

*Practicable Mental Science. A scientific comparison of established views and recent developments in Psychology.* By KENNETH McLEOD, A.M., M.D. Edin., Certified Student in Medical Psychology and Mental Diseases of the University of Edinburgh, and Assistant Medical Officer of the Durham County Asylum, Sedgfield.

Two recent numbers of the 'Journal of Mental Science' contain two communications, respectively entitled—

1. *On the Principles and Method of a practical Science of Mind.* By Dr. THOMAS LAYCOCK. (Journal, January, 1862.)
2. *On the practical use of Mental Science.* By Dr. J. STEPHENSON BUSHNAN. (Journal, April, 1862.)

These papers represent the deliberate and matured deliverance, in a more or less systematic form, of two scientific gentlemen, physicians and practical psychologists, upon a subject undoubtedly the most important that can occupy the minds of men.

The communications are in especial interesting to the Association, which has established the Journal for the very purpose of discussing such subjects, and whose members look to it for instruction and guidance in those matters which form the principal concern of their lives.

It is, then, a matter not only of intense interest, but of singular importance, to examine these papers severally and comparatively, and thus to ascertain if they coincide either in general principles or special details, what they express in common, and if they differ, which is most in accordance with reason and experience, and most worthy of acceptance as a guide and rule. Most of the readers of the Association Journal—and these include the most, and most assiduous and earnest and enlightened of British psychologists, and not a few continental alienists of note, all of whom take a most lively concern in this and allied topics—will have come to some decision upon the matter already, will have judged each and both according to acquired information and experience, and opinions formed thereon, and concluded as to their merit or demerit, their truth and trustworthiness as a guide, or the reverse. Still a systematic comparison of the papers of Drs. Laycock and Bushnan, of what in them is peculiar to the writers or representative of a psychological school, cannot fail to produce benefit and lead to the development of truthful principles.

It has fallen to our lot, as an educational sequence in this department of knowledge—(1) to have obtained a thorough training in the Scotch school of philosophy and psychology, the school of Reid, Stewart and Hamilton, and to have eagerly imbibed and implicitly believed their tenets. (2) As the result of metaphysical thought upon a physiological subject, to have elaborated a teleological system, having in it many features in common with that of Dr. Laycock, before we became acquainted with his philosophy.\* (3) To have learnt, as Dr. Laycock's class-assistant, from personal intercourse, from his lectures, his clinical instructions, and his books, the leading principles and *practical application* of his system. (4) To have, during the last twelve months, served in a county asylum where the practice has been active and experience considerable. We trust, therefore, that that amount of knowledge has been acquired, and that degree of mental and scientific discipline attained, which will warrant us in attempting an examination and comparison of the papers cited.

In pursuance of our design, we shall, after passing Dr. Laycock's and Dr. Bushnan's papers in review generally, come to close quarters with them, and, in as fair and accurate a way as possible, obtain from each an answer to the vital questions—

I. What is the *object* and design of each? What, in the expressed opinion of each, constitutes, or ought to constitute, "a practical science of mind"? *What*, according to each, have we to know, and seek to know, and where?

II. What is the *method* of each? What the principles, suggestions, instructions, which are intended to direct, assist, and control us in the attainment of a practical science of mind? *How* are we to know and seek to know—investigate—in order for practice or performance?

III. What *results* are exhibited by each of the practicability of their doctrines? Or how, when they are fairly and fully applied, brought face to face with nature and fact, do they stand the test, assist, or produce?

On looking generally at the papers under review, we find Dr. Laycock in the position of a defendant. His system of psychology, as set forth in his published works, a system containing in many essentials what is opposed to the established faith, and very much in addition to it, had been assailed by Dr. Bushnan, who, as the advocate of the philosophy of the schools, attempted to repel objections stated or implied to former belief and method, breaches of psychological canon, and to cripple the facts investigated and conclusions established according to the new method, thus acting at once the part of conservation and destruction—conservation of existing views

\* An unpublished graduation thesis, entitled 'On the Homologies of Limbs.'

and beliefs, and unsparing destruction of aught not in conformity with these. Although Dr. Laycock's paper is defensive and controversial, rebutting the arguments and assaults of his opponent, still in it we have a concise and compact statement of his doctrines, set out more summarily and practically than in his book, and admirably available for instructing any one previously unacquainted with his peculiarities, forming, as it does, a digest of or index to his work, on which it rests, and with which it altogether coincides. The expository predominates over the controversial, and the communication is divided into distinct sections, devoted to the inculcating and illustrating of particular doctrines. Dr. Bushnan's paper is altogether expository, and the controversial does not at all appear in it. Still it stands in the controversy series, and seems to be a studied exposition and protest—an exposition after the prevailing fashion of practical writing, attempting to exhibit the practicability of dogmas and doctrines already in vogue, those which he was taught, and whose truth has been, until recently, unquestioned; a protest against the folly and futility of attempting anything different or in addition to what is already known and believed. Such a production is valuable, whether true or false. If true, then it does establish a strong presumption of the futility of anything besides or beyond; and if false, affords a most excellent ground for comparative examination such as we attempt.

The other papers of the series, those more purely controversial, will throw light upon doubtful assertions, especially the last. (Journal, July, 1862.) Before plunging *in medias res* we will first examine and compare the titles and general style and nomenclature of the papers.

I. THE TITLES are as follows :

“The practical *use* of mental science.”

“The principles and *method* of a practical science of mind.”

1. Dr. Bushnan's mode of entitling his communication represents a delusion as to the complete distinction between “the practical” and “the scientific,” which appears very prominently in all his papers, and forms the subject of some of his hardest controversial hits. Further on in the same paper he speaks of “practical psychology, as *superadded* to scientific psychology” (p. 133). Still more explicitly he says, at p. 242, Journal, July, 1862, “What is the practical? With what does the practical deal? Does not the practical deal with individuals, while the scientific deals with species, genera, order, classes?”—as if species, &c., were not an expression of individuals, and could exist in generalisation or notion without or apart from individuals, unless we are to understand the passage as stating a new and fictitious realism. We have here a most complete differentiation of “the practical” and “the scientific;” a positive statement that “the practical” concerns one thing, and “the scientific” another.

Stranger still, Dr. Bushnan asserts that his two artificially differentiated and unified departments of knowledge have a different mode and principle of knowing, and a different means of investigation. We are, "in short, to seek 'the practical' in a direction opposite to generalisation" (p. 242). And, again, "Dr. Laycock affects to think that we teach that the inductive method is not the way to advancement in science" (p. 243), therefore that it is so in practice, which is distinct and different, and opposed in sphere, object and method—an accusation which he scouts. Then comes a climax:—"How sorry a figure will Dr. Laycock make if he resorts to such a defence as that practical improvement depends on scientific improvement; and if generalisation be the way to scientific improvement, therefore it is the way to practical improvement."

Finally—"There is *as little doubt* as to generalisation being the usual mode in which scientific improvement is made, as that deduction, or the method opposite to generalisation, is the principal means by which practical improvement is accomplished." Dr. Laycock has already, in a paragraph specially devoted to the subject, vindicated pointedly and unmistakably the truth, which is a necessary axiom in all science whatever, and in the assertion of which "he makes such a sorry figure." Dr. Bushnan cannot resist its concise reality, although he disposes of it in two lines, but attempts to get out of his position by modifying the assertion which Dr. Laycock criticises, after quoting it *correctly*.

As Dr. Bushnan, whose statements avowedly represent *ideas*, not things, appears to us to misapprehend the real import of what science and practice are, and to be ignorant of their mutual dependencies and relations, we shall try, in all humility, to show what these are. He appears to entertain a mystic, misty notion of the one, and a rough, granitic conception of the other. Science, according to him, is a system of "pure abstractions;" practice, or "the practical," a rude contact with individuals. We will not, however, permit Dr. Bushnan the merit of singularity in this matter.

Aristotle says, "Science is conversant with things unalterable, necessary, and eternal; incapable of being generated, exempt from corruption; the knowledge of which admits not of degrees between total ignorance and absolute certainty." ('Ethics,' lib. vi, cap. 3.) Sir William Hamilton calls science "a complement of cognitions, having in point of form the character of logical perfection, and in point of matter the character of real truth." I might cite many other psychologists of the old school who define science similarly, and limit the term to the expression of what Ferrier denominates "the unchangeable (or permanent), necessary (or essential), universal (or common or general), in cognition." ('Institutes,' p. 153.) Metaphysical or ontological truth of the most general and abstract character.

Karslake puts the point most clearly. He says, "In science, *sciamus ut sciamus* ('the scientific'); in art, *sciamus ut producamus* ('the practical'). And therefore science and art may be said to be investigations of truth; but one—science—inquires for the sake of knowledge; the other—art—for the sake of production. And hence science is most concerned with the higher truths and art with the lower; and science never is engaged, as art is, in productive application. And the most perfect state of *science*, therefore, will be the most high and accurate inquiry; the perfection of art, the most apt and efficient system of rules; art always throwing itself into the form of rules." ('Aids to Logic,' b. i, p. 24.) This is exactly Dr. Bushnan's creed, though tamely expressed; for Dr. Bushnan does not admit the *sciamus* in "the practical," but "deduces" from the *sciamus* of "the scientific"—of higher truths—how and with what result we shall see.

Now, what is science? Simply knowledge—cognition—impression—presentation. It is the *incidence* in man's reflex existence. It is the experience of every vital change within us, in or by which we feel, think, or know (Laycock, 'Mind and Brain,' vol. ii, p. 81, § 447.) It includes every sensation, perception, act of attention, memory, reflection, conation, every state of consciousness of the individual during his whole existence, and the united experience of the race. Such is science, the entrance of which may be involuntary, systematised after its acquisition, or the result of a designed *conemur*, that we may systematically know. It is one and indivisible, and implies all the knowledge that man or mankind can obtain of himself or the external—all cognition.

It may, of course, be logically and truly divided according to its subject matter; and such the instinct and sense of man has led him to do. Thus, we have the science of abstract ontological truths—metaphysical ideas presented as intuitions in consciousness by the working brain; and we may establish these as a category, and call the collection and system necessary, intuitive, absolute, actual, &c. &c.; and the science of more special and particular modes of existence, which we categorise as contingent, accidental, variable, &c. &c.; and we may still further subdivide—and it is done to a very great extent—and single out as many sciences or ologies as there are attained or attainable facts of nature and creation. But the notion of calling ontological (metaphysical) truths—whether obtained by abstraction or generalisation from any fact or facts, or revealed in the consciousness of man as intuition—science, and that only, and asserting that the method of attaining such knowledge, and such only, is generalisation, is preposterous; while we are at the same time actually told that our knowledge of individuals—beings or things, we suppose, not actions—is not a part of science and "the scientific," the very name and perception of any individual being a generalisation, and though

an instinctive one, as truly one as the most abstract ontological truth. It is true enough that, before we arrive at any metaphysical or ontological fact, we must generalise, or *accept as a fact our cognition in consciousness of a generalisation, physiologically accomplished in and by the working brain, in virtue of its organization and action* (intuitions). Thus our principles of action and truths of existence (and we can know nought beyond facts of mode of existence) may be derived cognitively by generalisation from one object by successive abstractions, or from many by abstraction of what is common to all; or intuitionally attained, by the experience of the general principles (noetic, teleiotic ideas) of the organization and action of the working brain. But this we assert, as the foundation of all philosophy whatever—as that truth without which philosophy is a delusion and a falsity—that science is one, and its mode is one—observation, cognition, experience, incidence, presentation, and generalisation; that truths otherwise attainable by inductive comparison may in all degrees of abstraction become objects of cognition as intuitions, and in that degree of generality, and may be generalised to a higher degree; but that no truth of greater particularity can be obtained from the more general in any way whatever, but must be arrived at by direct cognition or generalisation from what is lower still. And we protest, in behalf of Bacon and his system, in behalf of science, its servants and votaries, against the fatal notion that “deduction (syllogistic logic), or the method opposite to generalisation, is the *principal means* by which practical improvement is accomplished.” Its use, at best, is speculative, designed, and systematic conation to science, but a process merely tentatively preparatory to the exercise of observation and generalisation, the only modes of attaining any knowledge whatever.

Dr. Laycock states, as the only other modes of knowing or pretending to know other than by observation and generalisation—1, mere practical tact or dexterity, without a distinct perception or knowledge of general laws and principles, commonly known as the “rule of thumb,” which science enlightens; and 2, the deductive or *à priori* method, by which principles are reached by logic instead of observation and research.

The first of these modes is an instructive, incomplete, and unsystematic observation and generalisation, such as *must of necessity* obtain in “the practical,” if *scientific* induction is eliminated as a mode of inquiry; and the second is that which Dr. Bushnan confessedly advocates, as the “principal means by which practical improvement is accomplished.”

Let us next ask what is practice, or “the practical?” It is nothing else than *action*—representation—expression—the *excidence* of the unit man. It stands in this relation to science, that it is consciously or unconsciously *doing*, and science consciously or unconsciously



knowing; that the more and better (more systematically and truly) we know, the better we do, and that in *doing* we come to know, that is, learn by experience. That whereas knowledge may be instinctive or intuitive, so may practice or action; and that both in knowing and doing the *general principles* of knowing and doing are invariably instinctive and intuitive.

Now, whereas observation, comparison, abstraction, and generalisation, are the modes, and only modes of knowing; so design, force, and action, are the only modes of doing. Designing stands to doing in exactly the same relation as generalisation to knowing. They are *homologues*, principles of knowing and acting; the correlatives in cognition and representation of each other and of the teleiotic *ideas*, cosmic, biotic, and noetic, which they represent. Thus, in truth and reality, the scientific (knowing) and practical (doing) are not only different, but opposite; the one the incidence, the other the excidence, of the reflex action of conscious or unconscious man, who observes and generalises *quoad* the one, designs and acts *quoad* the other. This is the foremost and fundamental truth in the teleological psychology of the present day, which affirms intuitive or metaphysical ideas, not only in existence or cognition, but also in action.

But this is not Dr. Bushnan's belief or statement. If "practical use" and "mental science" were meant and applied in the way we have developed and stated, then the expressions would not only be correct, but excellent; but, as we shall see in examining the papers more minutely, "*mental science*" means with him a system of ontological laws, and obtained by empirical intuition, and "*practical use*" either a rule of thumb induction or the logical deduction of these laws. Dr. Bucknill, who is, we presume, a psychologist of the old school, represents our convictions on this subject very clearly when he says, "But while we admit that metaphysics may be called one department of mental science, we maintain that mental physiology and mental pathology are also mental science under a different aspect. While metaphysics may be called speculative mental science (speculative science?), mental physiology and pathology, with their vast range of inquiry (induction) into insanity, education, crime, and all things which tend to preserve mental health or to produce mental disease, are not less questions of mental science in its practical, that is, in its sociological, point of view." (Journal, April, 1861, p. 138.) Our only objection to this sentence is that it does not, as Dr. Laycock does, recognise all science, metaphysical and practical, as available for practical as well as sociological use. A striking and true corollary to this proposition is, that any so-called scientific fact or system of facts, not available for practical and sociological use, is no science at all.

Dr. Bucknill's view and definition is a transition to another view, which is entertained by many men of eminence, viz., that meta-

physics is one thing and science another; that science ought, as a definitive term, only to concern and express *facts* gained by induction—objective perception; and that metaphysics, as a more or less speculative system, is truly not science. This view is perfectly correct if metaphysics include and express facts of the universal and absolute in existence, as different from the universal and absolute in cognition. The former may be the latter, but it may not; and this presumption of contingency of our universal gives *pro tanto* a presumption of inaccuracy of facts of our universal when raised into the universal, unless it can be proved that the two coincide, which it cannot.

2. Dr. Laycock's title is logically more correct and certainly more promising of something useful to come. Practical is adjectively connected with science, without qualification or limit, implying, among other things—(a) That knowledge is logically necessary for performance, consciously, just as impression or incidence is necessary for expression or evidence. (b) That generalised systematic knowledge is necessary for any adapted performance. These two propositions involve the corresponding corollaries—that the more and more minutely we know, the more efficiently we perform; and that the more complete our system of generalisation, the more safe and certain our performances. (c) That all science is one, and that its principles in cognition are the principles and causes of practical manifestation, adapted representation, production, construction, designed and adapted art, whether voluntary or involuntary, consciously adapted or reflex. (d) That not only is the science of the contingent and variable of the individual and its description, whether being, thing, or action, and the systematic knowledge of these by generalisation, necessary for practice, and the more minute and particular the knowledge (obtained, however, by induction, not logic) the more certain and excellent and useful the practice; but that ontological and metaphysical facts which are repeated in consciousness as intuitional cognitions are the causal ideas in adapted manifestation, whether conscious or unconscious, voluntary or involuntary.

We have thus, in the expression which entitles this communication, an exposition of what a science, to practise, is and ought to be. What the paper professes to indicate is the principles and methods upon which the attainment of such a practical science rest.

II. The *style* and *nomenclature* of the productions under review are matter of interest and comment only in respect of the general law that the mode of arrangement and expression is a fair index of the philosophy (mode of thought) of the writer, and the reality and truth of the substance of the paper. Dr. Bushnan's paper is diffuse, immethodical, and does not exhibit an approach to logical arrangement or systematic inclusion. The production of a man well read in metaphysical and metaphysico-psychological *writing*, and



frequently exercised in thought upon such subjects, it has a show of learning, reads tolerably well, and has a specious but fallacious aspect of truth of assertion and grasp of subject; but on careful sifting, it is as barren, as a revelation of new fact—or elaboration of new principles—as such an amount of writing upon an important subject well could be.

The nomenclature is equally as metaphorical, mystical, beguiling, and impracticable. The word “man” occurs only about twelve times in this paper, which purports to concern his most intimate and important interests. Ignorance, defect, error, disease, insanity, crime, are hinted at or casually alluded to, or discussed in such a way as to mystify and confuse. Even life and its phenomena are sparingly touched on, and, instead of the being, his existence and its modes, his circumstances and their effect, his condition, errors, crimes, disease, &c., we have “the mind,” a term which occurs upwards of fifty times, unified as a substance and a principle, consciousness spoken of as a condition coexistent with sensation, &c. (p. 137)—a faculty to all intents and purposes—“states of mind,” “states of consciousness,” “outpourings, rushing in mad career,” and “currents of thought,” and—tell it not in Gath—“links in prevailing currents.”

On turning to Dr. Laycock's paper we find a logical division, subdivision,<sup>a</sup> and inclusion; no meandering beyond or out of the design of each particular paragraph, no intermixing or confusion. We are brought in contact with *things*, not ideas, and our understanding and senses, and both these as systematised in science, are constantly appealed to. There may be new doctrines hard to understand, but they are elucidated and illustrated. There may be new words difficult to comprehend, but we find them precise and definite, point to things, not ideas; and there may be new applications of old words, but we find these changes necessary to meet the requirements of wider generalisation and more systematic and established science. *Mind* is no more merely used to express the collective phenomena of consciousness as a unit, but is generalised into a force of the whole universe, wherever designed and adapted action exists, and is manifested by phenomena whose relation and correlation in time and space indicate a causal adaptiveness. It is thus made a subject of scientific investigation as a fact of mode of existence which was not before, besides being brought into CORRELATION *with all other coexisting phenomena*. “Necessary,” and its cognition in consciousness as intuition, are no longer merely properties of those cognitions which, as it were, fill the mind, and leave no room for contingency, but “necessary” is generalised into all existence, as an invariable expression of causal ideas and creative adaptiveness; and by intuitive truth is meant the cognition of a necessary idea, of such a general ontological fact that, as a law, it governs all occurrence in our universal and, therefore, must govern the physiological activity of

the brain. But not only does it exist as a dominant law of brain action, but of every other action as well, so that the same necessary truth which, as a necessary noetic idea is revealed (experienced) intuitively, in consciousness is also capable of being investigated and scientifically observed and stated in every other manifestation or phenomenon whatever. Now, with Dr. Bushnan, necessary and intuitive have the same significance as "the scientific," and he includes all these in his differentiated unity, "the mind," not recognising nor admitting the fact that "the mind," as manifestations or phenomena, must express or represent ontological and biological facts, in common with the rest of existence whose attribute is being or living. This is an excellent example of the truth of error, showing that Dr. Bushnan's brain works according to teleiotic, noetic ideas, ontological and biological law, *unifies*; but that his cognitions are both imperfect and inaccurate, and exhibits practically and concretely to all observers the nature and origin, *physiology* and causation of error. These prefatory remarks will render our comparison much more intelligible and useful, and now we shall take evidence upon the first question raised, and judge accordingly.

I. What is the object, ultimate aim, and design of each? What, in the expressed opinion of each, constitutes, or ought to constitute, a practical science of mind, &c.?

We shall first hear Dr. Bushnan in reply, and produce the following paragraphs from his paper in evidence.

1. "In the practical application of mental science, it is with individual character that we are for the most part engaged" (p. 132).

2. "In short, the chief practical use of mental science is to enable us to deal with and influence *individual minds*" (p. 133).

3. "Practical psychology might be described as the exercise of converting the general laws of suggestion laid down by metaphysicians into particular instances" (p. 134).

4. "It belongs to practical psychology to make an approach, at least, to anticipating such a train of thought as that just cited, when the prevailing *turn* of the *individual mind* has been indicated" (p. 135).

5. "To gain insight into the links of suggestion which are customary in individual minds" (p. 135).

6. "This particular department, the peculiarities of *mind in individuals*, is, in short, the practical part in psychology."

7. "The laws of suggestion, taken as a whole, carry us into the pith and marrow of practical psychology" (p. 139).

8. "It seems evident, from these and similar considerations, that what was termed above physiological psychology bears most on a practical psychology" (p. 152).

("Physiological psychology is the knowledge of the functions of

the animal kingdom, obtained through whatever channel may appear worthy of confidence"—p. 150.)

9. "It will be seen from the general tenor of the observations which I have offered in this paper that I regard a practical psychology as essentially the psychology of individual minds" (p. 152).

10. "Man, in short, is born endowed with certain susceptibilities, destined to be called forth under corresponding conditions; when these conditions arise, the predetermined result follows" (p. 151).

Here are ten paragraphs carefully extracted out of Dr. Bushnan's paper, all of which purport to answer our question, of what he intends to tell us and in what he means to instruct and guide us.

The first fact in their comparison which strikes us is their diversity; not only are they not expressions somewhat similar of the *same thing*, but they vary in the extent of what they include, and actually refer to things really and logically different.

It is curious also to observe that as the desultory discussion advances, mind and consciousness, subjective phenomena, and their kindred metaphysical phantoms, vanish; life, and its laws, peculiarities, and manifestations, are dimly seen through a misty clouding of metaphysical terms, and at last a single paragraph (No. 10 in our enumeration) coming immediately after the discussion of intuitive belief in personal identity and the existence of an external, solemnly in a tone of melancholy sadness, proclaims the essence of a teleological system of psychology, concedes the truth of *all* Dr. Laycock's doctrines, and is logically sufficient to overthrow every principle asserted in the rest of the paper. This transition is both interesting and instructive.

1. Phenomena of consciousness, peculiarities of mind, individual characters, &c.

2. Physiological states of living body, outrageous trains of thought, the result of material impulse on the nervous apparatus, &c.

3. Latent cerebration (*i. e.* mental action without consciousness, which attends upon every sensation, feeling, thought, emotion, passion, volition; in short, every state in which *the mind* can exist) confessedly abolishing consciousness and logically abolishing *the mind* as factors in cerebral activity; reflex cerebration, going further in the same direction.

4. MAN.—Born, endowed, conditions, predetermined results.

We have thus, in the wandering discourse of a man well informed as to the present and past aspects of psychological science, an epitome of the stages of progress of that science, from the pure phenomenal psychology of the ancients down to the most recent development in mental philosophy, namely, Dr. Laycock's teleological system.

No designed or systematic treatise could have done more simply or conclusively what Dr. Bushnan does involuntarily, namely, established the practical worth of the teleological mode of studying

mental phenomena. It is a most valuable tribute to Dr. Laycock, though unwarily rendered, and yields in one short sentence, standing singly and alone, all the recently controverted questions in favour of Dr. Laycock, his doctrines and gathering school, inasmuch as it not only concedes but affirms the fundamental truth of his system.

But the very next paragraph leads us back to No. 8, and that immediately succeeding conveys us to our impracticable starting-point—the author's professed belief and statement of the scope of a practical science of mind; consciousness studied singly in individuals and comparatively in the race, or, rather, the generalities and peculiarities of the mind as evidenced in consciousness. Dr. Bushnan here exhibits the essence of error, excessive or absolute unification. He unifies "*the mind*" as a special object of investigation, and consciousness as a special mode of investigating; and not only is his unification excessive, but it is absolute. The mind is unified out of relation with all known or knowable phenomena whatever, and consciousness is singled out as a mode of obtaining knowledge, different and distinct from all other modes whatever. We have a speciality in its grossest form, and its logical consequence is apparent in the necessary statement of "*the mind*" as a principle and substance, and the proclamation of a duality professedly material and immaterial, but really and truly, in nomenclature, expression, and logical significance, doubly material. Restrained within these limits even if induction, observation and generalisation were Dr. Bushnan's instrument of knowing in this matter, he must necessarily restrict himself to consciousness, according to his definition of it, admit all the evidence which it affords, and exclude all that consciousness does not and cannot reveal; for mental activity, according to his principles, can only be evidenced by consciousness, and any phenomenon whatever not so attested cannot be a phenomenon of "*the mind*." Without arguing the matter further, we strongly state—1. That what Dr. Bushnan proposes for investigation is not an existence, viz., "*the mind*," which even with the more enlightened of old psychologists, is "*the consciousness*." Both are an evidence, are one and the same thing, may coexist with the activity of every fragment of man's nervous system or may not, and at best evidence effects without giving the slightest information of causes, or causes without being able to register effects. Thus, Dr. Bushnan proposes to make an entity of an evidence, to take evidence of the states of the entity by the fictitious entity itself under another name. This cannot fail to end in confusion and error. 2. That if Dr. Bushnan energises at all in the way of scientific discovery, or for the sake of practical science, he must totally and entirely throw aside his principles, and in act adopt others which we shall immediately note. This we shall find Dr. Bushnan constantly and invariably doing. Far be it from us to depreciate the value of the information which we obtain concerning what happens within us

in all relations and conditions and states of our body, *when such can be obtained* (for in many active conditions and states it cannot); but we assert its nature and functions as experience or cognition, and its unity as an informant of vital states, whatever they are, and however caused. Consciousness cannot become an object of scientific inquiry. We can only say of it that it exists as a unity, correlative with the unity man. It is only the contents of consciousness as particular acts that we can know and compare, and these, as they are real existences—changes—are known and believed as facts, in what way whatever the changes arise. In consciousness, we may thus have facts, cosmic, biotic, or noetic existences or actions, and if it is the facts of consciousness thus defined and generalised that are to constitute science, then there can be no disputing that absolutely nothing remains to be desired; but we are limited to the cognisance of *noetic facts*, experiences of cerebration, the modes of association, combination, sequence, &c., of cognitions, of cosmic and biotic facts.

Taken, as it truly is, as a cognition of brain action, whether normal or the reverse, how, in the name of reason and common sense, not to say philosophy and science, can we hence derive facts as to the circumstances under which normal cerebration takes place, or which exalt, confirm, or subvert the mental operations?

If Dr. Bushnan asserts that consciousness only reveals states of "the mind," and that in psychological investigation these states and their succession and relation are the only facts which can constitute the science, or can avail for practical use, then we say, as we trust we have shown, that he labours under a fundamental fallacy, and that the more he systematises and writes on such a foundation the deeper he plunges into confusion and error, and the further he departs from what is feasible and practicable.

If Dr. Bushnan concedes that thought *cannot* take place apart from brain, and grants us that, practically, the knowledge of its conditions and of the vital changes which take place in it, in association with particular "states of mind," is all important in order to influence individual minds, in whatever state, and more especially in a state of disease, how can he, in consciousness, as concerning and containing a particular and different kind and order of facts, and that only, attain to the knowledge of the causes which affect the brain, the state of the brain itself, facts which in order precede the facts to whose cognisance he limits us? Indeed, in consciousness, as he defines it, we could not obtain a knowledge of the existence of a brain at all.

*Finally*, if Dr. Bushnan yields us that, not only the state of the brain, but the condition of the living body, its nutrition, its vital energy, and the right performance of the functions of the various organs, and, as a matter of course, the conditions which cause the condition of the body, as not only coinciding with but causing

certain felt and manifested states of mind and temper, how, in the knowledge of the laws of suggestion, and "the peculiarities of individual minds," are we to know anything at all of cause, proximate or remote, of normal or diseased action; and if we know nothing of the causes, how can we prevent or modify their action and occurrence, so as to influence individual minds or masses of individual "minds."

A practical science of mind must include not only a knowledge of "particular states of mind of individuals," but a knowledge of every state of brain, body, or nature generally, coincident with, or every action and occurrence of each and all causal of, any experienced or manifested "state of mind;" and even then the "state of mind" is but the cognition of a certain mode of existence teleologically conditioned and caused.

Let us now turn to Dr. Laycock's paper. He tells us at the outset that his object is "to determine how far a mental science, in the true meaning of the term science, is possible and capable of practical application to mental pathology, therapeutic, and hygiene, and the needs of society in general." We are here at once introduced to something actual and existing; man's mental imperfections, his diseases, errors, crimes, and tendencies thereto, are made the subject of investigation, and the means which prevent their occurrence, obviate the tendency, or correct the morbid manifestations. "Living man," as he exists on earth, is made the subject of scientific investigation, and not even as a separate unity, but as existing and acting in subjection to the general laws and conditions of the universe and the particular conditions of his existence; and the nervous system and brain of man is investigated as organized and active under these laws, and under the physiological laws of the organism, possessing thus the general properties of all substance, the special properties of living substance, and the still more special endowments of co-ordinating (physiologically abstracting and generalising) nervous substance.

Consciousness is considered as a unity, correlative with man's existence in space and time, is taken as a fact of man's existence, as a being perfectly incapable of being defined, so that the question what is consciousness or what is the mind cannot become a scientific concern.

Now, as all these conditions—cosmic, biotic—are causes in the development, organization, and vital activity of the human being, it follows that no science of him can be complete without a knowledge of these, nor of any vital state of any part of him, nor of any coincident state of consciousness.

And as his normal state demands an amount of knowing so at once minute and comprehensive, *à fortiori* his abnormal states, which can only be remedied when these conditions and causes have been thoroughly explored. "In short, the science must be complete in its scope," must involve everything out of man that has a relation to him,



and everything in man that has a relation to his brain, can influence its state, and consequently modify the state of consciousness.

To bring the matter to an issue, Dr. Bushnan limits our investigations to "states of consciousness," "peculiarities of mind," and unifies this field of research into absolute peculiarity in existence in every possible respect.

Dr. Laycock declares for an unlimited scope, a complete science, which must be etiological if it is to be of the slightest practical value whatever. The crowning merit of his system is that it puts mental phenomena in exactly the same conditions for etiological investigation as any and every other science, unifying all science as the correlative of existence, and cognition as the correlative of both; stating the profound truth that man is cognisant of himself scientifically in exactly the same way that he is cognisant of every other created thing; extracting mind and ontological facts out of consciousness and cognition, and asserting for both their existence in the universe of action.

II. Dr. Laycock and Dr. Bushnan's notion of what a practical science ought to be, where the facts which constitute it are to be obtained, being so diverse, it devolves upon us next to examine how each proceeds to develop a practical science. Dr. Bushnan, true to his fundamental notion, asks, "How, then, are we to proceed to gain insight into the links of suggestion which are customary in individual minds?" (p. 135); postulates a previous acquaintance with all that "scientific psychology teaches us concerning the nature of human feelings, thoughts, emotions, and passions and proceeds to enumerate, as the most obvious means of penetrating into the "recesses of thought," as follows:

1. A careful scrutiny of the characters of others.
2. The study of systems of scientific psychology which generalise mental facts metaphysically.
3. The influence of physiological conditions of the human body in modifying trains of thought.
4. The study of the products of mental activity, man's writing and acts, and imaginative or real records of what man has done and said.

We shall, without reserve, concede to Dr. Bushnan that facts of the kind thus classified are all more or less important as manifestations of mental activity; but we submit—

1. That they are not all admissible on his principles.
2. That after they are attained, they are of no use whatever, according to his method. Even when read and interpreted according to the broad philosophy which demands an etiological science upon teleological principles for practical use, they fall short of such a completeness as to render them available for practice; but when cramped in the fictitious unity which Dr. Bushnan creates for them,

they are utterly delusive as a science and void of use for practice. The only division which at all savours of the feasible is the third, which appears to be rather a concession to present scientific developments than a segment of the legitimate science of psychology according to the author. Let us, however, in order to test his system more minutely, take his divisions into consideration *seriatim*.

1. His first division concerns the careful scrutiny of character. This, even in ordinary parlance, means a considerable amount of information beyond what Dr. Bushnan postulates in a hypothetical impossibility, which would, on his principles, make his science complete. It means a knowledge of the man, not only what may be called his mental generalities and peculiarities, his modes of thought, as manifested in speech, action, writing, behaviour, &c., but his morphological peculiarities, his size, height, temperament, physiognomy, &c., and his physiological peculiarities, rate and kind of motion, gesture, talk. The manifestations of what are purely physical and physiological are as much part of the estimated character as the modes in which thoughts are "accustomed to array themselves." This much the common sense and instinct of mankind have led him to; but when systematised in science, the "character" of a man means an exact and well-taken statement of the peculiarities of his body, its action, as well as the peculiarities of his mental manifestations. A careful register of every such particular constitutes the "case" of an individual; and each well-observed "case" constitutes an instance of the coincidence of certain conditions, morphological, physiological, and psychological, an induction for the sake of comparison with other similar inductions, and generalisation therefrom, generals of all degrees bring deducible from everyone, either physiological or ontological, or from the comparison of several and all. Now, this or such as this is, in our humble apprehension, what constitutes one of the modes of attaining to a science for practice; and as this is our belief, so it is our practice. Every "case," therefore, which it becomes our duty to record is made the subject of induction, according to a fixed mode; coincident facts, morphological, physiological, pathological, and psychological, being stated in as clear and orderly a manner as possible. Any "case" not possessing all the information possibly attainable is in that degree imperfect, and it is a complete and systematic knowledge of coincident phenomena, the preceding and succeeding sequences, the causation and results, and only that, that can enable us to diagnose or prognose, as it is, a complete and thorough knowledge of agencies causing other sequences and coincidences of phenomena in such and such circumstances, and that only that can enable us to treat. Such is the familiar mode of amassing a science for practice, and the results of induction, more or less elaborate, conducted in this way; and according to the care of the conducting and the comprehensive-

ness and minuteness of the induction, the results are more valuable, appear from time to time in our records, and such, we have no doubt, is Dr. Bushnan's own invariable habit. Still, in his efforts to reconcile a delusive and false philosophy with actual occurrence and the needs of mankind, what absurdities does he fall into and enunciate! As the beau ideal of knowledge of character, as the utmost possible amount of psychological attainment, he asks for a minute of all the operation of a man's "mental nature," from the earliest period of consciousness—a considerable time, probably, before birth—down to the last consciousness which precedes death, and warms in the contemplation of the amount of knowledge which might be derived from "sets of pictures of this kind." Even if such pictures were attainable, and, if attainable, capable of expression, could the consciousness of the states and modifications of man's "mental nature" give us the slightest clue whatever to their mode of production, or subserve any practical purposes whatever? As revealed facts of man's "mental nature," they stand absolute; there is nothing to connect them with each other or with facts of any other sort except their sequence; and dissociated from the rest of man's nature, or nature at large, in condition and causation, they cannot form the subject of comparison of any sort; may, as phenomena of man, be interesting to poets, moralists, and so-called philosophers, but cannot be of the slightest service whatever to legislators, lawyers, or physicians, or any who have to deal with man, his existence as a unit in creation, whose laws condition him, his actions and reactions.

Dr. Bushnan cannot admit the contenta of consciousness *in toto* as facts of his science, for this goes beyond the bounds of his science—involves objective perception, includes morphological and physiological psychology, which he repudiates as at all constituting or forming a part of pure science. According to our belief and Dr. Laycock's principles, he thus logically reduces his science to an absolute nullity, for with us consciousness is one, as a state of knowing, is not an object of science itself, the only truth concerning it being that it exists. Its contenta constitute truths of science which would be absolutely perfect if consciousness contained all the facts of creation, past, present, and future, in their actual relation. It is towards this that conscious action and conscious conation points. It is towards this that the brain teleiotically ideates; and if such an amount of knowledge were possible, "the mind" would be simply an existence, a unity in which activity as to anything beyond would be absolutely an impossibility. The existence comprehending would, however, be absolute, have no relativity in time or space, and, as an existence, would be the cause of all activities within, subunities having a sequence in time and coexistence in space. This, indeed, constitutes the scientific notion of God—designing, creating, and upholding. Here meet the greatest cognition and the greatest

power—absolute science and absolute causation. Here rest the causal ideas of existence—in system and inclusion. THIS IS MIND. We have perfect and absolute in this existence what we have derivative, limited, and relative in every other, organized and disorganized. How, then, does Dr. Bushnan attain a science at all? He takes, admitting facts of a certain sort, an arbitrary section of the contents of consciousness, and predicates of them that unity of existence which belongs to all, and that absolute causation which obtains in the universe. In concluding our remarks upon this section we suggest to Dr. Bushnan and his associates in belief and attempted practice on it—

1. That the fact of relation to the external, and the fact of impression by the external and reaction on the external, must constitute the first and most simple elementary, essential state of consciousness—acts of cognition; so that, generalised to the utmost, adult consciousness is identical with what we have every reason to suppose the first consciousness of the individual is, namely, impression from the spermatozoid. This generalisation establishes the unity of consciousness and cognition, the universal scope of science, and the absurdity of artificially cramping it within the limits of a delusive unity.

2. That every fact of consciousness has a causal origin in the external; and—

3. If we admitted the cognitional distinction between consciousness and external perception and the unity of the “substance and principle” mind, as revealed in consciousness; and if we were asked whether we should take for practical purposes the intuitions of consciousness, as revealing “the mind,” or the fact of man as an object, his states and manifestations as ascertained by our senses and external perception generally, either to the exclusion of the other, we should unhesitatingly declare for the latter, and obtain, in the amount and kind of facts admitted and mode of investigating, all that Dr. Bushnan or any other practical physician at present demands for the uses of practice.

II. Having dwelt so long upon Dr. Bushnan’s first head of discourse, we can dispose of the rest in shorter space. The statement which formed the subject of our comments is followed by a reiteration of the propositions—Practical psychology consists in the study of individual minds; the study of individual minds constitutes psychology. And nothing very remarkable occurs until we arrive at the following sentence:—“Since it has been generally taught that consciousness is not a separate faculty of the mind, but a *condition attendant* upon every sensation, feeling, thought, emotion, passion, volition—in short, upon every state in which the mind can exist—the unity of the substance mind is at once made apparent to the student” (p. 137). This is most illustrative of Dr. Bushnan’s system. This makes the consciousness one

thing, the sensation, &c., another. If it does not constitute a faculty, what does? And then we are told that the substance mind is thus made apparent. Here, so far from a unity, it is not only a duality, but a trinity:—1. Substance mind, and its states. 2. Consciousness, and its states. 3. Body, organs, and life, constituting the third member of triune man. Is the sensation, feeling, thought, emotion, &c., not a state of mind and consciousness of the conscious man, whatever he is conscious of at any one moment? Are not memory, judgment, imagination, &c., states of consciousness as well? Does not all mean the man, or the man's brain? Are they not all cerebration in cognition, the process intervening between presentation and representation, impression and expression, the mode of reaction of the conscious man, the concrete *ego*?

Of the systems of philosophy recommended to our study, Dr. Thomas Brown's is held up to us as the most profitable for practical purposes. We have no wish to disparage the labours or opinions of Dr. Thomas Brown, nor of his admirer. We have read his books, and been charmed with his acuteness, his method, and his eloquence, and we have found throughout his work traces of the inductive and practical. It is not the latter, however, that Dr. Bushnan gathers and recommends for study; it is his laws of suggestion relatively in cognitions, his systematic statement and exhibition of the most abstracted facts in mental phenomenology, of metaphysical peculiarities—the most general modes of conscious cerebration—the relation to each other of the contents of consciousness in sequential development. His laws of occurrence are the laws, not only of the occurrence of cerebral changes to ends known in consciousness, but the laws of general occurrence, the most general, universal, ontological facts, involving such facts and cognitions as unity, unities, inclusion and succession in space and time, &c. These, as they are the most general modes of existence, exist in cognition, as intuitional experiences and beliefs, and, as such, form the most general and teleological laws of cerebration, constituting the most general principles of science generally and of mental science particularly, causal ideas, intuitional, cognitions, necessary truths. But how will this knowledge—excellent, useful, indispensable in its place and degree, an important part of practical science—avail alone for practice, in influencing the actions and habits of, not individual minds, but individual men and masses of them? Dr. Bushnan cannot, on his principles and method, get beyond them. He recommends a noting of particular kinds of cognitions already referred to, and abstracting or generalising them to the degree of comprehension of the laws of suggestion. Thus—

1. He can never get beyond the generals, unless he abandons his mode.

2. Even here he practises "induction, observation, and gene-

realisation," and calls it "deduction, or the method opposed to induction."

3. His mode is faulty, vitiated by the fundamental defects before enumerated.

4. There is nothing here practical or practicable.

III. The next section starts with the following sequence of propositions :

1. "The laws of suggestion, as a whole, carry us into the pith and marrow of practical psychology." We have shown that they, according to his method, do not.

2. "Man has no voluntary power over any one thought, but may, by the regulation of volition and desire, become in a great measure master of his thoughts—overrule and control the ordinary rules of suggestion." A palpable contradiction.

3. "Organic states of the living frame sometimes assume the mastery." Our creed is that consciousness is a perpetual induction of the organic states of the living frame. The obscurity, confusion, and contradiction of these paragraphs require no notice.

Then comes a statement the most scientifically audacious which we have ever read. He says, in measured terms, that "every act of mind leaves behind it in the vesicular substance a material trace or vestige, which may be organically affected and rendered active." That is bad enough. But he says, further, that his vestige is to concur with the *mental principle* in reproducing a previous state of mind. Here are three distinct hypotheses :—1. Material vestiges as remnants of thought. 2. Mental principle. 3. Reproduction of *previous* states of mind. How are intoxication, dreaming, insanity, &c., to be explained? By a fourth, that an increased momentum of blood renders active the vestiges by a merely physical impulse. Thus, "an outpouring of disjointed thought may occur;" "thoughts may rush onwards in mad career;" "torrents of unconnected ideas may be uninterruptedly poured forth."

We shall not permit ourselves to criticise this statement, and merely adduce it without remark.—(1) for the purpose of exhibiting to what melancholy extremes a fundamental vice in philosophy, principles, and method, will lead; (2) in order to compare it with a passage in a reply to Dr. Laycock (*Journal*, July, 1862, p. 239). Here he states that "the belief in the external world is not a truth of experience," having admitted shortly before "that consciousness is an experience of the vital changes within us." He imagines Dr. Laycock dreaming, and says "the dream is as much the reality of a succession of states of consciousness as the reality it represents



2. Both are cerebral occurrences, known and believed as such ; the one in relation, and the other out of relation.

3. Every cerebral occurrence, every state of consciousness, is a fact, and known and believed as a fact, the most particular and contingent as well as the most general and absolute, until further experience disproves it.

4. Dr. Bushnan, by means of the vestige hypothesis, is suicidal, for he admits, in the subsequent dream, of something additional to "the mind," which formerly constituted the act of experience and which now must do so equally.

Without pursuing our investigation of Dr. Bushnan's paper further, for it becomes as it progresses more and more confused and impracticable, we have adduced sufficient evidence—

1. To exhibit his mode of elaborating a practical science !

2. To prove how utterly out of keeping with any other scientific investigation what he recommends us is, and how neither science can be added to nor practice improved on his principles, but the one impaired and the other embarrassed.

Let us next ask shortly what mode of investigation Dr. Laycock recommends—what are his "principles and methods" ?

1. He unifies science, and makes it coextensive with existence. Psychology is with him but a subsection of the science of universal existence, a knowledge of a special mode of existence, whose general conditions and laws are the conditions and laws of every other mode of existence.

2. He unifies consciousness as cognition of organic states teleologically caused. These two propositions contain the essence of his system, and all the particular truths of his philosophy are but sub-truths of these.

3. He admits not, as Dr. Bushnan does, a science of mind distinct and separate from every other, having a different subject matter and mode, facts and laws.

4. Neither does he admit, as Dr. Bushnan does, "that the evidence of intuition and the evidence of experience are wholly separate and distinct," but "brings intuition, *as a fact of experience*, into the sphere of science for practice." And intuitive truth is with him an experience of the operation of an ontological law, the correlative in cognition of a teleiotic idea in creation. Intuition and every intuition is with him experience, the greater (experience) including the lesser (intuition).

5. Every act of experience is with him a truth, inasmuch as it is the cognition of an actual occurrence or change. Error and delusion, hallucination, &c., are as much facts as truths of number and form, and, as facts of induction, capable of being compared and dealt with generally as any other facts, so as to investigate and ascertain the causation of the ateleiotic state, and the relations of it to actual existence.

6. Necessary truths obtained by the experience of intuition are, in reality, facts of induction, and have their quality of necessity in their universality, actually and causally. They are fundamental ontological facts, constantly and invariably dominant and existent in creation and cognition, in brain and mind. As facts of cognition, truths of induction, they become a part of science to practise, fundamental conditions of volitional designs to ends. But any fact whatever, if known in all its true relations in time and space, is as truly and necessarily known as an abstract intuitional fact, and any fact whatever, whether known in any relation or in any real existing relation, is also as much known as a fact as arithmetical or mathematical truth. Thus, the dream fact adduced by Dr. Bushnan is no less a brain fact than if it constituted a waking experience or a waking memory, and as a dream fact it stands as a fact of induction for comparative investigation as to its causation, relations, &c.

We need hardly point out that the radical distinction postulated between the truth of the forty-seventh proposition of the first book of Euclid and the truth that water boils at  $212^{\circ}$  Fahr. is a verbal quibble. The one is an intuitional experience of a universal, formal truth, and the other is an experience of a truth as necessary in existence and occurrence as the other, which would be as necessary in expression if all the actual causation and relation were stated.

6. Dr. Laycock lastly abolishes the notion of mind being an absolute unity in every man, causing the manifestations of consciousness and representation, and states it as a causal unity in creation, as an active agent whose manifestations can be everywhere inductively traced. He thus opens the way to a field of science never trod before, and obliterates the hackneyed circling delusions hedged in formerly by an impenetrable barrier, so that from mind science one could not travel to any other, nor from any or every other science to mind. Now, mind science is universal, and "the mind" science in relation with every other, so that every other science reflects light and enlightenment upon it, and it upon every other. They are all manifestations of causal mind, are the cognition and induction of it; and while every fact of cognition gives a power for practice in mental science, every fact of intuition gives a power for practice to every other science. Cognition and intuition are one and the same; science, mental and physical, is one and the same; and practice, the existence of science, the incidence, is one and the same.

In concluding this section of our comparative review we shall merely—

1. State as the merit, the attraction, and originality of Dr. Laycock's elaboration, that it establishes, without barrier or limit, the universal sphere of an inductive mental science, a purely inductive science, affording scope for the earnest labours of workers in all departments of science to bring their results into relation, and

holding out an illimitable field for inductive research, while investigation is directed by the fundamental principles. The more work that is done in this way, the more will "the practical" gain in certainty and success; work on any other foundation is useless and embarrassing, and work ostensibly on any other foundation is really instinctively and intuitively on this. Dr. Laycock has raised instinct and intuition out of unconscious forgetfulness into cognition, science, and system.

2. We make a strong counter-assertion to Dr. Bushnan's gratuitous accusation, that Dr. Laycock "continually abuses the psychology of the schools," "sneers at Locke and Leibnitz as being pretenders." Never have we, in intercourse with Dr. Laycock, from his lectures or his writings, experienced the slightest foundation for such an unfounded charge. "Sneering and abuse" are neither Dr. Laycock's philosophical tone nor his habit; and if he investigates new facts inconsistent with former tenets, or elaborates new principles in opposition to them, or, in a solid, dignified way, refutes fallacies of former assertion and method, unfounded personalities will not avail against the conclusion.

There still remains for performance the third and most important portion of our purpose, the testing of the philosophy of each by actual occurrence. This will form the subject of a future communication, when we shall inductively examine the results in experience and practice of the methods inculcated by Dr. Bushnan and Dr. Laycock.

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*Personal Identity, and its Morbid Modifications.* By J. CRICHTON BROWNE, M.D. Edin., L.R.C.S.E.; Ext. Mem., late Senior President, Royal Medical Society, Edinburgh; Assistant-Physician Derby County Asylum.

(Concluded from p. 295.)

At the close of our last paper on personal identity we had just turned to the consideration of those apparent morbid divisions of the unity of consciousness which are sometimes, though happily rarely, brought under the notice of medical psychologists. Double consciousness, as we have already hinted, is essentially a result of diseased action, and comprehends a variety of conditions, distinguished from each other by differences in the mental symptoms, and by the relations to each other of the lucid and insane or of the two insane "oscillations." In all of them, however, there is, for the time, a change, a perversion, or an exaltation, of the mental identity of the individual, of