obligations to them for their continuous efforts with a view to the greater efficiency and usefulness of the department. And, while asylum medical officers cannot but retain a grateful recollection of their invariably kind and considerate attitude towards themselves personally, they must esteem very highly the candour and straightforwardness which always characterised their dealings with faulty or ineffective administration, as it was evident that their one aim, pursued with single-heartedness and pertinacity during their entire term of office, was to raise the standard of asylum management, both medical and general, throughout the country; and if this goal was not fully attained, which none would probably be more willing to acknowledge than themselves, their efforts in this direction were largely crowned with success. To their successors we bid a hearty welcome, feeling confident that they, too, will keep the same high ideal in view, and so bring about still further advancement in everything that concerns the welfare of the insane in Ireland.

Body and Mind. By WILLIAM MCDOUGALL, M.B. Methuen, 1911.

Dr. McDougall has added, in this book, one more to the attempts that mankind is always making to solve the insoluble. Every such attempt is fascinating in proportion to its ingenuity, and to the degree in which it takes account of the difficulties and tries to cover the whole field, and in these respects Dr. McDougall's attempt is very fascinating. It marks a full revolution in the progress of thought. The theory of the connection of mind with body begins with crude animism—with the assumption of a resident soul which is the actuating force that produces bodily movement and conduct; which can escape in sleep from the trammel of the body, and live an independent existence, acting in much the same way, but more powerfully, when disembodied; and which is freed from the body by death and lives thereafter indefinitely. The restless spirit of man, which has no peace until phenomena are explained, finds explanations of all happenings in the action either of embodied or of disembodied souls. Every event, every phenomenon, is ascribed to the action either of man, or of animals, or of spirits, either disembodied, or embodied but invisible. As investigation is pushed, more and more is man able to account mechanically for phenomena that he had formerly ascribed to spiritual action, and at length he ousts spiritual agency altogether, and accounts for everything, even for human conduct, nay, even for human mind, as matter or as mechanism. So surely as this conclusion is reached, so surely does the mind revolt against it. In a certain region mechanism fails, or seems to fail, and a natural revulsion not only re-establishes spiritualism or animism, but extends its domain, and makes it encroach upon the realm of matter. And so the see-saw goes on, and after millenniums have elapsed, Berkeley repeats Plato with a difference, and with a difference Huxley repeats Epicurus. Less than a generation ago, materialism, or rather mechanism, held the field, and to suppose the existence of a soul was, in the eyes of the high priests of science, flat blasphemy; but of late years there have been many signs

that the pendulum had reached the limit of its swing, and was beginning to return towards animism. Lotze was for long the voice of one crying in the wilderness, and now Bergson and McDougall show that Lotze has not preached in vain; that the pendulum has passed the vertical and is rising on the opposite swing; that the revolution is approaching completion and perihelion will soon be reached once more.

But always with a difference. The refined materialism of Epicurus and Lucretius was as far in advance of the crude materialism of Cabanis as the refined animism of Plato was in advance of the crude animism of Homer. Huxley advanced on Epicurus as Berkeley advanced on Plato, and McDougall's animism is altogether different from that of Berkeley.

Whatever we may think of Dr. McDougall's conclusions, we must acknowledge that his treatment of the whole subject is comprehensive, acute, and eminently fair. He begins with a history of his subject from the earliest times, from the assumptions of primitive man to the speculations of philosophers now living, and his account, though it does not profess to be more than a summary, is a very good summary, is lucid, free from bias, and quite sufficient for its purpose.

The theories of the relation of mind to body are three, or are reducible to three groups—monism, interacting dualism, and parallelism. According to the first, mind and body are one. They are two aspects of one process. They are obverse and reverse. Mind is body and body is mind, and there is nothing to explain. Interacting dualism is another name for animism. It postulates a soul, acting on the body and being acted on by the body, and having its own inherent activity independent of the body, just as the body has certain inherent activities independent of the soul. Parallelism, which is the theory that has held the field for the last half century and more, is a dualism, but not an interacting dualism. It postulates brain processes and mental processes as invariable concomitants, neither having any causal influence on the other. In time of occurrence they are simultaneous, or almost simultaneous, and each proceeds in strict parallelism with the other, and reproduces, *mutatis mutandis*, the variations of the other; but they do not interact.

To each of these theories there are insuperable objections. With our limited knowledge and means of investigation we must suppose that one of them is true, but not one is really satisfying or will stand criticism. Dr. McDougall has made a brave attempt to rehabilitate animism, but it is very doubtful whether he will convince anyone who is not already converted, or is not waiting and longing to be convinced. His attempt is, however, the more to be commended and admired because of the extreme difficulty of establishing affirmatively any of these theories. Destructive criticism is easy, and Dr. McDougall has no difficulty in demolishing the several alternatives to his own hypothesis; nor is it a formidable task to attack this, but the task of construction is extremely laborious, is difficult and thankless, and Dr. McDougall has done it as well, probably, as it is possible to do it.

In my presidential address to this Association two and a half years ago, I said that although I did not myself plump for an interacting dualism, I should not quarrel with those who do; but I am now about

to falsify this statement, and examine the dualism of Dr. McDougall from the point of view of an independent critic, not committed to either of the alternative doctrines. First of all, let me refer my readers to my book on Logic, in which they will find (p. 226) a strict logical demonstration that the problem is insoluble. It is insoluble, not in the sense that squaring the circle is insoluble, for we can in fact ascertain the value of π within an approximation as close as we please. It is insoluble in the sense that the dweller in the interior of a sphere cannot see the convexity of the sphere, or view his dwelling from the outside.

Even if we were to hit upon the correct solution, we could never know whether it was correct or not; and hence, no doubt, the fascination the problem has for speculative minds.

In his destructive criticism of monism and parallelism, Dr. McDougall relies mainly, as all critics of these doctrines and of dualism have always relied, and as the opponents of the doctrine of the inheritance of acquired qualities rely, upon the argument of inconceivability. The doctrines that they attack lead to conclusions, or require conditions, that are inconceivable; and this inconceivability of consequences or conditions is adduced as conclusive proof of the falsity of the doctrine. It has long seemed to me that this argument is fallacious; moreover, it is double-edged. It is a boomerang argument, that not only slays the enemy, but sweeps back and decapitates the thrower. By the use of the argument of inconceivability, we can overthrow the doctrines not only of monism and parallellism, but of interacting dualism also; and not only of interacting dualism, but of gravitation, of combining proportion, surface tension, and every other ultimate or primordial action; and in historical fact, the argument was employed against Newton to demonstrate the absurdity of the theory of gravitation. Undue importance may easily be attached to the argument from inconceivability, therefore, but it will not do to scout this argument when employed to attack dualism, and allow it full weight in attacking monism and parallelism.

Dr. McDougall does not shirk difficulties, and he states the views antagonistic to his own with great force and clearness. The difficulties of admitting the truth of dualism are many, but the greatest and most cogent of them all, to minds trained in physical science, is undoubtedly the "closed circle" of physical cause and effect. We acknowledge physical impulses, currents of motion, transferences of energy—call them what you will—passing centripetally from the sensory end-organs to the cortex of the brain. We acknowledge redistribution, rearrangement, division, composition, and reinforcement, of these streams of energy in the cortex. We acknowledge the centrifuged currents passing outwards to the muscles and producing movement. All this ground is common to monists, parallelists, and dualists alike. The votary of physical science sees in this process a "closed circle" of physical process. At every step he sees molecular movement following certain paths of physical structure, liberating additional motion from store here and inhibiting the liberation of motion there; but he sees no room, no possibility, no conceivable occasion, for the intrusion at any step of this process, of a new factor, adding to, taking from, or altering the direction of the streams of energy. Such an intrusion is, in

his view, miraculous. It is the negation of all that he holds sacred—of the conservation of energy and the inevitable sequence of physical cause and effect. Once allow such intrusion, and anything may happen. Law is abolished, and chance and caprice are installed in its place. Now the axiom of science is that law is paramount, and the progress of science is the discernment more and more in every department of the universe accessible to human research, of the inexorable reign of law. This is the great obstacle in the way of the acceptance of an interacting dualism, and Dr. McDougall does not shrink from it. "Once admit," he says, "that psychical influences may interfere with the course of physical nature, and—'you don't know where you are,' you can no longer serenely affirm that miracles do not happen. . . . . Thus the gates are opened to all the floods of spiritualism and superstition of every kind, which, to some gloomy scientists, seem to threaten to light up once more the fires of persecution and to drag down our civilisation from its hardly-won footing upon the steep paths of progress."

Until this position is carried, dualism cannot be accepted; and Dr. McDougall assaults the position from three different sides, or, rather, he seeks to overwhelm the defence by three excessive waves of attack. First he quotes the high authority of Clerk-Maxwell in support of the thesis that the direction of motion of particles in a system may be altered without doing work upon the system; second, he adopts a suggestion of Dr. Percy Nunn that the mind can alter spatial relations, while leaving unchanged the quantity of energy in the things whose relations are changed; and third, he boldly denies that the concept of the "closed circle" is anything more than an unproved hypothesis, holding true, perhaps, in the inorganic world, but not applicable to the processes of living beings.

I do not propose to argue these matters out—an undertaking that would be beyond the compass of a review; but lest Dr. McDougall's readers should be fascinated, as they well may be, by the way in which he presents his arguments, let me set forth certain obvious considerations that seem to me to stand in the way of their acceptance. What Clerk-Maxwell says in the realm of mathematical physics must be accepted. If he says a thing is so, we must acknowledge it to be so. But though the direction of motion of particles in a system may be changed by binding the particles together, without work done upon or in the system, it does not follow that the particles can be bound together without work being done; and though, if the latent energy of a stone that has been thrown up onto a terrace is not altered by moving it along the terrace, it does not follow that the stone can be moved without work being done. As to the third objection, that the law of conservation of energy is merely an empirical generalisation, the same is true of the law of gravitation; and the same evidence is available in both cases—the evidence of experience. If action on a certain hypothesis never brings us up against experience that contradicts the hypothesis, then we are bound and obliged by the constitution of our minds to accept that hypothesis as true. The arguments of science do not take nearly enough account of the legal doctrine of *onus probandi*.

There is no obligation on the holder of a doctrine which is never contradicted by experience to support that doctrine, as Dr. McDougall

requires, by showing that its foundations are consistent or intelligible. If there were such an obligation, the doctrine of gravitation must be immediately abandoned. The foundation of that doctrine is not a consistent explanation of the way in which gravitation works, for no such explanation has ever been given. When we find that the successful completion of every voyage, the successful prediction of every place assigned to a celestial body, all founded on the doctrine of gravitation, never lead us to an experience inconsistent with it, then we cannot help accepting it as true, and are under no obligation to defend it aggressively. The *onus probandi* lies on those who question it. And so the *onus probandi* lies on those who would question the doctrine of conservation of energy. It is not enough for Dr. McDougall to say it is unproved. It is proved in the most effectual way, by the absence of any contradictory experience when it is acted on. It is for him to disprove, not for those who hold it to argue in its favour. The mere statement that there may be a sphere in which it does not obtain is not even the beginning of a disproof. If he wants to upset it he must show crucial instances to the contrary. Then the *onus probandi* will be shifted to the other side.

It is impossible, within limits less extensive than those of Dr. McDougall's book itself, to examine all his arguments. Cogent and admirably stated, as for the most part they are, they fail to carry conviction to those who have thought much about the matter, and some are only superficially plausible. The argument from "meaning," the argument of the red and blue lights, and the telegram argument, and much else in the book, all assume a single level of consciousness, which no follower of the lamented Hughlings Jackson would for a moment admit. Granting that they would be valid if there were but one level, and that a low level, of consciousness, they are irrelevant, even absurdly irrelevant, if we assume various levels, each co-ordinating and unifying and integrating all its inferiors.

Though Dr. McDougall's arguments against all the alternatives to animism are unanswerable, arguments just as unanswerable exist against animism, and it would be very interesting to hear Dr. McDougall on the other side. No one is more competent to show the inherent weakness and unprovability of animism. The problem is in its nature insoluble, and however good a case may be made out for one of its quasi-solutions, it remains good only until an advocate of one of the others comes along and destroys that solution. Thus Prof. James Ward a few years ago destroyed parallelism, and established monism. Now Dr. McDougall destroys monism and establishes dualism. No doubt the next attempt will be to re-establish parallelism. It is the very insolubility of the problem that constitutes its fascination. It is the problem of the owl and the egg. If every owl comes from an egg, and every owl's egg comes from an owl, which was first? We may meditate upon it till we burst, and come no nearer to an explanation. It may be that in the far future the problem will be solved, but if it is, it will be because man has acquired some new faculty whose rudiment cannot now be discerned. We know that at some past time life originated, but we know not how; we know that at some past time mind originated in connection with life, but we know not how. Who shall say that there may not be a third

quality yet to be added, and that as life was added to some forms only of matter, and as mind was added to some forms only of living matter, so some new quality, of which we may have even now the unrecognised rudiment, may yet be added to some forms only of animal life? Then perhaps we shall be as gods, knowing good and evil, and able to recognise the true relations of mind and body; but till then we must be content to accept provisionally that form of monism, parallelism, or dualism, which most appeals to our prejudices, and be thankful to writers like Dr. McDougall, who can show us plausible reasons for adopting the faith that we desire to believe.

The book is a handsome volume of 379 pages, and the argument throughout is clear and easy to understand. It would be still clearer and easier if more attention had been paid to the punctuation, which is, however, better than that of most writers on Science and Philosophy; and a protest must be entered against the profusion of footnotes. The reader is perpetually interrupted in his pursuit of the argument, and in his following of the train of reasoning, by reference to footnotes, the matter of which, in such a work, should be either embodied in the text, relegated to an appendix, or omitted altogether.

The proof reading is, on the whole, careful, but Dr. Priestley's name is persistently misspelt. CHAS. MERCIER.

Conduct and its Disorders Biologically Considered. By CHARLES ARTHUR MERCIER, M.D., F.R.C.P. London: Macmillan & Co., 1911. Pp. 377. Price 10*s.* net.

We greatly regret that we are obliged to postpone our review of Dr. Mercier's book on this subject until our next issue. Those who remember Dr. Mercier's paper on "Insanity as Disorder of Conduct," read before the Association and published in this Journal in July, 1910, will be prepared for his point of view. His position did not commend itself to the meeting, and this book is presumably intended as an enforcement of Dr. Mercier's argument. He declares in his preface that while isolated departments of conduct have been studied for long enough, yet "of conduct as a whole; of what it is; of its nature; its varieties and kinds; of their relations to each other; of its vagaries and disorders; no book treats: no study exists." It is to remedy this defect that the book has been written, and it may be said to constitute a new science, which Dr. Mercier calls Praxiology. We insert this preliminary notice to draw the attention of our readers to a treatise which is written in Dr. Mercier's characteristically lucid style.

Die Wassermannsche Reaktion (*The Wassermann Reaction*). By HAROLD BOAS. Berlin: Karger, 1911.

In a volume of 186 pages, 45 of which consist of references to current literature, the author gives a description of the method of carrying out the Wassermann reaction, and a detailed account of his own observa-