear and sustained argument by which he supports them. His profound and original views were originally given to the world in a paper which

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appeared in the *Philosophical Magazine* in the year 1872. But in this essay the bearing of the question upon Physics is mainly treated of. That portion of it, important as it is, possesses but a secondary interest for this Society and will require no more reference than will be sufficient to make the psychological aspect of the subject intelligible to the members. Hence it is here much abbreviated and a portion of the language is necessarily my own; but I hope to present a faithful outline of his argument.

The laws of Molecular Motion are now generally accepted as being the ultimate problem of the Universe. Molecular Physics is the Science upon which all the other Physical Sciences will ultimately converge.

Molecular Physics resolve themselves into two great problems.

First, what is the constitution of the ultimate atoms that make molecules and of the molecules that make matter?—for, be it observed, a molecule is only an aggregation of atoms.

Second, what are the laws of their motion?

But a grand fundamental problem lies behind these two problems, to which attention will be directed presently.

The solution of the first problem—what is the ultimate constitution of matter?—has not even been conjectured, much less arrived at. But some facts leading to it are now generally accepted as proved. The molecule is *not* the ultimate particle. There are atoms of which molecules are composed. Molecules made up of atoms combined in different proportions doubtless present the same diversities of shape and character as do the various combinations of molecules of which that we call “matter” is constructed. Our senses are fitted to perceive only that combination of atoms which constitutes molecules, and we call the things so constructed “matter.” Beyond all doubt there are infinite varieties of structure formed of other combinations

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of atoms than that which forms "matter," and of whose existence, being wholly imperceptible to any sense, we are and must be entirely unconscious, at least so long as we can obtain perceptions of the external world through the medium of the senses alone. If ever there be for us, here or hereafter, a condition in which we can perceive some or all of the non-molecular combinations of atoms, then a wholly new and strange existence—a new world, in fact—would be opened to us here, in our very dwelling place, all around us and above us.

The second problem, however, is that which has most invited the investigation of Mr. CROLL, namely, what are the motions of molecules? Upon this I quote Mr. CROLL himself.

The second problem, we have seen, refers not to the nature of the molecule, but to its motions. Now in regard to all physical change or motion, no matter what the nature of that change or motion may be, there are at the very outset two fundamental questions which suggest themselves: (1) What produces the change—causes motion? (2) What determines or directs it?

In regard to the first question, there is no diversity of opinion. All agree that what produces change or causes motion is Force. The second question, however, viz. what determines or directs the motion, is not so easily answered. This question is not only the more difficult of the two, but also by far the more important.

All physicists agree that what is called Physical Law is just the expression of the manner in which forces act in the production of their effects, or "the paths along which they travel to their particular results," as Mr. Lewes expresses it. (a) In the production of all physical phenomena we have, therefore, two distinct elements, viz., force, and the way or manner in which force acts—force, and the paths along which it travels, so to speak—or, in other words still, Force and the Laws of Force.

One of the most important results of modern physical inquiry has

(a) Comte's Philosophy of the Sciences. By G. H. Lewes. Section V.

been to show that the various phenomena of Light, Heat, Electricity, &c., are but different modifications in the action of the same forces. When the forces take one path, we have Light; taking another path, we have Heat; another produces Electricity, and so on. Now it will be observed that the fundamental question is not, what is the particular force in action, or upon what does its exertion depend, but rather what is it that causes the force to act in the particular manner in which it does act? In other words, what determines the paths along which it acts? Physical phenomena are produced in general by the motion of the molecules or of the atoms of bodies; now the great question is not simply what produces the motion, but what produces the particular kind of motion? It is not what gives *existence* to the motion, but what *determines its direction*? This is evident, because the particular phenomenon, regarding which our inquiries are concerned, does not directly depend upon the mere existence of the motion, but upon its special direction or determination. The same exertion of force which produces one phenomenon would probably produce any other phenomenon, were determination in the proper direction given to it. It is the determination of the force which accounts for the particular phenomenon; the mere *exertion* of force may be supposed to be the same in all phenomena.

The first proposition is, therefore, "That the *production* of Motion and the *determination* of motion are absolutely and essentially different."

By determination of motion he means *its direction to a special end*.

Force may produce motion—but force does not determine the direction of that motion. All the motion that goes to inorganic or to organic structure is a definite motion. It is directed to a specific purpose. Say that it acts in obedience to law. We mean by this only that the force that causes the particular motion has been determined by something else. But that determining force must have been itself determined. Thence Mr. CROLL deduces his second proposition.

(2.) *The action of a force cannot be determined by a force, nor can motion be determined by motion.*

This may be demonstrated thus. The act that directed the act must exist in time and space, and bear a certain relationship to time and space, and something must have given it that relation. If it be contended that a prior act directed this act, that prior act must have been itself directed, and so infinitely.

It may be proved in like manner that motion cannot *determine* motion. It can impart motion, but it cannot *direct the motion* to a specific purpose, as, for instance, to construct a brain, with its millions of fibres.

Hence the mystery is, not what are the forces that *move* atoms and molecules, but what is it that *guides* and *directs* the motions of atoms to the formation of molecules, and of molecules to the formation of organic structure. When an atom or a molecule is set in motion, the number of directions in which force may move it is infinite. But out of this infinite number of different paths open to it, what is it that directs the force to choose the right path—that is to say—the path to the definite purpose?

Here, again, I cite Mr. CROLL himself:

It is asserted that force is self-directing. This is simply getting into confusion again. What conceivable idea can be attached to a self-directing force? Is force a something which not only acts but determines for itself how and when it shall act? In what conceivable way can force direct its own path? A molecule has to be moved into its proper place in an organic form; a force gives motion to the molecule; but out of the infinite number of possible directions in which the molecule may be moved the force moves it in the right direction. What is that something which thus guides the force? The force guides itself, it is replied. Be it so; but in what way does the force direct or guide itself? What is the nature of that something in virtue of which the force directs its actions? It is supposed that that something belonging to the force which thus guides and directs its action is itself a force? Does the force direct itself by means of a force? if so, then we are back to our old absurdity of a force determining a force. And if this directing something is not a

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force, what is it? But if this something is not a force, it follows that there is something else to be known than mere force before we can penetrate the mystery of nature.

Endeavour to conceive of a force directed by a force, and you will find the determination of the force to result, not from the supposed force, but from the *way* in which the actual force acts.

Apply this to the structure of organic form, and what is the result? Says Mr. CROLL:

We have been accustomed to speak of organic forms being built up particle by particle by the play of molecular forces; and probably most of those who know little about science imagine that scientific men attach some clear and definite idea to such a statement. They naturally conclude that the scientific physicist understands in some way or other how, and in what way, these forces may be conceived to build up the structure; and they no doubt would feel surprised were they told, what in reality is the plain truth, that the physicist who uses those terms knows just as little about how the play of forces can build up an organic structure as he does himself. The idea has gained a footing that the thing is done in some way or other by forces: and although in the mean time we cannot comprehend the manner in which it is done, yet we imagine that at some future day all will be plain.

His third proposition is "*That all the Energies and Forces of Nature are notably the same, and differ only in regard to their modes of operation.*"

This proposition he illustrates thus:

This follows as a consequence from the principle of the Conservation of Energy, viz., that the sum total of the energies in nature remains constant, the amount neither being increased nor diminished.

Suppose now that two substances (say, oxygen and hydrogen) combine chemically. Heat is evolved as a consequence. The energy in the form of heat is derived from the energy in the form of chemical combination. The energy which disappears in chemical combination reappears as heat. We have first chemical energy

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and then heat; not first annihilation of chemical energy and then creation of heat. The energy which now appears as heat is the self-same energy which previously existed as chemical energy. The energy has only changed its form, and nothing more.

Suppose the heat to be applied to move a machine and to perform mechanical work. What appears as mechanical energy (mechanical motion) disappears as heat; and the energy stored up potentially as work performed, say, in the raising of a weight, is the self-same energy which previously existed as chemical energy and then as heat. The same holds true whatever may be the number of the transformations. Chemical combination will produce an electric current; the electric current will produce magnetism; and the magnetism will produce motion in a machine; and the machine will generate heat or perform work. Here we have the energy assuming in succession five or six different forms. While the particles are combining we call the energy chemical; when the electric current is produced we designate the energy electrical; when magnetism is produced we designate it magnetic; and when the machine is in motion we call it mechanical, and so forth. It is the same energy under all these various forms. The only difference between chemical, electric, magnetic, and heat energy is merely in the mode of operation. The difference lies, therefore, not in the force or energy itself, but in its determinations. If we regard heat, light, electricity, magnetism, chemical action, &c., as but different modes of motion, as they in reality probably are, then the difference between chemical action and heat, or between heat and electricity, or between electricity and magnetism, or between magnetism and mechanical motion, &c., depends wholly on the *cause of the determination of motion*. The difference does not lie in the mere exertion of force, but in the *way* or *manner* in which force is exerted.

Turning to the theories of Life, Mr. CROLL admits frankly that vital force is only one of the physical forces. He says :

Evidently the vital energies of the plant and animal are derived from the chemical affinities of the food and nutriment which they receive. Vital force is chemical force transformed. The same remark holds true of the mechanical and other physical energies of the body. The energy by which the arm is raised or by which the heart beats is derived from the food. Animal heat is derived from chemical combination.

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So far he agrees with the Materialists. But at this point he joins issue with them: "Are these forms of energy—some or all of them,—sufficient to account for the phenomena of organic nature and of life?"

He answers the question thus: They are *insufficient*, because they do not account for the *objective idea in nature*. He says:

Whatever may be one's opinions regarding the doctrine of Final Causes and the evidence of design in nature, all must admit the existence of the objective idea in nature. We see everywhere, not only exquisite order and arrangement in the structure of plants and animals, but a unity of plan pervading the whole. We see, in endless complexity, beauty, and simplicity, the most perfect adaptation of means to ends. The advocates of the physical theory are at least bound to show how it is probable that this exquisite arrangement and unity of plan could have been produced by means of chemical and physical agencies.

Let us briefly consider what really has to be explained and accounted for. Take, say, the leaf of a tree. The leaf is not moulded by some external agency into its particular shape, but is built up molecule by molecule. The form and structure of the leaf is the result of the arrangement and disposition of the particles of which it is composed. The thing to be accounted for is not what moves the molecules or particles in its formation, but what guides, directs, or determines the motion of these particles. The leaf could not be formed did not each particle move in the right direction and stop at the proper time and at the proper place. Each molecule occupies its own special position in the leaf; consequently no two molecules in moving to their positions can take the same path. What, then, determines the particular path for each molecule? or rather, what determines the motion of each molecule along its particular path? The mere motion of the molecules is produced by force; but what directs or determines this force to move each particle along its special path? But the mystery is deeper still. Not only are the paths of the molecules different, but they must all be adjusted in relation to one another; for it is to the proper adjustment of the paths that the form of the leaf is due. In other words, the motion of each molecule must be determined according to the objective idea of the leaf.

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But the whole tree is built up of molecules, as well as the leaf. The molecules which form the branch must be differently determined from the molecules forming the leaves; and each molecule of the branch must take a path different from all the other molecules of the branch; but the motions of all the molecules must be determined according to the objective idea of the branch. What holds true of one branch holds true of all the other branches; and what holds true of the branches holds equally true of the trunk, and of the roots, and of the whole tree. Each particle must be determined not only in relation to the objective idea of the particular leaf or the particular branch to which it belongs, but in relation to the objective idea of the tree. In the formation of the tree each molecule must move along its special path, but the paths must be so adjusted to one another that a tree shall be the result. But this is not all; the molecules must move and adjust themselves in relation to the idea of a tree of a special kind. The molecules forming, say, an oak tree, must move in relation to one another in a different way from those forming a beech tree or a pine. But however diversified may be the motions of the molecules in the different species of trees, yet, notwithstanding, all must move in relation to the general idea of a tree. And what holds true of trees holds equally true of every form of plant-life on the globe. And what holds true of the vegetable kingdom holds equally true of the animal kingdom. Each plant and each animal has not only its own particular form, but it has the form of the species to which it belongs—and not only this, but the form of the genus to which the species belongs—and not only the form of the genus, but the form of the family, order, class, and kingdom to which the genus belongs.

Natural selection will not explain this objective idea. Mr. DARWIN's theory cannot, from its very nature, explain the mystery of the organic world. He does not trace the *directing cause* of molecular motions. Further:

But there is not merely a unity of plan to be accounted for, but also a unity of purpose. Things in nature are not only related to one another in form, but they stand related as means to ends. And this relationship is as all-pervading as that of form. There is not an object in nature that does not stand in the relationship of a *means* to something as an *end*. And there exists a unity in the ends as well as in the forms. All molecular motions must consequently

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have this double relationship of plan and purpose. How, then, is all this order and unity both of plan and purpose in molecular motions to be accounted for?

Mr. CROLL next considers molecular motion in relation to the *forms* of objects. All things in nature are built up, molecule by molecule, through molecular motion. Energy, or force, transports the molecules, but *what determines the position in which they shall be placed?* The form assumed by them is not due to the energy that brings the material, but to the power that directs and determines that energy. The *force* no more regulates the *form* than the labourer who carries the bricks shapes the house. Do chemistry and physics explain this? The Materialists attempt a solution by calling it the vital force, the directing force. Vital force is, they say, the result of the food we eat—a mere chemical product, in fact. The Materialists deny that there exists in organic being any form of energy differing from that to be found in the inorganic world. And it is upon this that Psychology challenges Materialism.

Mr. CROLL then reviews the physical forces especially and shows their insufficiency for organic structure :

Molecular physics has made great advance of late years ; but it has not made much advance in that particular direction which can be of service in explaining how molecular motion in organic nature is determined. It is thought, however, by the advocates of the physical school that, although at present we are unable to explain how organic nature can be built up by the play of the ordinary chemical and physical forces, yet at some future day, when we shall have come to know far more of molecular physics than we do at present, then we may be able to explain the mystery. This is the cherished hope of modern Evolutionists, and of the advocates of the physical theory of life. But it is a mental delusion, a dream which will never be realised. A little consideration might satisfy any one that Chemistry and Physics will never explain the mystery of nature.

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And thus he sums up his argument :

It must now be obvious that nothing which can be determined by the comparative anatomist, no biological researches, no microscopic investigations, no considerations regarding natural selection or the survival of the fittest can solve the great problem of nature : for it lies in the background of all such investigations. The problem is molecular. From the hugest plant and animal on the globe down to the smallest organic speck visible under the microscope, all have been built up molecule by molecule ; and the problem is, to explain this molecular process. If one plant or animal differs from another, or the parent from the child, it is because in the building-up process the determinations of the molecular motion were different in the two cases ; and the true and fundamental ground of the difference must be sought for in the cause of the determination of molecular motion. Here in this region the doctrine of natural selection and the struggle for existence can afford no more light on the matter than the fortuitous concourse of atoms and the atomical philosophy of the ancients.

It may be permitted to us to draw the conclusion from this admirable paper.

It almost demonstrates as a fact in Nature and Science that the Universe is not wholly material—probably the material part being the least part of it. It proves scientifically that *spirit*—by which I mean nothing more than *non-molecular being*, affirming nothing whatever what that being is—underlies, surrounds, possibly permeates, all molecular matter—that the forms of life and being are not determined by chance nor by the fortuitous combination of atoms, but are moulded by forces that are not the blind physical forces, but some power with a plan, which determines organic structure and perhaps all mundane structure. Mr. CROLL's paper proves that matter, which is the proper study of the chemists, is not, as the Materialists would have it, the all in all, but that there is *behind the world of matter* and probably underlying it a

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cosmos of spirit—a Universe of Soul—whose investigation is the proper province of Psychology. While the Materialists are usefully toiling to learn the laws of those physical forces that mechanically move the dead unconscious matter which alone they recognize, we Psychologists are not less usefully employed in exploring the facts and phenomena of living conscious being, the forces by which it is moved, and that yet greater force which determines the direction of all the forces of nature, and builds up that world of organic and inorganic matter which the Materialists are analysing. We thank them for that good work. We cordially recognize the great service Physical Science is doing. We complain only that Physicists will not be content with labouring in their own province and leaving Psychology to Psychologists, but that, without seeing or knowing aught of its facts and phenomena, they venture to pass judgment upon another branch of science of which they confess themselves wholly ignorant. Psychologists justly complain, not that the Materialists refuse to recognise any other than the material—that is, the molecular—form of being (for this they have a right to do) but that they refuse to hear any evidence or any argument that goes to prove the existence of such a form of being; that they insist upon pronouncing a verdict upon that which they have never seen, nor tried, nor studied, although they would be the first to rebuke the presumption of any Psychologist who, being ignorant of electricity or astronomy, should dare to deny the phenomena they who have seen assert and not content with denial should proclaim those who *have* witnessed them to be fools or rogues. If their conviction be that Man is a mere machine—Soul a myth—future life a fable,—they are welcome to their degrading and despairing creed. Mischievous as it is to society by its annihilation of all hope for

mankind here and hereafter—by the utter degradation of humanity it involves—there is yet no desire on the part of those who hold a nobler faith, who recognise a God—a *Soul*—an *Immortality*—to revive against the Materialists the slumbering statutes that make *their* doctrines criminal. Psychology has a firmer faith in its own principles than to resort for self-protection to prosecutions and prisons. It leaves to the High Priests of Science in this nineteenth century to take up the weapons of persecution which the Priests of Theology have long since cast away. We are content to protest with tongue and pen against the abuse lavished by the Materialists upon those who, standing upon the same platform of Science with themselves, find in Psychology proofs of a higher destiny, dawnings of a brighter day, based not upon faith or dogmatism but upon positive facts in Nature, such as those so brilliantly expounded by a brother Scientist in this paper. Upon this standpoint it is that we challenge the Materialists to combat—not with police courts, and penalties, and prisons—not with prosecutions and abuse—not by calling their opponents impostors or dupes, rogues and vagabonds—but by experimental appeal to Nature and Science—by examination, and trial, and test.

Mr. CROLL asks the Materialists in this paper if their own theory of molecular motion, as the constructive force of the Universe, does not in itself proclaim the existence of some other intelligent directing force behind the Physical Forces that *determines with a plan* the very motions they are themselves exploring?

Then come the questions :

What *is* this Intelligent determining power? GOD.

What is this underlying formative force that moves and moulds matter? SOUL—SPIRIT.

Psychological Society of Great Britain.

THE CLAIMS OF PSYCHOLOGY TO A PLACE IN THE CIRCLE OF THE SCIENCES.

Sessional Address of the President, MR. SERJEANT COX, on the opening of the Fifth Session of the Psychological Society of Great Britain, Nov. 7, 1878.

LADIES AND GENTLEMEN,

I propose to devote this Fifth Sessional Address to a consideration of the claims of PSYCHOLOGY to a place in the *Circle of the Sciences*.

That it has not yet received such a recognition is sufficiently obvious. The conspicuous representative of the Science of the time is the British Association. This Society, by its all-embracing title and by the formal admission into its programme of more than one department that has not the slightest connection with physical science, practically asserts that no subject designed for the investigation, however remotely, of Nature and her laws will be excluded from its platform.

Wherefore, then, is Psychology rejected? The answer of the Association is, in substance, this: "Our business is with the tangible material Universe. Psychology deals

with something that is immaterial, intangible—whose existence is not proved nor capable of proof, and which, therefore, is unknown and unknowable. Psychology has no foundation of fact and upon fact alone can a Science be constructed.”

I dare to dispute the assertion and the argument. The British Association does not preserve its own boundaries and maintain its own definition. It admits Political Economy and Education. It does not prohibit occasional wandering into the wide field of Art. Speculations verging closely upon Theology are permitted and even welcomed in Presidential Addresses. *Theories* are not always scouted because they are wild. A section is invited to discuss the best manner of educating a human being ; but investigation into the existence, the nature, and the capacities of *the mind* to be so taught, its relationship to the body, its past, its present and its future, is sternly prohibited, as not being a part of Science. If any member dares to moot incidentally any question, however interesting and important, bearing upon the Mind or Soul of Man, he is instantly shouted down, and rules are made with express purpose to prevent the introduction of the subject in any shape. Psychology is not merely refused admission into, it is positively scouted from, the British Association for the Advancement of *Science* !

Even more strange, illogical, and unphilosophical is the treatment of Psychology by another Society of lesser note. Anthropology is the Greek name for the Science of Man. There is an Anthropological Institute, whose profession is the pursuit and promotion of this Science. It was after many years of claim, advanced and rejected, that Anthropology obtained for itself a place—even then grudgingly granted—upon the platform of the British Association, which had, from the beginning, established a department for Natural History. Think of this ! The associated Scientists of our time accepting discussions on

the structure of a bug and rejecting a debate on the mechanism of a Man !

But what the British Association did to Anthropology the Anthropological Institute does to Psychology. The British Association rejected the whole Science of Man. The Anthropological Institute rejects the Science of that part of him that makes him Man. It gives long debates to the shape of his skull—not a word or a thought to the structure of his *mind* ! It listens to dull and learned essays upon the barrows that preserve his bones ; but it will not promote an inquiry into the spirit that animated those relics, the mind that moved those bones, nor if that handful of dust be all that really remains of a being whom high authority declares to be immortal !

The study of Man, omitting the Mind and Soul of Man—Anthropology without Psychology—is surely the caricature of a caricature—the play of Hamlet with the part of Hamlet omitted by particular desire.

For Anthropology should properly be divided into three branches. First, *Human Physiology*, the structure of the body of Man. Secondly, *Psychology*, the forces by which the actions of that structure are directed. Thirdly, *Ethnology*, the geographical distribution and history of the races of men. The Society that omits either of these has no right to the large title of “Anthropologist.” It is Ethnological merely. There is in truth no Anthropological Society promoting Anthropology—as the *Science of Man*—and of the *whole Man*.

The example of these two Societies has been followed, as of course, by the outside world. Psychology is tabooed. Reports of discussions on Psychological questions are by the Journals who profess to report the “Proceedings of Scientific Societies” denied a place, expressly on the ground that Psychology has no pretension to be deemed a Science. If questioned why, the ready answer is, “Your province is with something the being of which is not

proved—whose very existence the greatest Scientists among us entirely deny. There can be no Science in a thing that is not. Therefore it is we refuse to give you a place among the reports and records of the Scientific Societies of the time.”

Hence it occurred to me that this fifth Sessional Address could not be more usefully employed than in answering these objectors and setting forth the true claims of Psychology, not merely to be deemed a Science, but to take a foremost place, as being one of the greatest and most important of all the Sciences.

The definition of PSYCHOLOGY, as adopted by this Society, is perfect. It expresses precisely, clearly, emphatically, and truly what is designed by that title. My purpose this evening is to set forth the subjects for research and discussion that are properly embraced by that definition. I repeat it :

PSYCHOLOGY IS THE SCIENCE THAT INVESTIGATES THE FORCES BY WHICH THE MOTIONS OF THE MATERIAL MECHANISM OF MAN ARE DIRECTED AND DETERMINED.

Although allied to BIOLOGY, or the Science of Life, with which it is often confused, it is in fact essentially distinct. Intelligent motion is not in any manner associated with the motions that indicate the presence of “Life.” The province of Biology is to trace the difference between the things that have life and the things that have not life ; to determine the points of divergence, and the laws that regulate the beginning, the progress, and the end of life ; to solve, if it can, the problem whence life comes and what it is. The range of Biology is sufficiently large and perfectly definite, but by no stretch of definition could it be a substitute for Psychology.

The *Biologist* having shown us what a living thing is ; the *Physiologist* having taught us the structure of that living thing and the functions of its organs, whatever these may be—the *Anthropologist*, directing his attention to MAN,

having opened to us his history, as revealed in the relics of his various works—actions manifestly not automatical but the product of some Intelligence—a great and grand region still remains to be explored. What is the Intelligence directing the action of the MAN described by the Biologist, the Physiologist and the Anthropologist? If that Man be not merely a machine—an automaton—there must be something within him or without him that intelligently directs the motions of his mechanism to definite and intelligent objects. The motions manifestly obey a power within the Man we call his WILL. What that force is, whence it comes, how it works, what are its powers and capacities, the mechanism, if any, through which it acts and how the direction is determined of the force that moves the mechanism—here, indeed, is a vast region in the Science of Man for which no provision has been made, but which nevertheless is actually rejected by the British Association for the advancement of Science, and ignored by the Anthropological Institute, while professing the Science of Man, and by the Journals that call themselves the reporters of the sayings and doings of *all* the Sciences.

Perhaps to some minds the definition of Psychology, which this Society has ventured to advance, and for which it challenges discussion by any who object to it, may appear somewhat vague. “What is a force?” they may ask: “Is there anything moving us but muscular force, which the chemists tell us is produced by the conflagration of the muscle itself? What contracts the muscle? The nerves. What sets the nerves in action? The brain. Nothing can be more simple and obvious. The brain wills, the nerve carries the command, the muscle obeys and contracts, as ordered, and the limb moves in the desired direction. The Mechanism is perfect and so is this explanation of it. What need to go beyond it for something we cannot see, hear, or touch? Why perplex the mind with questions incapable of solution and conjectures

you cannot resolve into certainties? Be content with Physiology, which will teach you all about form and function. Be satisfied with *our* happy conclusion, that Mind is a secretion from brain and Soul a myth—a fancy—the invention of Priestcraft, the paradise of fools.”

Such are the objections raised to the recognition of Psychology as a Science and from the stand point of Materialism they are very powerful. Psychology, on the other hand, asserts emphatically that Mind is something more than a brain secretion, and that *evidence* can be adduced of the existence of Soul—(meaning by this term—the CONSCIOUS SELF—the I—the You) as a definite and distinct entity, the bodily structure being only the mechanism by means of which the communication is maintained between itself and the material world in which it dwells; the molecular structure, perhaps, being nothing more than an incrustation of the non-molecular Self, crystallised, as it were, about it in healthy life, dropping slowly from it in disease and parting wholly from it in death.

This is a conjecture—and only as such is it advanced. Little more than conjecture is possible in the present imperfect condition of our knowledge. We want more *facts* before we can dare to dogmatise. It is the proper province of Psychology to make search for those facts. The Scientists affirm that, Mind and Soul being myths, there can be no facts, and, therefore, that search after them is time wasted and folly.

At this starting point of our Science we join issue with the Materialists. We affirm, with absolute confidence, that there are facts and phenomena, innumerable and indisputable, that point directly to the existence of Mind and Soul, as the only probable solution of them—phenomena wholly inexplicable by and entirely inconsistent with *any* theory of Materialism—phenomena which almost compel to the conclusion that Intelligence is not molecular nor a condition of molecules—that Consciousness is not merely a function of matter—but

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that the thing, whatever it be, we call the Soul, or Mind, is an entity quite other than the thing we call the Body!

Mark, now, how wide a range there is for investigation and deduction by Psychology, and then say if it has not a title to be a *Science*—and a very noble Science.

At its foundation is LIFE. What is Life? What marks the distinction between the living thing and the thing that has no life? Are they specifically different, or do they pass one into the other? According to the Darwinian theory of evolution, when did life begin, and how was it evolved? Or is the Universe a huge living whole, its parts taking the various forms of life according to the conditions under which the development occurs? In Man, what is the beginning of Life? what are its functions? what relationship has it to the other forces that control the mechanism? From what source is the vital force fed, why does it fail, and how does it cease?

Then for MIND. What do we intend by the term? Is Mind identical with Soul? Is it distinct from Soul? Is it an entity? Or is it, as I venture to contend, the collective name given to the actions by which the Soul expresses itself upon the external world through the mechanism of the brain and nerve system? Thus viewed, Mind is not a whole, but a congeries of parts, each part having a distinct function. It is not an entity but only the action of some other thing—or rather a name for the collective functions of the material organ of that other thing—which other thing is the entity—the being—that is conscious of its own unity—of its own identity—of its own distinct existence in a definite form—in brief, the I that, conscious of its own personality; is conscious also of the independent personal being of You.

What a field for Psychology is here! The relationship of brain to mind;—the functions of that organ;—the mental faculties—their operation individually and in combination;—the Mind in health and in disease—the influences of the Mind over the body and of the body over the Mind—these are but a few of the special vocations of Psychology.

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Then comes the great question of the Duality of the Mind. We have *two brains*—have we two Minds? Is each mental faculty enjoyed in duplicate—so that there may be paralysis of one half of the Mind, as of one half of the body, with all the curious problems that grow out of such a condition and the light which, if real, it must cast upon many mental phenomena otherwise inexplicable.

Next comes the question upon which ancient and modern mental philosophers are at issue;—Does the *whole* Mind act in every mental operation, or only specific parts of the mental mechanism—that is to say,—are the process of reasoning, the emotion of anger, the sentiment of Hope, products of the *whole* Mind, or has each its special mechanism in the brain? A vast multitude of facts have been already gathered together, throwing light upon this question. But more are wanted, for the metaphysics, that have been for ages accepted by mankind as knowledge, stifling Science and staying progress, can be banished only by an overwhelming array of *facts* that must compel assent by all minds not closed against conviction by “prepossession” and “dominant idea.”

If the conclusion be, that the Mechanism of the Mind is structured of parts, each part having a distinct and definite function, then comes the no less important, but more difficult, inquiry, what are those mental faculties? These can be learned only by long and accurate observation of the minds of many men, as exhibited in their actions, and something will be gathered from *self*-examination. Those faculties found—and they are undoubtedly many—do they admit of any and what classification? Psychology must inquire if there be any and what specific differences between them. Are intellect and emotion identical? Do the various faculties exhibit their simultaneous presence or absence in the same person? Are not some possessed of great reasoning capacity and no passions? Are not others found to be strong in passion and frail in intellect?

And if there be many mental faculties, an inquiry almost
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more interesting than any for the Psychologist will be, what relationship they bear to each other—in what manner they combine to produce the infinite varieties of character in Man, whether viewed as an individual or as belonging to some race of Man. This involves, not merely the closest observation of character, but the most skilful analysis of it. It is the unfailing charm of this study of MAN that it may be best pursued, not in the solitude of the chamber, but in the busiest haunts of Society—wherever men “most do congregate.” In this the Psychologist possesses a perennial source of enjoyment. Here he finds active employment for all his own faculties. It is a study of which he never wearies.

Think for a moment how vast is the region Psychology thus opens to the intelligent mind. Nor is any profound knowledge of it necessary to its enjoyment. Every step the Student takes is fraught with interesting and attractive objects.

In trivial, as in the most important, sayings and doings of those about him he recognises a meaning and finds a lesson of value. He asks himself what structure of mind prompted this act, or inspired that speech or writing? The presence of what faculties do I trace here? What group of them has combined to create such and such a character? He cannot read history, or drama, or fiction, without finding in it abundant material for practical application of the principles of his science and ample food for thought. Even the personages of fiction serve to him for illustrations.

To analyse any one character of Shakespeare is a *psychological* study, and no better exercise than this could the Student set before him.

The effects of disease upon this marvellous mental mechanism—its action under its many abnormal conditions—supply a new and wide field for examination, knowledge, and reflection. In due course, the Psychologist must investigate the phenomena of *sleep and dream*, of *insanity*,

of *somnambulism*, in its natural or in its induced condition, the mystery of *mental sympathy and communion*, and that curious consequence of the double brain and double mental mechanism, the action of one brain without the other, or the action of both brains in divergent directions, the Individual being conscious of the action of one brain only, his attention being engrossed in receiving the impressions of the one brain that is most active at the moment.

Not less within the province of Psychology are the phenomena of *Memory* and *Recollection*. What are they? What is the process that stamps the passing impression upon the everchanging brain and so preserves it that it can be reproduced long years afterwards? This mystery of *Memory*, and the still more marvellous process of *Recollection*, are problems which it is the proper province of Psychology to solve—or attempt to solve.

All this vast field of knowledge relating to the individual Man is the proper province of Psychology. But our science has a work even beyond this. It searches into the history of the past, as presently we shall see that it projects itself into the future. Was Man always what he is now? Is the Darwinian theory true, that he is the lineal descendant of a mollusc, grown to be what he is by a slow process of evolution, continued through æons of years, under the action of the universal law of the survival of the fittest, being thus gradually adapted to the ever-changing conditions of the world he has inhabited? If his corporeal mechanism grew to be thus, how and where did *mind* come to him? Mr. HERBERT SPENCER, with admirable ingenuity, has sought to apply the Darwinian theory of the evolution of the body of Man to the development of his Mind. He has devoted extraordinary labour to the collection of facts in the history of Man, from which he hopes to deduce conclusive evidence that Intelligence also has been evolved. He does succeed, to some extent, in tracing the gradual growth of brain structure; he shows

how one mental faculty might be the outcome of another or others; and in the survivals of manners and customs he finds traces of a time when they had a real life and meaning, and which, although their uses are outgrown, linger still in habits that have quite lost their meaning now.

Turning from the past to the future, a new region opens to Psychology. What man *was*—what he *is*—suggests at once the reflection what *will he be*? Without raising for the present the much disputed question, “If there is for him a life after the dissolution of his body?” the Psychologist encounters the too-neglected question of *Heredity*. To what extent does the child resemble the parent? Is mind inherited? If so, is it, as the popular belief is, derived from the mother? Why sometimes are there resemblances to both parents—sometimes to one only—sometimes to neither? Again. What causes a likeness to some remote ancestor to crop out suddenly in a far following generation, or why should only one feature be preserved (as in some families) the single surviving index of their race? These and a hundred other queries of equal interest and importance it is the proper province of Psychology to answer, or endeavour to do so—not by theorising merely, but by observation and collection of *facts*.

Lastly comes the question, greatest of all, is the Mechanism of Man constructed of anything other than the body we see and the brain we dissect? Is that brain the ultimate Intelligence? Are all our Inspirations and Aspirations merely secretions from that wonderful pulp? Is Consciousness of individuality, of unity, of being *ourselves*, nothing more than a succession of molecular conditions which we mistake for identity? Although, let me say it here, it is difficult to understand how any succession of independent actions could cause *consciousness*, I ask again, as I have asked before, What is *the thing* that is conscious of the molecular action that by no stretch of imagination can be conceived to be conscious of itself. This is the true battle

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field between Materialism and Psychology, and here the main fight must be fought. Psychology says, "we see in this Consciousness the existence of something that is conscious—conscious of itself—conscious of the external world—itself always, whatever irregularity attends the action of the molecular mechanism. This *something that is not the body* Psychology supposes to be an entity, and that entity is the true Man. We call it *Soul*, for lack of a better name, but we attach to this name no foregone conclusions of its structure, its faculties, its capacities—nor even of necessity for existence after the dissolution of the body. At this point we affirm only that the *thing we call Soul* exists—but what it is, what it does, what it can do, where it is at present, what it is to be in the future, are questions for Psychology to answer, as they can only be satisfactorily answered, by *extensive and accurate observation of PSYCHIC phenomena.*"

Materialism replies to this, that there are no such phenomena, and that there is absolutely no evidence of the being of Soul—that it is purely mythical—that it is imperceptible by any sense—that it cannot even be imagined—that it is not only unknown but unknowable.

Here, also, Psychology challenges Materialism to the test. There are facts and phenomena, neither few nor rare, that may be found by all who make honest search for them, and for which they have not to wander far afield, but may see in their own homes, among their own families, nay, in their own personal experiences. These facts and phenomena, we say, Materialism can by no stretch of ingenuity explain, nor even rationally account for. They can be explained only by recognising the existence of something forming a part of the Mechanism of Man—something non-molecular and therefore imperceptible to the human senses, which are constructed to perceive only such part of Creation as is composed of the special combination of atoms that makes molecules. Now beyond dispute mole-

cules are the ultimate particles perceptible to our very limited senses, but certainly not the ultimate atoms, which doubtless compose an infinite number of other forms of being that are only not perceptible to us because they are of non-molecular construction.

It will be enough to refer to some classes of these phenomena to show on what a vast *foundation of fact* Psychology may be securely based, and to prove that it is not the shadowy pseudo-science that it is called. Behold, first, that most abundant class of the phenomena—the mystery of *Dream*—which only does not amaze us because it is so familiar, but which, if it occurred but rarely, and with a few persons only, would excite either wonder or contempt. There is not a person in this room who, if *Dream* were as rare as clairvoyance, would not be denounced as a lunatic or prosecuted as a rogue and a vagabond for asserting that, when he was asleep, he beheld the most marvellous visions, conversed with the dead—walked upon water—visited remote places. All of us do this nightly, and we are only not deemed to be the victims of “a diluted insanity,” because none can accuse another without condemning himself. But, viewed with scientific eye, what a marvel is dream! What new light would not the investigation of these phenomena cast upon the structure of mind and the being of Soul!

The phenomena of *Delirium* and *Insanity* are no less fraught with instruction for the Psychologist. It is not in the normal condition of the mechanism, when the whole is working smoothly, that the structure of a machine can be discovered. It is when the wheels are disordered, its parts thrown out of gear, that we learn the structure and the uses and functions of every part of it. So with the mechanism of Man. The Physiologist and the Physician can best learn the functions of the various parts of the body from observation of their *diseased* action. Even insanity reveals to us the various *mental* faculties, by exhi-

biting to us the consequences of paralysis or disorder of any one or more of them.

More curious still are the phenomena of *Somnambulism*—that strange condition in which the senses are sealed, or their communication with the Conscious Self suspended, and we are enabled to witness the phenomenon of the Mind receiving its impressions of the external world through some other medium than the nerve system. Psychology has not yet determined what is that substituted medium. But the almost certain conclusion is that the Self—or Soul—severed from its ordinary channel of communication with the external world through the mechanism of the senses, *perceives* by some other medium, probably by such perceptive power as it might be supposed to possess, if the body were to fall from it and it should have a new existence under new conditions. Fortunately for Science, Somnambulism, which is a rare natural product, may be induced artificially, not with a few but with a great number of persons, and, indeed, in almost every family circle. If any person can examine these phenomena without having his faith in Materialism shaken, he must be “prepossessed” indeed—the veritable victim of a “dominant idea”!

Then come the phenomena of *Mental Sympathy and Communion*, of which so many interesting cases have been reported to the Society, and of which we hope to be favoured with many more. The first question as to this is, if it be effected by transmission of mechanical motion from the fibres of one brain to the fibres of another brain,—as harp strings vibrate in unison,—or if it be a capacity of the Conscious Self or Soul, in certain conditions of the mechanism of the body, to communicate by some non-sensual medium with others subject to the same conditions with itself?

Lastly, we have the multitude of phenomena that have been called *Psychic* by those who object to a name that embodies a “foregone conclusion,” and who prefer to wait the

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results of larger experience and more accurate experiment before they venture dogmatically to assert the source of them.

This caution is the more necessary as undoubtedly the conditions requisite to their production are such as almost tempt to fraud. As the consequence of such temptation, offered by the neglect of inquirers to apply reasonable tests, the most impudent impostures have been practised, and will assuredly be repeated, so long as phenomena, which are the proper subjects of Science, are made to minister to the credulity of the superstitious, to gratify a merely gaping curiosity, or to amuse the vacuous and the idle. It will be impossible to accept the Psychic phenomena as *proved*, for any uses of Science, until they have been subjected to the serious and laborious investigation of men who come to them with single-minded purpose to learn what truth is in them,—for truth's sake and for the sake of science alone;—who will view them with eyes coloured by no prejudice nor prepossession—who will insist upon the strictest tests they can devise and accept nothing as *proved* that is not secured by such tests, and then only after repeated experiments under various conditions. If such a course had been adopted from the beginning, opportunity would not have been given for the manifold “exposures” of impudent frauds that have done so much to discredit even the *proved* facts. If, at first, reasonable tests had been insisted upon and precautions taken, such as common sense would dictate, the most prevalent form of fraud could not have grown to the proportions which it has assumed, in spite of the protests of all sensible observers against the prohibition of the most ordinary precautions for protection from imposture.

But if more caution in the future is taught by these catastrophes, Science will profit greatly by them. Psychology desires to be informed what phenomena are proved

by sufficient evidence to be *real*—what are still doubtful—what are fanciful merely—what are impostures. That *all* the tens of thousands of alleged phenomena, witnessed in all parts of the world and attested by experienced observers, should be illusions or delusions, would be a fact even more marvellous than the greatest marvel among the phenomena themselves. It seems to be forgotten that *if but one* of the vast multitude be true, that one proved fact lays the foundation of a new Science, for that solitary fact establishes the existence of a force in nature hitherto unrecognised—a force essentially differing from all the forces as yet known to Science in this, that it is an *intelligent* force.

If but one of these phenomena be established as a fact, how new a field is thus opened to the researches of Psychology! At once the questions arise for investigation and answer: Whence comes this force? It is developed only in the presence or near neighbourhood of some human being, endowed with a special nerve organisation. Does the force proceed from him without whom it is not exhibited? The force operates without muscular contact. Then we face the problem of “action at a distance.” At this moment our philosophers are in conflict if such a thing *can* be. But here it is. If the force proceeds from the Psychic, it certainly does not come from his muscles. Whence comes it then? If from him, but not from his *corporeal* frame, it must proceed from some other entity that is in him. What is that entity? If the conclusion of the inquiry should be that there is such an entity, then that entity is what we call his Soul—that is to say—the Conscious Self.

But suppose the force exhibited not to be *in* him, but *outside* of him—that it is not *his* force but the force of some other being. In such case, the conclusion is unavoidable that there *are* invisible beings capable of exercising force upon visible substances.

If such a force be, certain it is that there is some *intelligent* actor determining its direction. That intelligent actor can only be the Soul of the Psychic, or some independent invisible being. If the former, the existence of Soul is proved. If the latter, that actor must either be the disembodied Soul of some dead person, or some non-human creature, invisible and impalpable to us, inhabiting the world with us, and, in certain conditions, enabled so far to become palpable to our senses as to play the pranks—for the most part, the unmeaning and unworthy pranks—that nevertheless *are* played—as will be admitted by any person who has honestly and laboriously investigated the phenomena.

Here are a series of problems, *growing out of proved facts and phenomena*, the solution of which is the proper province of Psychology. If that province embraced nothing more than this, her claim to admission into the circle of the Sciences would be unanswerable and such, indeed, as few of the recognised Sciences could advance on their own behalf.

It must be admitted that if, after painstaking investigation, the conclusion of scientific research should be, that the phenomena called Psychic, when all forms of imposture are eliminated, are the work of some class of invisible beings inhabiting this earth with us, it will not give to us the same conclusive *proof* of the being of Soul, with a life not limited to the life of the body, as does the popular theory of the source of these phenomena. But happily our prospect of futurity does not depend upon the reality of Psychic phenomena alone, nor on the correctness of any theory as to their source. *All* the other abnormal conditions of the Mechanism of Man, to which I have directed your attention as coming within the province of Psychology, point more or less to the conclusion that as a fact in Science Soul is a reality. Some of them, indeed, admit of no other rational explanation.

I trust now to have shown, to the satisfaction at least of all who hear me, and as I hope it will prove hereafter, to the equal satisfaction of those who may honour me by reading this address—that Psychology is not a sham, but a *very real*, Science; that it has a vast province—far wider, indeed, than may have been imagined by those who have not devoted to it much time and thought. I trust that I have amply vindicated its claims to be admitted into the Circle of the Sciences—to be welcomed at the British Association, and to be made a branch of any study of Anthropology worthy of the name. Our Society, speaking by the voice of its President, puts forward this programme of its purposes, of the many great subjects it comprises, of their vast importance to humanity, of the profound interest that attaches to them and its ambition to enlist for them, not the sympathies merely, *but the active co-operation*, of all who take an interest in the general objects of its constitution—the investigation of the forces by which the Mechanism of Man is moved and the direction of its motions determined—the intelligent force of Mind or Soul—of one, or of both, or of any one or more of its many departments. The pursuit of Psychology is certainly as elevating as that of Materialism is degrading. The eyes of the Materialist are fixed upon the earth; Psychology at least looks up to the heaven. The regards of Materialism are only for the present; Psychology contemplates a future. Materialism despairs; Psychology hopes. Materialism deems us animals; Psychology makes us Men.

This Society was a bold, but a successful, experiment to combat the great and growing power of Materialism, not, as hitherto, by metaphysical abstractions, but with its own weapons of *fact and phenomena*, of *evidence and proof*. “Argue and dogmatise as much as you please,” said the Physicists, “modern Science repudiates such methods for the pursuit of truth. We demand from you

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proofs sustained by evidence ; realities, not fictions ; facts, not dogmas ; things, not dreams and desires. Until you produce such credentials, we cannot recognise you as Scientists or Psychology as a Science." This Society admitted the validity of the objection, accepted the challenge, and is prepared to fight them with facts, phenomena, proofs, realities, things. What it has already done—the subjects it has already examined—the *facts* it has already collected,—do therefore entitle it to the recognition it claims. Many attempts have been made, and still will be made, to discredit it by imputing to it objects other than its ostensible one. We entirely and indignantly repudiate any such design. We are embodied for the sole object expressed in our prospectus—"The investigation of the forces by which the Mechanism of Man is moved and directed." We have never departed, and do not intend to depart, from this public profession of our purpose. We have carefully observed it in all our papers and debates. Many of the subjects comprised in the wide range of great themes, of which I have in this address feebly attempted to present the merest outline, have been treated of in this room, and others of them will engage our attention during the present Session. It would, of course, be impossible to single one class of phenomena from out the multitude that belong to Psychology, and because it chanced to be unpopular, refuse to subject it to the same scientific examination as we give to the rest. It would be at once cowardly and unwise to decline to view it, and prove it, and try what worth and truth there is in it. Nor, as Mr. GLADSTONE contends, is it sufficient cause for turning away from so much as may be true because charlatans have traded upon credulity and imposture has ministered to a frivolous curiosity. The plain duty of Psychologists is to investigate scientifically, with express purpose to eliminate fraud and falsehood, with the sole design of advancing knowledge, and to possess itself of the residuum of that

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truth which is proverbially said to lie at the bottom of the well. In this sense only has this question been received and so only has it been treated.

And here let me throw out a suggestion. There has been, and in spite of experience there still is, much misunderstanding of the true objects of this Society. No small portion of the disadvantage under which it thus labours has been the consequence of an adoption of its title by a considerable number of associations in London and the Provinces who really do what we are supposed to do, that is to say, under the wide name of Psychology conceal a very limited purpose. All or almost all of the numerous "Psychological Societies" that have sprung up since the formation of this, do in fact limit their labours to the one most disputed and disputable class of phenomena, which, if admitting of one explanation, would not be Psychological at all, and in any case are nothing more than one small section of the large range of facts and phenomena which Psychology embraces. This incorrect use of a general title for a particular purpose has doubtless led to a public impression that our aims are only theirs, and that, although we call ourselves students of Psychology, we are merely curiosity-mongers. To remove this misapprehension, which operates against us to no inconsiderable extent, and to make our true design and character plain to all, without liability to the confusion resulting from the like name being adopted with quite different purposes, I would respectfully suggest to the members a slight change in our own name. The term "Psychology" is now unfairly used, and too often abused. Let us substitute the term "PNEUMATOLOGY." It is as correct etymologically, logically, and scientifically, although not so familiar. Its meaning is the same, but it has the great recommendation of not being as yet misapplied and misappropriated. "*The Pneumatological Society of Great Britain*" sounds as well and looks as well, and it is free from the cloud of prejudice that has not unnaturally gathered [258]

about the term "Psychology" by reason of the many misuses of it.

That there is a growing interest in the great questions embraced by this Society is proved by the excellent audiences that have steadily gathered in this room—larger, let me say, than those usually present at the meetings of any scientific Society in London, "the Geographical" only excepted. Another proof of the spread of the taste for Psychological research and desire for knowledge of its principles is found in the recent establishment of no less than three Quarterly Reviews devoted to different branches of it. "*Mind*" is almost wholly metaphysical, giving comparatively little attention to *facts*; and, therefore, I regret to observe, it does little for the extension of our knowledge of Mind. "*Brain*" is a more practical periodical. It professes, as its name implies, to deal with the material mechanism of Mind, and to the extent of its limited scheme it will do good service to Psychological Science. But here also there is an unfortunate lack of records of the *facts* and phenomena attendant upon the various abnormal conditions of the brain and nerve system, wanting which as a basis, real progress in Psychological Science must needs be slow, for its theories, however ingenious, unless based upon facts, can be little other than conjecture and speculation. The *Psychological Review*, the latest in the field, promises to be the most useful. But here again the range of topics is somewhat too limited, and the most important of the material required in such a work—a collection of reports of facts and phenomena, without note or comment—such as are given by the Medical Journals of medical cases—is still wanting. But the experiment is yet young and improvements may be anticipated with age, experience and success.

In conclusion, I can only repeat what I have so often urged from this chair. All physical science must be based upon *facts*. Facts can be proved only by *evidence*. The

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witnesses must be weighed as well as counted. If the information comes from one sense only, it should be mistrusted until it is confirmed by repeated observation under various conditions. If more senses than one give the same information, the value of such evidence increases in arithmetical ratio, because of the improbability of so many deceptions at the same moment. If there are two trustworthy witnesses, and both have the same perceptions at the same time, the testimony is more cogent still; but if more than two, then the probability of truth is overwhelming.

A fact cannot be combated by an argument. It is an answer to any amount of ingenious logic, contending that the fact *cannot* be, to show that *it is*. A fact may be howled down by ignorance, "put down" by authority, written down by dogmatism, suppressed by the newspapers; but it cannot be *killed*, for a fact is immortal. It will assuredly survive all its opponents. As it was yesterday, so it is to-day, and so it will be to-morrow. Closing to it our own eyes or the eyes of others will not banish it; no persecution can destroy it; no law, nor authority, can make it *not* to be.

And as it has been in the past, so it is now and so perhaps it will ever be. Vanity, and too often more practical interests, are naturally enlisted against the reception of new truths that threaten to disturb old theories and shake established reputations. It is the common weakness of human nature, from which Scientists are not more free than others. This is the true obstacle to the admission of Psychology into the recognised circle of the Sciences. It must be confessed that it does seriously shake the supremacy of Materialism and threaten the fame of eminent Materialists. It must, therefore, look for hostility. But courage and perseverance will subdue prejudice and conquer opposition, as it has done so often before. Materialism appears formidable now because it has so many eloquent and able supporters. But we believe it to be destined to fall before the nobler teachings of Psychology, going forth, *as here it*
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does, armed, not with metaphysical abstractions, which only beat the air, but with the substantial and formidable weapon of *fact*. Let us remember that *one fact*, however small, will suffice to load the sling that will bring the giant to the earth. It is the business of this Society to search among the phenomena of their Science, not for one only, but for a whole armoury of such facts, each a death to Materialism. Be assured you will find them, if you will only look for them with zeal, with patience, with perseverance, with caution, and with care.

But Psychology offers to those who pursue it, in the large and liberal spirit which I have ventured to commend to your favour, a yet higher and holier pleasure. When the conviction has come to him, not by authority and dogma, but by the positive evidence of facts and phenomena, that there is a Soul in Man, the Psychologist learns to see a Soul in Nature. The proofs of it are patent to him. He finds its presence about him everywhere, underlying all substance, explaining many mysteries, solving a multitude of problems, wholly insoluble by Materialism. To the Psychologist the Universe wears a new aspect; this world has for him a new meaning; Nature, new teachings; life, a new mission; duty, a loftier aim. He contemplates a nobler present and hopes confidently for a greater future. As he makes that present he knows that so he will mould that future. He asks himself if it be not possible, nay probable, that if there be a Soul in Man and a Soul in Nature—A PRESENT DEITY, IN FACT—what is to us the material Universe, constructed, as the Scientists assert, of molecules, may be the surging up, as it were, in those infinitely various material forms, but true to a few types, of a Universe of Soul permeating and underlying the molecular structure of which it is only the perceptible embodiment, that is for ever changing its shape but remaining the same in substance still?

For there is no Death in Nature—because there is no

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annihilation. It is only dissolution—change—separation of particles and reconstruction. No one particle perishes. The material mechanism is resolved into its elements and reappears. If there be a Soul in Man, that also cannot *die*. It must remain somewhere, under some condition of existence.

The Psychologist sees with awe and veneration in all this ceaseless round of dissolution and reformation, the presence of an animating, directing and intelligent power, very like that he is conscious of in himself. Recognising Soul as the intelligent force that is within him, he recognises the presence and the action of the like force without. Seeing Soul in Nature, as in Man, he feels what the poet has expressed for him, in thoughts that breathe and words that burn :

For I have learned

To look on Nature, not as in the hour
Of thoughtless youth, but hearing oftentimes
The still, sad music of humanity,
Not harsh nor grating, but of ample power
To chasten and subdue. And I have felt
A presence that disturbs me with the joy
Of elevated thoughts; a sense sublime
Of something far more deeply interfused,
Whose dwelling is the light of setting suns,
And the round ocean, and the living air,
And the blue sky, and in the heart of man:
A motion and a spirit that impels
All thinking things, all objects of all thought,
And rolls through all things.

Therefore am I still

A lover of the meadows and the woods
And mountains, and of all that we behold
From this green earth; of all the mighty world
Of eye and ear, both what they half create
And what perceive; well pleased to recognise
In Nature and the language of the sense
The anchor of my purest thought, the nurse,
The guide, the guardian of my heart, and soul
Of all my moral being.—WORDSWORTH.

Psychological Society of Great Britain.

THE PSYCHOLOGY OF HAMLET.

Read at the Meeting of the Psychological Society of Great Britain, May 1, 1879, by MR. SERJEANT COX.

PSYCHOLOGY may best be learned and taught by example. There is nothing more instructive to master and pupil alike than analysis of character and in its development by action and speech to trace the mental structure that so manifests itself. It is not too much to assert that more knowledge of the forces by which the Mechanism of Man is moved and directed, and of the methods of their action, will be obtained from one such examination of the conduct and motives of an individual human being, than could be gleaned from a hundred lectures by metaphysicians dealing only with abstractions, conjectures, and *à priori* argument.

But better even than the study of the Psychology of a Man living or who has lived, is the study of some one of the

creations with which Genius has so largely supplied the world ; better, inasmuch as they are more open to inspection, more familiar, and therefore substantially more *real* to us, than any actual personage can ever be. So much of every living man is carefully concealed from view—is, in fact, known only to himself—that he who has most opened his life and thoughts to the inspection of his fellow creatures has doubtless repressed a great deal more than he has revealed. Of all the writers who have produced studies for the Psychologist, SHAKESPEARE is beyond measure the greatest, and of all the characters SHAKESPEARE has created, there is none so much the subject of controversy as Hamlet. Libraries have been written upon him and yet the theme is unexhausted. It is debated as eagerly and hotly as ever. But it is not as a literary controversy that I ask your attention to it. It is as a Psychological study.

The combatants are about equally divided in number and weight. The question over which they contend is contained in three words : “ Was Hamlet mad ? ” “ Yes, decidedly,” says one party ; “ Certainly not,” shouts the other party. “ But he acts the madman,” returns the first. “ He only shams madness,” retorts the other. Proofs are adduced by both parties strongly supporting the contention of each. It seems to me that the continuance of this dispute indicates, as in all debatable questions of science, that somehow the inquirers are upon the wrong path and that to discover the truth we must turn into some other path than that which has been pursued so long without decisive results.

My purpose in this paper is to suggest another view of the question based, not upon the old but upon the new mental physiology. We have emancipated ourselves from the Metaphysicians for the study of mind generally. We have lately taken to deal with mind as we deal with the

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subject-matter of all physical science, and banishing *à priori* argument and speculative abstractions, we have begun to build up a real Science of Mind and Soul upon the sure and safe foundation of *facts*. We look about us to see what is the *action* of the Mechanism of Man in its normal and its abnormal conditions; what it *does*; what *phenomena* it exhibits; how Mind and Soul express themselves outwardly. Then, putting all these facts together, we are confident that we can erect as sound and secure a structure for Psychology as has been erected for the other Sciences by the same process.

The purpose of the paper is to employ this modern method of investigation upon the much debated character of Hamlet and see what comes of it—if it may not lead us to something like a solution of the problem, “Madness or no madness?” which has hitherto absorbed almost wholly the thoughts and energies of the combatants.

The method I suggest is that we should first see what is the mental structure of Hamlet, as shown by his acts and words. Then I think it will be found that this mental structure explains the mystery—without resorting to the strange conclusion that the man who says some of the wisest things that ever were uttered was a lunatic.

For remember what madness is. It is *disease* of the structure of the brain, or of some part of it, causing irregular or incomplete performance of some of its functions. Eccentricity, the result of structure, is not madness, nor allied to madness. If natural mental structure—that which was born with him, that which makes him Hamlet and not any other person—will explain his actions in the play, the lunatic theory must be abandoned.

Craniology I hold to be an unproved theory. The doctrine of Phrenology, that the brain is the organ of mind, and that certain parts of the brain have specific mental

functions, I hold to be established, although it is more than doubtful if we have yet ascertained what particular portions of the brain are appropriated to those functions. But I accept, as established, that analysis of the mental faculties which Phrenology has worked out and for which Psychological Science owes to it a debt of gratitude. I employ this division of the mental faculties, not only because it is in my judgment correct, but also because it is generally intelligible.

Hamlet is manifestly of *melancholic* temperament. He lacks the faculty of *Hope*. It is the characteristic of such a disposition to nurse griefs—to look on the dark side of things. His first appearance on the stage introduces us at once to this marked feature. We see the son sighing for his dead father and who would not be comforted. He wears the deepest mourning while all the Court is robed in wedding garments. To his mother's exhortation that he should cease from seeking his noble father in the dust, and her hint that his sorrow was more in seeming than in substance, he answers :

'Tis not alone my inky cloak, good mother,
Nor customary suits of solemn black
That can decide me truly; these indeed "seem,"
For they are actions that a man might play;
But I have that within which passeth show,
These but the trappings and the suits of woe.

The second in prominence of his mental features is *irresolution*—a character by no means uncommon. It is, in fact, a deficiency of the faculty of firmness and is most conspicuous in minds possessing large capacities for reasoning and reflecting. Such minds habitually hesitate. They have their doubts. They look upon both sides of every question and balance the *pros* and *cons*. They perceive prospective difficulties and objections not apparent to those
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who act without preliminary thought. This characteristic is not, as commonly supposed, a form of cowardice. The irresolution that paralyzes action is not the product of fear. The judgment sees so much to attract or to warn, as the case may be, that it is unable to come to a decision and pronounce a verdict. Even when resolved to take action, such potent objections present themselves that the mental energies are distracted. The *will* to do is not put forth, as with the inconsiderate—who accept at once an absolute assurance that the course resolved upon is the right one.

This characteristic of the young Prince of Denmark is exhibited throughout the drama. He begins by accepting the Ghost as the true spirit of his father, and at the moment, in the passion of the revelation, he promises to avenge the crime. But he soon begins to reflect, to reason, and then to question the truth of the manifestation. As his thoughts dwell upon it, he discovers all kinds of reasons why he might be mistaken.

The spirit that I have seen
May be the devil, and the devil hath power
To assume a pleasing shape; yea, and perhaps
Out of my weakness and my melancholy,
As he is very potent with such spirits,
Allures me but to damn me.

Have we not often witnessed the same process among ourselves in relation to other phenomena?

Hamlet is affectionate and fond. He dearly loved his father; he must have been a loving son to his mother until her unnatural marriage revolted him. His friendship for Horatio was firm and enduring. He loved Ophelia with the passion of his youth until the ghostly revelation froze the life-blood in his veins and stifled all better feelings in an absorbing thirst for vengeance. Throughout we can see his love struggling fiercely with his over-mastering passion for

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revenge—his conviction that a duty had been imposed upon him to which he must sacrifice the past and all its fond records. How terrible was this mental struggle is shown in that wonderful scene with Ophelia, in which he bids her go to a nunnery. How he wavers between his long cherished love for the girl, whom he believes to have been thrown in his way purposely to try him, and his resolve to sustain his assumed character in the presence of the spies who were watching him. Here again we see the characteristics of the man betraying themselves in his indecision, his cynical philosophy, his reflective habits, his incapacity for action—a character by no means rare in social life. Who has not known men who can *think* profoundly and well, but cannot *do*; who rightly point the way, but want the force of *will* to follow it? That is the character of Hamlet. He is a *moody* man, and, like all moody men, his spirits are sometimes extravagantly high, sometimes wretchedly low. Even his humour is tinged with melancholy, as witness the dialogue with the gravediggers. According to the mood of the moment is the aspect to him of the world and all its belongings. It must be remembered, also, that he was possessed with the superstition that prevailed down to a very recent time. He was a philosopher of the schools, and when Shakespeare embodied this marvellous creation of his genius, even philosophers did not doubt the existence of ghosts. It was a part of the world's creed, and to question it would have been deemed as rank a heresy as atheism. This must be taken into account in any estimate of the character of Hamlet as exhibited in his speech and conduct. He never for a moment doubted that he had seen a visitor from the other world. The doubt that troubled him was not if his senses had deceived him, or imposture trifled with him, but if the Ghost really was the actual personality it professed to be. It *might* be a devil. Was it his father's

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spirit, or was it a demon pretending to be his father? He did not doubt for a moment that it was a spirit he had seen, he had no thought that his senses had been deluded.

This was the other side of the question which his hesitating mind presented to him. He believed in the potency of evil spirits. He believed implicitly that they could take any shape and profess any personality for the purpose of entrapping human Souls. It is not difficult to imagine what was the course of reasoning in his hesitating mind and how with him it paralysed *action*.

This, then, is the keynote of the entire drama from the moment of his interview with the Ghost. A clear conception must be formed of his natural temperament, as I have ventured to describe it—reflective but irresolute—thoughtful but inactive,—shocked at first by the shameless marriage of his mother, afterwards learning that she was not merely a wanton, but a murderess, a supernatural revelation enforcing him to vengeance, but his lifted arm paralysed by doubt if the communication was from above or from below. Thus contemplated, his whole conduct seems to me not only perfectly intelligible but perfectly *natural*.

With this necessary introduction, let us proceed to the examination of the drama itself and endeavour to trace in it the revelations of the character we have sketched.

Let us see how this view of the psychological character of Hamlet is sustained by the play.

He is, as already noted, first introduced to us labouring under a fit of melancholy. He is shocked at the marriage of his mother following so hard upon his father's funeral. He has a shadowy suspicion of foul play. "Oh, my prophetic soul, my uncle." In this mood he is startled by the intelligence of the appearance of his father's spirit in arms.

He expresses no doubt of the fact, for he feels none. Belief

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in ghosts was universal. When Shakespeare made such marvellous dramatic use of the supernatural, it would have been deemed insanity to question that spirits walk the earth.

Then comes the interview with the Ghost ; the revelation of that murder " most foul, strange, and unnatural." With one of Hamlet's melancholy temperament such a tale could not but " harrow up his soul, freeze his young blood." And it wrought a sudden change in him. His one object in life thenceforth should be to avenge his father's murder. To this end, in the haste of the moment, he devises that scheme of pretended lunacy which explains the whole future action and apparent contradictions of the play. He will " put an antic disposition on " to avert suspicion from his real purpose. Nothing can be more explicit than his intimation that he was going to assume a character with a distinct and obvious design. Nevertheless, in the face of this express avowal, volumes have been written to contend that Hamlet was really mad.

The voices of his frightened friends remind him that he has a part to play, and his purpose is even then avowed. He had resolved to feign madness with obvious design.

But very soon his constitutional irresolution returns. He doubts, hesitates. I am not sure that he does not—what we see so many do among ourselves—after awhile begin to question his senses and doubt to-morrow what he has seen to-day. If he does not banish the vision altogether, he certainly begins to doubt if it was an " honest " ghost. It was the popular belief that the devil could assume all shapes, even those of angels, for the entrapping of souls, and this reflection made him hesitate again.

Certainly this irresolution, this wavering between duty (for such was vengeance to him) and doubt could not but disturb somewhat a mind not naturally well balanced. He

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is harassed by contending emotions and intellectual conflicts. In a fit of his melancholy mood he contemplates even suicide as an escape from that mental disquietude which is the most frequent cause of self-slaughter. But he steadily maintains the assumed character of the madman to those about him—to all observers, except his dear friend Horatio, who is the depositary of his secrets. With him he is at all times sane enough. Can a real madman change thus at will?

But Ophelia—what of her? His behaviour to her is inexplicable and inexcusable, say the critics, save on the assumption of positive madness. She had not offended him. She could not betray him. We challenge an explanation of this consistent with the sanity of a gentleman described by Ophelia herself, as

The expectancy and rose of the fair state,
The glass of fashion and the mould of form,
The observed of all observers.

He has loved Ophelia dearly—loves her still; but he knows her to be innocently the tool of her father. His sagacity has divined that she is to be made an instrument to try him. Polonius implicitly believes in the reality of his madness. But the King, with the natural suspiciousness of the guilty, has manifestly in his mind an almost instinctive sense that Hamlet is playing a part, and his conscience tells him wherefore. Consequently he is most anxious, by personal observation, to test him when not himself perceived, and he accepts with eagerness the proposal of Polonius that they should hide and him unaware that he is observed; for which purpose Ophelia is to be set innocently to entrap him into a revelation of his true condition.

His fellow-students are put upon the like watch for the like reason—to learn if his madness was real or assumed. He speedily detects their scheme, however.

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The appearance of the Players suggests to him the device of setting a trap for the King. He will have a play that shall tell over again, in the presence of the suspected murderers, the story told him by the Ghost.

Polonius and the King continue their espials. Ophelia is still the bait employed. On his approach in one of his most melancholy and most meditative moods—when his reasoning powers were most active and his faculty of hope in its most extreme depression—again they hide and listen. At first he is not aware that spies are near him and his marvellous soliloquy marks surely not the madman but the philosopher. It is not until he has risen to greet Ophelia that he sees or hears the spies. Then, *and therefore*, he instantly resumes, and abruptly, the “antic disposition” he had put on for a purpose. *Then* follows the extraordinary scene which has been so persistently advanced as conclusive proof that Hamlet was really insane, and this, in spite of his sudden assumption of apparent insanity and the obvious motive for it.

We are indebted to Mr. HENRY IRVING for having rightly interpreted this much misrepresented scene. Other actors have made of it an incoherent raving. He has given to it its true meaning and expression—a mingling of deep love for the girl with the conscious need for sustaining before the hidden witnesses the character he had assumed. The conflict was hard to bear, the work hard to do, and he tries to stifle the emotions of his love by the affectation of a passion he does not feel. He is conscious of inflicting a terrible agony upon her by those “wild and whirling words;” but the consciousness of the ears that were open behind the arras to catch every syllable that fell from his lips compelled him to a harshness he was far from feeling. At times his affection almost betrays him. But it is exhibited in tone, not in language. Mr. IRVING’s expression

of this conflict of emotions, his impulse almost to embrace her, and then his restraining endeavour to sustain even by exaggerating, the part he was playing, is to my mind the true embodiment of Shakespeare's design, as it is a triumph of dramatic art—one of those bursts of true genius for which we would gladly forgive the Actor's faults were they ten times more numerous.

Then his advice to the players. Is that madness or anything that anybody but a mad-doctor could torture into madness? He is now no longer irresolute. His mind is made up. The path is plain before him. He had certainly imparted to his bosom friend, Horatio, all his doubts and suspicions; he now confides to him his plot of the play and invites his assistance. It is given cordially, with what result we all know.

Assured now that it was an honest Ghost—persuaded that his college friends Rosencrantz and the gentle Guildenstern were commissioned to watch him, he maintains his assumed character with them.

The reappearance of the Ghost in the midst of his passionate interview with his mother marks the irresolution that had so long held him inactive.

And again at the close of this marvellous scene he tells his mother not to let the King by his endearments

Make you to ravel all this matter out,
That I essentially am *not* in madness,
But *mad in craft*.

The irresolution had again shown itself in the closet when, the King kneeling in prayer and the opportunity for vengeance offering, he failed to avail himself of it—his wavering reasons for inaction plainly proving that he could not make up his mind. Hearing a noise behind the arras he kills Polonius believing the spy to be the King. It was infirmity of purpose still, *not* insanity.

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The question has been often asked why, now that he was assured of his uncle's guilt, he did not at once proceed to fulfil the promise he had made to avenge his father's murder? Opportunities could not have been wanting. Why did he quit Denmark, leaving his work undone? Even after his return, so craftily brought about, his purpose remains blunted. He meets the King in the churchyard, but *does* nothing. Even the catastrophe is not of his seeking. He was the intended victim of the passage at arms and the blow that slew the King avenged more his own murder than that of his father. Thus to the last his character is maintained with most admirable consistency. A character meditative not active—highly intellectual and reflective, but wavering, vacillating, doubting. Certainly he is not mad, nor is there the slightest approach to madness. Every act simulating madness is carefully calculated. Madness never yet talked so wisely as he talks when it is not his cue to assume the "antic disposition."

I hope, therefore, to have established something like a case against the Insanity theory so steadily maintained by so many critics, and notably by an eminent M.D. (a) who should be an authority upon such a question, seeing that he was, if he is not now, the Principal of a lunatic asylum. I trust, so far as a Psychological investigation of the play can do so, to have satisfied those who may have doubted, that Hamlet really was and did what he has himself described in these passages ;

Here, as before, never, so help you mercy,
How strange or odd soe'er I bear myself,
As I, perchance, hereafter shall think meet
To put an antic disposition on—

Again :

Ham. But my uncle-father and aunt-mother are deceived.

(a) Dr. Bucknell.

Ham. I am but mad north-north-west; when the wind is southerly
know a hawk from a heronshaw.

Queen. This is the very coinage of your brain ;
This bodiless creation ecstasy
Is very cunning in

My pulse as yours doth temperately keep time
And makes as healthful music. It is not madness
That I have uttered. Bring me to the test
And I the matter will reword, which madness
Would gambol from.

that I
Essentially am not in madness,
But *mad in craft*.

Psychological Society of Great Britain.

PROTOPLASM AND PSYCHOLOGY.

(Sixth Annual Presidential Address to the Psychological Society of Great Britain, Thursday, November 6, 1879, by MR. SERJEANT COX, President).

HAS Psychology made any and what progress during the five years of the existence of this Society? That is the question I propose to answer to-night.

To do so, I must revert to the origin of our Association.

Materialism,—by which term I mean the dogma that Man is material merely, Soul a myth, and existence after the mechanism of the body has ceased to be, the dream of poets or the delusion of priests—Materialism, in this sense, was proclaimed by the High Priests of Science upon public platforms and in popular periodicals.

It had become “the fashion,” under divers names. To question it was to be voted unscientific. Hope and faith were shattered in many minds, and all minds were more or less disturbed.

A cry of anguish and despair went up from multitudes whose confidence in Man and his destiny had been thus rudely shaken. “Can it be,” they said, “that Man

everywhere and at all times has believed Soul, that is, himself, as being something other than the body, if there be no truth in such a creed? Is there no *evidence* of the existence of Soul? Is there no *proof* of its being? Is such proof really unattainable, as the Scientists say? Is Psychology a baseless science? Why have we not a Society that will investigate the Mechanism of Man precisely as the other sciences are investigated — a Society for observation of phenomena, gathering of facts and reasoning to conclusions from those facts; a society that will combat Materialism with its own weapons, meeting it, not with dogma but with demonstration.

This Association was an answer to that complaint.

Our programme was short and explicit. The Psychological Society of Great Britain was formed purposely to investigate the forces by which the Mechanism of Man is moved and directed. Two facts were not disputed. The motions of that mechanism are automatic. The motive force is *within* the mechanism. But in addition to this there is a *directing force* — (a force also within the mechanism) — that determines the amount of the motive force, the manner of its exercise, *the ends to which it shall be applied*.

When it is charged against us that Psychology is a very vague science (if it be even entitled to the name of Science), we answer with this definition, which has the merit of brevity, simplicity and comprehensiveness, and may challenge comparison with the definition of any other science.

The promulgation of this definition of Psychology was in itself a great step in the path of progress, for indeed the name had been very vaguely used. We now know precisely what we mean by Psychology, and we are enabled to convey that meaning distinctly to others. No adversary can now pretend that he does not understand what Psychology is, nor can any now deny that it has a very real

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something to investigate—and that the subjects of it demand investigation.

The second forward step has been the severance of Psychology from Metaphysics. This has been the triumph of very recent years. Many among us can remember the time when Psychology was looked upon as a purely metaphysical study, and was so held and treated even by its votaries. Most of those who, with myself, are declining in the vale of years, and on whose brows, to use the beautiful Welsh metaphor, the flowers of the grave are blooming, will remember with what eagerness they plunged into that which was called "Philosophy;" how they revelled in diverging theories of mind, its powers and capacities, as *imagined* by the ingenuity of such thinkers as REID and STEWART and HAMILTON and BROWNE, theories evolved from their inner consciousness and moulded entirely from introspection instead of observation; how they rose from these studies charmed but not enlightened, their intellects, indeed, refined and strengthened by exercise, but nothing added to their positive knowledge. The first conception of a real Psychology, based upon observation and experiment—as a *science founded upon facts*—was undoubtedly due to GALL and his fellow labourer SPURZHEIM, who taught that mind must be explored, like the body, by noting its various developments in various persons, and then seeking if there be in the structure of those individuals any and what peculiarities apparently associated with these developments. If they were successful in their researches, if the coincidences they noted were actual or only accidental, is still a subject of dispute. But not the less to them is due the merit of having removed Psychology from the realm of fancy to the region of fact. They taught the right method of pursuit, even if they failed to secure its object, and from that moment we may date a new departure in mental and psychical science. The influence of that method was manifest in the works even of its opponents. Gradually

it grew in favour while its authors were disowned and discredited. The most notable of its acknowledged disciples were GEORGE and ANDREW COMBE, whose works will live to benefit future generations. They acknowledged the obligation and boasted themselves disciples. Others less scrupulous, as the manner is, learned the lesson and ignored the Master. ABERCROMBY in his "*Intellectual Powers*," Dr. MOORE in his "*Duality of the Mind*," and many of lesser fame, made practical application of this new and true method of psychological science. They proved what might be accomplished for mental science by noting phenomena and facts, and now they are but few who venture to treat of Psychology on any other basis. Although dissenting from many of his conclusions, and protesting against the unfairness, because onesidedness, of many of his judgments, and lamenting that so keen a mind should be so much the victim of prepossession and dominant idea, it would be unjust not to recognise the service done to Psychology by Dr. CARPENTER by accepting the new conditions of study, by the valuable collection of observed facts he has stored up in his books, and by the popularity which he has thus given to a Science which had been formerly the property of a few, when in truth it is the Science that more than any other ought to be the possession of every Man—because it is the knowledge of himself.

But more than to any other is Psychology indebted to Mr. HERBERT SPENCER for its present position. He has fully accepted the method of investigation by observation and of study by fact rather than by fancy. He has examined mind as he would have examined body—noting its operations—that is to say, what it *does* under various conditions, and how the forces that move and direct the body manifest themselves in action. But his great achievement—that which will make his works for ever valuable, if only as museums of psychological facts—is the bold endeavour to apply to Mind the Darwinian theory of Evolution. Accepting
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that new basis of Philosophy as indisputably true, he contends that, if it be true, it must be applicable to Mind as to body. If Man is a development, so must be the Mind of Man. If the law of "the survival of the fittest," which is the necessary accompaniment of Evolution, be a reality and not a magnificent dream, traces of it will be found in the mental condition of Man, as exhibited in the actions and thoughts of men under the various conditions of their being—their present and past histories and the environments of climatic and other influences. With enormous labour he has gathered together a vast mass of these facts, materials to be hereafter classified, compared and examined. It is much to be lamented that this great student of Psychology should have neglected that which, more than any other, must supply material for the investigation of the forces by which the Mechanism of Man is moved and directed—namely, the action of those forces when the mechanism is disordered—the observation of Mind in its abnormal conditions—in Sleep, in Dream, in Insanity, in Somnambulism. If Mr. HERBERT SPENCER would apply the same laborious industry to collection of the facts and phenomena thus exhibited by Mind itself, he would lay deep and broad a foundation which at present is only partial.

And this raises the question why he has avoided so obvious a source of knowledge? It is not a dread of unpopularity, for he dares an open acknowledgment of materialism. Wherefore, then, does he decline to enter this straight pathway to what he most desires to learn?

The reason is too plain. He fears whither it will conduct him. Even *his* great mind is not free from the influence of prepossession and dominant idea. With the late Professor CLIFFORD, with HUXLEY, TYNDALL, and indeed the vast majority of our eminent Scientists, he has embraced two conclusions as absolute truths. First, he assumes that the Mechanism of Man is nothing more than the perishable structure perceptible by our senses; and, second, that

whatever our senses cannot perceive, even if it be, must necessarily be unknown and unknowable and therefore that it is a waste of time and toil to seek for it. Absolutely confident of this assumption, he and those who hold with him at once and peremptorily reject as false or fanciful any phenomena that appear to be inconsistent with that assumption. It is not with them a question of evidence—of *degree* of proof. No amount of proof will be accepted, because in their minds the alleged fact is simply impossible. "It cannot be," he says, "and therefore it is not. It is useless to look when, even if I saw, I should not believe. I will not accept the evidence of my senses as against my preformed mental judgment. I should prefer to conclude that all my senses are deceiving me rather than that my mental convictions should have failed me."

With such a mental condition it is impossible to contend. It is deaf to argument. In vain it is urged that we are as yet on the threshold merely of Science—that our knowledge of Nature and of Nature's laws is still very limited—that proofs present themselves almost daily that things Science has pronounced impossible nevertheless come to be. Dogmatism is not to be moved. But still, as ever it must, the denied fact lives, and in due time is established, and then it is found to square with all other scientific truths, because its causes and conditions have been explored and examined.

The event of the past year that most interests Psychology is the admirable address of the President of the British Association at the Sheffield Congress. Professor ALLMAN devoted himself to a clear and precise narrative of recent progress in Physiological research in the direction of the genesis of organic life. He asserted the important truth that all life—be it animal or vegetable—traced back to its first perceptible beginnings, is, if not identical, so intimately allied, that no distinction is apparent between one form of life and another. We examine the materials of

which the shapes of all animated being are constructed, and it reduces itself to a jelly, called protoplasm. Of this protoplasm the Man, the Lion, the Eagle, the Whale, the Oak are builded, as also are the gnat and the mildew.

This protoplasm is the ultimate particle and the first visible germ of everything that has life. Hear what the President says :

From the facts which have been now brought to your notice there is but one legitimate conclusion—that life is a property of protoplasm. In this assertion there is nothing that need startle us. The essential phenomena of living beings are not so widely separated from the phenomena of lifeless matter as to render it impossible to recognise an analogy between them ; for even irritability, the one grand character of all living beings, is not more difficult to be conceived of as a property of matter than the physical phenomena of radial energy.

When, however, we say that life is a property of protoplasm, we assert as much as we are justified in doing. Here we stand upon the boundary between life in its proper conception, as a group of phenomena having irritability as their common bond, and that other and higher group of phenomena which we designate as consciousness or thought, and which, however intimately connected with those of life, are yet essentially distinct from them.

When a thought passes through the mind, it is associated, as we have now abundant reason for believing, with some change in the protoplasm of the cerebral cells. Are we, therefore, justified in regarding thought as a property of the protoplasm of these cells, in the sense in which we regard muscular contraction as a property of the protoplasm of muscle? or is it really a property residing in something far different, but which may yet need for its manifestation the activity of cerebral protoplasm?

If we could see any analogy between thought and any one of the admitted phenomena of matter, we should be justified in accepting the first of these conclusions as the simplest, and as affording a hypothesis most in accordance with the comprehensiveness of natural laws ; but between thought and the physical phenomena of matter there is not only no analogy, but there is no conceivable analogy ; and the obvious and continuous path which we have hitherto followed up in our reasonings from the phenomena of lifeless matter through those of living matter here comes suddenly to an end. The chasm between unconscious life and thought is deep and impassable, and no transitional phenomena can be found by which as by a bridge we

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may span it over; for even from irritability, to which on a superficial view, consciousness may seem related, it is as absolutely distinct as it is from any of the ordinary phenomena of matter.

It has been argued that because physiological activity must be a property of every living cell, psychical activity must be equally so, and the language of the metaphysician has been carried into biology, and the "cell soul" spoken of as a conception inseparable from that of life.

That psychical phenomena, however, characterised as they essentially are by consciousness, are not necessarily co-extensive with those of life, there cannot be a doubt. How far back in the scale of life consciousness may exist we have as yet no means of determining, nor is it necessary for our argument that we should.

I believe that Professor Huxley intended to apply his argument only to the phenomena of life in the stricter sense of the word. As such it is conclusive. But when it is pushed further, and extended to the phenomena of consciousness, it loses all its force. The analogy, perfectly valid in the former case here fails. The properties of the chemical compound are like those of its components, still physical properties. They come within the wide category of the universally accepted properties of matter, while those of consciousness belong to a category absolutely distinct—one which presents not a trace of a connection with any of those which physicists have agreed in assigning to matter as its proper characteristics. The argument thus breaks down, for its force depends on analogy alone, and here all analogy vanishes.

But have we, it may be asked, made in all this one step forward towards an explanation of the phenomena of consciousness or the discovery of its source? Assuredly not. The power of conceiving of a substance different from that of matter is still beyond the limits of human intelligence, and the physical or objective conditions which are the concomitants of thought are the only ones of which it is possible to know anything, and the only ones whose study is of value.

We are not, however, on that account forced to the conclusion that there is nothing in the universe but matter and force. The simplest physical law is absolutely inconceivable by the highest of the brutes, and no one would be justified in assuming that man had already attained the limit of his powers. Whatever may be that mysterious bond which connects organisation with psychical endowments, the one grand fact—a fact of inestimable importance—stands out clear and freed from all obscurity and doubt, that from the first dawn of intelligence there is with every advance in organisation a corresponding advance in mind. Mind as well as body is thus travelling onwards through higher and still higher phases; the great law of

Evolution is shaping the destiny of our race; and though now we may at most but indicate some weak point in the generalisation which would refer consciousness as well as life to a common material source, who can say that in the far off future there may not yet be evolved other and higher faculties from which light may stream in upon the darkness, and reveal to man the great mystery of Thought?

Thereupon is great joy among the votaries of Materialism—meaning by this term those who deny the existence of anything other than the protoplasmic structure that grows, matures, decays and dies,—that is to say, is resolved into its elements. “There is an end,” they say, “to your psychological dream. Behold the stuff of which you are formed! Lo, what life comes to! See here, what you were, what you will be—a mere spoonful of jelly. No place for Soul there. You cannot find it anywhere in that piece of pulp. In your origin there is nothing to distinguish you from the caterpillar or the cabbage. Cease then to prate of Soul, or Spirit, or whatever you are pleased to call it. Your life is in the cell structure out of which you are formed—yourself is but the collective sensation of the infinite small sensations of the infinite cells that have grown one out of the other by the expansion of that protoplasmic pulp, and death is only the disintegration or the collapse of those cells whose agglomerated lives made your life. Let Soul henceforth be relegated to the region of dream. Let your Psychological Society acknowledge the baselessness of its Science, and retire from the vain endeavour to chase a phantom and prove the impossible.”

Such in substance is the argument drawn by the materialists from the protoplasmic teachings of Professor ALLMAN’s address.

Has Psychology an answer? Yes. A triumphant answer.

Do we dispute the President’s facts or his philosophy? Not one whit. Do we call his theory of protoplasm a dream? By no means. On the contrary, we accept it

entirely as a proved reality. We greet with a hearty welcome that *Ultima Thule* of the Materialists.

You have traced Man to his elements, and what do you find? The identical elements to which you trace the beast, the bird, the fish, the tree, the fungus. You can distinguish nothing in the jellies to indicate what they were or what they will be.

But here you suddenly stand still. The world that has been admiring your ingenuity in experiment, your skill in marshalling your facts, the facility with which you draw conclusions from those facts, is looking with eager curiosity for the next step in your exploration. You have presented to science in a saucer your wonderful element of a Man, or to speak more correctly, that wonderful element of all organic life.—The world, anxiously hanging upon your lips, implores you to carry your researches just one small step further, and tell how that uniform protoplasm becomes a man, a mite, a mussel, or a moss-rose.

We pause for a reply.

What! is Science silent? Are Scientists dumb? Can it be that the hitherto omniscient confess to ignorance?

It is even so. "We can go no further," they say, "than this protoplasmic jelly. Here our senses and our instruments fail us alike. We cannot even indulge in conjecture why this bit of protoplasm becomes a man, or that a mollusc, or that a moss-rose. We admit our ignorance. We do not seek to dissipate it. We know that it is unknowable. We will not, therefore, look an inch beyond this protoplasm. We cannot conceive of anything we do not see, and we will see nothing that is inconceivable. Human perception can penetrate no further. Protoplasm, the visible material of life, is the limit of research. Beyond it is a barrier science cannot pass nor can it ever hope to pass."

This is what the Physicists said twelve months ago, and all who questioned their dogma were at once denounced as
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fools or lunatics—the victims of delusion or of “diluted insanity.”

But Humanity needs not therefore to despair. Physical Science has indeed failed where most the world desired enlightenment. At the point where it had deemed itself strongest, it proves to be weakest. At this point it is that another Science—a Science the Physiologists have derided, and whose very title they have disputed, leaps the barrier that has baffled Physical Science, and waves its votaries onward and upwards to a new world of knowledge. Psychology marches forward from the very point at which Physiology has halted ignominiously.

So far we have travelled together. The Psychologists dispute nothing of the teachings of the Physiologists. We admit every detail of the Mechanism of the Body, as taught by the most advanced Physiology. We accept, not reluctantly, but cheerfully and hopefully, the protoplasmic theory. It will be the future firm basis of our Psychology.

There, then, is protoplasm, the material in which Life is inherent. Physiologists do not profess to know, and we do not pretend to know, *what Life is* nor in what it inheres, nor how it is associated with the ultimate particles of matter. It is not a perceptible entity; we know it as a quality or attribute of certain combinations of matter. It belongs, say the Physiologists, to the atoms of protoplasm, and is propagated by the expansion and side growth of cells.

So far good—but beyond? No light—no voice.

Psychology steps upon the scene and claims a hearing. She takes up the wondrous tale at the point at which Physiology was baffled confessing its incompetency to advance.

Hear her!

“Thanks, a thousand thanks to you, Physiologists, for your discovery of protoplasm! My difficulty has been to account for the presence of life. My chief mission has been

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to investigate the force that *directs* the motions of the mechanism of man. I deemed it to be something other than the force that moves the mechanism, because that force was present in all other organised being. But it was difficult to sever experimentally these two forces, and almost impossible to divest the popular mind of the conception of their identity. This difficulty has been removed—Physiology has found the elements in which Life resides—and shown that Life alone is not the force that directs and determines the motions of the mechanism.

“Take, then, this protoplasm, instinct with life—the protoplasm of ALLMAN and HUXLEY—this uniform gelatinous mass,—this embryo of animated being. I ask, what is it that moulds this mass into definite and different organic structures ?

“What causes this bit of jelly to develope into a man, and that into a cabbage ?”

Now that is precisely the subject-matter of our Science of Psychology. Surely a sufficiently real subject—a sufficiently rational subject—a sufficiently important subject, to invite investigation, claim labour and thought and command the attention of the loftiest intellects.

For this much at least is certain—*something* is at work with that protoplasm—*something* moulds that uniform pulp into the infinite variety of living forms we see.

What is that *something* which seizes and shapes that homogeneous protoplasm and constructs out of it the marvellous mechanism of man, and the no less marvellous mechanism of beast, and bird, and flower ?

That *Something*, whatever it be, is what we Psychologists intend when we speak of “Soul” or “Spirit.” Our reference is to *the Thing* that takes to itself the protoplasmic elements of life, and builds about itself the complicated body that is perceptible to our senses.

That *Something* indeed is invisible, impalpable, imperceptible by any of our five senses. But not the less
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is it because it is imperceptible. We know—Professor ALLMAN admits—that it *must be there*, because we see the shape it takes when it arises out of protoplasm. It is not a fancy—a conjecture—a craze—but a *reality*. Protoplasm would remain as a jelly for ever unless *Something* moved among it and moulded it into the forms of individual being.

And the forms so moulded are definite forms. They are not merely sportive shapes infinitely varied: they are beings—individuals—conscious selves—having sensations and existing for definite ends.

They rise, as it were, out of the ocean of protoplasm, take shapes, live lives, play a part in the scheme of creation, and, having played their part, the protoplasmic structures are dissolved and fall back again into that ocean of protoplasm whence they had emerged!

What, then, is the *Something* that takes these shapes, and thus becomes perceptible and plays a part in this molecular portion of creation?

I repeat this is what Psychology calls “Soul” or “Spirit,” but whose existence, hitherto denied and derided by Physical Science, that very Science, by the discovery of protoplasm, has proved to be a fact, and, more than this, has publicly acknowledged it.

And what does it prove?

This. There is something invisible, impalpable, imperceptible by our imperfect senses, that broods upon, or more probably permeates, that Protoplasm, giving to it shape and character, sensation, consciousness, individuality and intelligence. Itself imperceptible by the cell-formed senses, that something becomes perceptible when it clothes itself with protoplasmic matter as with a garment. Of its own power or by any conceivable indwelling force, *protoplasm could not mould itself* even into the structure of a monad, much less into the curiously complicated Mechanism of Man, with his self-consciousness and his intelligence? Is it not more reasonable and probable that the forms so

emerging from the protoplasmic jelly are *not* the automatic products of that jelly, but that the independent existences borrow the protoplasmic cells, with their inherent life-force, for the performance of their work in a world constructed of molecules—protoplasm itself being a special molecular combination of atoms the function of which is—Life?

Professor ALLMAN distinctly recognises this conclusion from the facts, not indeed as an established truth, but as the probable presumption from those facts.—“Here,” he says, “we stand upon the boundary between life in its proper conception as a group of phenomena having irritability as their common bond, and *that other and higher group of phenomena which we designate as consciousness or thought, and which, however intimately connected with those of life, are yet essentially distinct from them.*”

Verily this is a grand truth to be proclaimed from the platform of the British Association. Remember that it is an eloquent and emphatic repudiation of the Materialism that has hitherto been taught from that platform. It is to us a great triumph, for it is a distinct acceptance of the principle for which Psychology has so long fought, and upon which its claim to be a Science,—namely, the existence of some entity other than the protoplasmic structure; an entity existing under other conditions and doubtless subject to other laws of being than is the molecular mechanism whose formation, growth, decline and dissolution, are presented to our material senses.

This entity is what, for lack of a better name, we call “Soul” or “Spirit.” The province of our Science is the investigation of that entity recognised by Professor ALLMAN as being “exhibited in other and a higher group of phenomena” than the phenomena of life.

But, having thus practically accepted the basis of Psychology, we do emphatically protest against the President's conclusion, that at this point there is a barrier

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impassable by human intelligence. He asserts that, although something other than protoplasm exists, we can know nothing beyond that protoplasm. "Have we," he says, "made in all this one step further towards an explanation of the phenomena of consciousness, or the discovery of its source? Assuredly not. The power of conceiving a substance differing from that of matter is still beyond the limits of human intelligence." "But," he adds, "we are not on that account forced to the conclusion that there is nothing in the Universe but matter and force."

Psychology joins issue with him as to *this*. We admit the existence of other combinations of atoms than that which makes molecule, which is but the one of the infinite combinations of atoms our senses are constructed to perceive. But we deny that such an entity is either absolutely inconceivable, or that there is any difficulty in the conception of it. The question is not, can we conceive this, but, *do such non-molecular forms exist as a fact in nature, and is it practicable for Science to learn something of them?*

Psychology asserts that not only can it conceive of such non-protoplasmic entities, but that it is within its capacity not merely to prove their existence, but to discover much in relation to their nature, powers and functions.

And how does Psychology propose to do this? By noting the action of that imperceptible *something* upon the perceptible protoplasmic structure and the inorganic substances that are perceptible to the senses because they are molecular. We claim to have accomplished already not a little in this direction and we hope to discover very much more hereafter.

Hitherto we have been met by denial on the part of Physicists of the existence of anything but the protoplasmic material of life. "Your Science," they have said, "is no science, for that which it professes to investigate is non-existing—it *cannot* be, and therefore it is not."

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But now their President asserts its existence. But he adds that it is inconceivable and therefore unknowable.

Psychology replies that it can be conceived without difficulty, and investigated by the same process as the Physical Sciences are explored, by observation of phenomena and gathering together of facts for its foundation.

But half the controversy is closed by the President's address; and this is the event in the review of the past year which Psychology may fairly claim for itself as a great victory.

Now, while this conversion of Physicists to the fact that there is something other than protoplasm that moulds protoplasm to shape and intelligence has been proceeding without, the Society has not been idle within itself. It has inaugurated what may prove to be the beginning of a new era in scientific research. Some years ago I ventured a suggestion that a vast advantage would be won for Science if a scientific tribunal could be established for trial of alleged scientific experiments and observations, by whom witnesses might be heard to detail the facts, to whom arguments based upon those facts might be addressed, and thus the truth ascertained by the hearing of both sides under the test of cross-examination, precisely as we pursue the truth in disputed matters in the business of life and in our Courts of Justice.

The suggestion found very general approval, but there were obvious practical difficulties in the way of its adoption as a scheme applicable to all scientific research. Nevertheless, there was no apparent objection to making trial of it by individual Societies, and it seemed to be specially adapted for such a Society as this, which avows itself a collector of *facts*. The scheme was new, but it was fraught with obvious advantages. The only question was, if it would find approval and encouragement with the members and the public.

The novelty was peculiarly adapted for the promotion of
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Psychology as a Science the facts and phenomena of which, having been but lately investigated, were, like all novelties, received with more or less of denial or doubt. It was obviously desirable that the evidence should be thoroughly sifted before it was accepted as the basis for scientific deduction. The proposal was that evidence should be taken in the open court of the Meetings of the Society, where the voluntary testimony of witnesses could be examined and cross-examined, and the precise extent and nature of their observations and experiments ascertained by that which experience has shown to be the only test of truth.

We felt that if this could be accomplished it would be of inestimable value, not to this Society alone, but to all science—for, if successful here, the example would very likely be largely followed by other Scientific Associations.

Our only doubt was, if witnesses would present themselves so confident in the correctness of their observations and the truth of their statements as thus to avouch them where they could be at once subjected to critical examination.

The experiment was tried at the close of the last session with a success surpassing our anticipations. Two evenings were devoted to this most interesting and instructive work. It must be confessed that the reading of papers, however learned, is for the most part somewhat tedious to an audience. But *vivâ voce* examination is singularly lively and amusing. Moreover, it is in truth far more instructive, inasmuch as it conveys to the audience facts instead of mere disquisition. So it proved in practice. The scheme will be continued during the present session, so long, at least, as witnesses present themselves, and of these there is no lack. To perfect the scheme, evidence and examination are followed by discussion, expressly to elicit from those who have heard it opinions as to the causes and consequences,

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the worth or the worthlessness, of the facts and phenomena that have been thus attested.

It would, of course, be extremely desirable if the valuable evidence so taken could be printed and circulated. But the funds of the Society do not permit of so costly an enterprise. A suggestion has been made that a report should be published periodically, at a moderate price, for the use of those who may desire to preserve minutes of the proceedings. If some such arrangement could be made, the Council would gladly adopt it.

If the past year has been so productive of advantage to Psychological Science, we may venture to hope for much more from the Session that opens to-day. We stand upon far firmer ground now than we occupied when we commenced our work. The very foundations of our Science were then denied almost with indignation. Now, as I have shown you, Science in its highest place and from the lips of its chosen mouthpiece, has confessed, not only that there is a point at which Physiology ends, but that at that point some other Science begins, a Science that relates to something beyond Physiology, and which Physiology can neither explore nor explain. That grand task of exploration and explanation is the proper province of Psychology. Physiology descends from structure to protoplasm. Psychology, moving onward and upward, ascends from protoplasm to Soul. Physiology reduces Man to a jelly; Psychology lifts him to an immortality. There is in the pursuit of this our Science a grandeur and a dignity that cannot fail to impart something of themselves to the Student who honestly enters upon the path with brave resolve to pursue it to the end.

And what is that end? Knowing what we know, and seeing what we see, there can be little doubt of the goal at which we shall arrive. It is indeed, as yet, very dimly and doubtfully to be perceived, afar off, and more, perhaps, by the eye of faith than by the sensual eye. But to that end

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tend every new fact revealed to us and all investigations of the causes of observed phenomena. It is, in truth, the only reasonable solution of the problem which protoplasm has presented to the thoughtful mind of Professor ALLMAN. It is here advanced, not as a dogma (Psychology has no dogmas, it is a learner not a teacher), but as a suggestion merely, based, however, upon some, though avowedly as yet imperfect, knowledge of facts.

The suggestion is that there is a Soul in Nature—that Nature itself is Soul; that all the molecular structures perceptible by our senses are not the substance but the incrustation, the shell, the integument only, of the non-molecular something that underlies it and gives to it shape and character. For this is the grand mystery of *all* being—of inorganic equally with organic structure—*what shapes it?*—Why does it take certain definite forms and no other? To this question Science has not condescended to give attention. I do not remember that ever it has been asked by any Scientist. It is not enough to say that it is the fiat of Divinity; for Divinity has manifestly established the reign of law—creation is by evolution. We say that the formative force is that something we call Soul, and seeing that force in operation everywhere, and everything taking some definite shape, it is surely a reasonable conclusion that the shaping Soul is everywhere.

But if everywhere, in what condition of existence? What, in fact, should we see if our eyes were suddenly endowed with a power of vision competent to receive and convey to the mind the impressions of non-molecular being, as now they are of molecular being?

Without stirring a step, without the addition of an inch to the range of vision, within the circle which a minute before was a void about which was scattered a few visible things, we should witness a new world, thronged with inhabitants. The embodied Souls of Men would be seen

more plainly than their bodies were seen before by the natural eye. The Soul would appear as the substance of the Man and the molecular body as a mere clothing of the Soul, that is in fact the Man. We should see that Soul (or Spirit) often exercising influences upon other substances outside the body, and often enabled to hold direct communication with the Souls having other bodies without the intervention of those bodies. We should doubtless see forms like our own, but which, being of non-molecular structure, we could not see with our molecular vision. The world thus revealed would possibly be a reflex of that we call our world. All space might well be peopled with some forms of being—"but while this muddy vesture of decay doth grossly hem us in we cannot see it."

This is but one of the vast regions that present themselves to the Psychologist for exploration. I ask you, then, to give your hearty co-operation in the great work that lies before us. It is not dull work, nor tedious work, for every step opens to you new wonders. It is not "harsh and rugged as dull fools suppose, but musical as is Apollo's lute." It teems with questions the most interesting—the most elevating—that could engage the intelligence. We believe that by instituting the *vivâ voce* examinations of witnesses, we have given a new and vastly increased impetus to the progress of Psychological Science, enlisting, as it does, the ears and thoughts of those who could not give the needful attention to mere disquisition. You can best promote this great work by your presence at these amusing and instructive investigations, submitting doubts, asking particulars and suggesting explanations. That is the present duty of this Society, and to that we earnestly invite you, believing that it has opened the true pathway to the certain triumphs that await our Science in the future.