The author's empirical critics will naturally look upon these conclusions as overdrawn. Many of them will look upon the antinomies as unduly sharpened, and upon the difference between the empirical and the speculative solutions as exaggerated. A social source sanction and goal of morality they would admit to be much less august than a divine, but they would think it quite as truly conscious, and accordingly the same in kind, in the principle of its authority, and in the nature of its efficacy as a solvent of antinomies. Some no doubt will even go so far as to regard society in this rôle as closer and surer, less shadowy and precarious than Professor Ladd's absolute.

But many readers will probably be most interested in some statement that will give them in brief compass some idea of Professor Ladd's general conception of morality. And while any such statement is sure to do the author but scant justice, it may be that the following paragraph, taken from his text, p. 528, will serve the purpose reasonably well, when read in connection with what has already been said.

"For every individual his own ideal of moral selfhood furnishes the criteria, the sanctions, and the end of morality in such manner that if he conforms his conduct to this ideal he is entitled, at the bar of universal moral reason, to be called a good man. By such conformity the individual realizes in his own personal experience the nature of that which is eternally and unchangeably right. *For it is the spirit of devotion to the ideal of personal being in social relations that constitutes the very essence of ethical rightness* [italics Ladd's]. Only it must never be forgotten that this spirit itself involves and absorbs the entire self — involves all the functions and activities of moral personality in its service daily and momently, and absorbs them all in the rational pursuit of its more and more perfect realization."

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Experimental Psychology and its Bearing upon Culture. GEO. MALCOLM STRATTON. New York, The Macmillan Company. 1903. Pp. vii + 331.

To all who have seriously at heart the welfare of experimental psychology such a book as this which Mr. Stratton has given us must be sincerely welcome. The laboratory psychology has been passing through a period of adolescence, during which it has, like other young sciences, experienced multifarious forms of misapprehension, and it is fair, perhaps, to say, that it has suffered quite as much from its ostensible friends as from its enemies. One of the most persistent

of misunderstandings is the conviction shared by many critics, that experimental psychology has little or no bearing upon any of the deeper problems of philosophy. Such an impression is in point of fact based solely upon the failure to distinguish between form and substance. Certainly the chronoscope and the induction coil do not immediately suggest metaphysical interests, but Mr. Stratton's timely book is devoted to showing that when used for purposes of psychological analysis even these material devices, and others of like ilk, may contribute to the solution of philosophical problems. Thus we meet with experimental evidence telling for one conclusion or another in the case of the mind-body problem, the problems of space and time, the problem of personal identity and sundry other philosophical questions. Mr. Stratton has not attempted primarily to popularize his subject. He writes with a firm and scholarly grasp of his material for the person of trained intelligence, who is in some degree at least familiar with the general trend of philosophical thought, especially those phases of it which find their expression in the interests and ideals of contemporary culture. The plan of the book involves, first, the attempt to make vivid and clear the exact procedure in typical psychological experiments; and second, the effort to show how the results so obtained are relevant to certain significant philosophical inquiries. Thanks to a graceful style, this program is carried out with a smoothness and finish which render one's reading unusually agreeable and satisfactory. The philosopher, the psychologist and the layman will all find the work interesting and suggestive. Profuse illustrations do much to enhance the definiteness of the impressions about experimentation.

A brief historical introduction is followed by an admirable statement of the nature and scope of experimental methods. The fatuity of the earlier strictures upon such experimentation, as being inevitably limited to a few problems touching the psycho-physiology of the sense organs, is effectively exposed by citations of results already attained. On the other hand, the absurdly sweeping claims of incidental enthusiasts find no comfort in our author's conservative estimates. Theoretically every psychological problem is susceptible to experimental attack and already wide ranges of the psychological field have been successfully explored by the experimentalist. But there are regions into which his ingenuity has not as yet penetrated and no one can say how long such entrance may be deferred.

In a chapter on mental measurement we have a lucid analysis of the tangled controversial maze which has grown up around this sub-

ject. In a matter where parties are so numerous it is hardly to be expected that the author should unequivocally carry the day for his own view, and he is likely to find among his professional colleagues more dissenters from this part of his text than from any other. The position maintained is that we can and do unquestionably measure mental operations in regard to their temporal, spatial and intensive characteristics. To establish this position Mr. Stratton first undertakes to discredit the compelling force of the *a priori* arguments denying the possibility of mental measurements, after which he falls back upon the practical fact that many such measurements *are* apparently made. In the case of intensive measurements he takes the bull fairly by the horns and maintains, contrary to the more usual view, that the scale by which such measurements are to be judged is in reality a psychical scale and not the scale of physical weights, lights, sounds, etc., constituting the stimuli. Fortunately the practical value of such measurements is not jeopardized by the theory which one entertains as to their ultimate nature. Whether in reaction time tests, for example, we really and primarily measure the time occupied by certain neural operations, or the time of a series of psychical events, is of relatively small importance, provided we can by such methods get at certain of he differences which mark off from one another the processes of sensation, perception, recognition, association, etc. Thus the reviewer holds a somewhat different position upon this matter from that set forth by Mr. Stratton, but this does not detract from his ability to profit by Mr. Stratton's investigations involving measurements. Meanime the obstinate fact remains, to which the author seems hardly to accord sufficient weight, that whatever processes we may *include* in our measurements, the *termini* of all our actual mensuration, whether spatial, temporal or intensive, are physical objects or events. If this fact be admitted, it is difficult to see how one can altogether avoid the conclusion of those who maintain the functional or vicarious theory of mental measurements.

In two chapters dealing with unconscious ideas Mr. Stratton launches a very sane and temperate attack upon the common form of this doctrine whereby we are supposed to possess a sort of psychical homunculus, which steps in now and then to accomplish various remarkable performances, telepathic, hypnotic, etc., for which our ordinary mind seems incompetent. The burden of his argument rests, first and positively, upon the exposure of the inadequacy of the evidence advanced in support of the theory, second and negatively, upon the doctrine of parsimony in scientific explanation. On the other hand,

Mr. Stratton defends a much emaciated form of the doctrine in his contention, based upon numerous experiences, experimental and otherwise, that mental differences exist of which we are not, and apparently cannot be, directly aware. He cites, as illustrating the point, certain experiments of his own in which the reactions to lighted surfaces were found to be different, depending upon the presence or absence of subliminal shadows. The genuineness of such distinctions no one can question, certainly no experimentalist, but they afford no comfort to the believer in the old-fashioned unconscious idea. They are rather unnoticed increments, or nuances, of sensations and ideas.

An interesting account of illusions and their value for psychology as revealing the fundamental features of the perception process, leads on to two rather elaborate chapters dealing with space. The discussion runs all the way from such topics as the spatial perceptions of blind persons to the Kantian doctrine of the transcendental æsthetic. In this connection Mr. Stratton makes use of his own interesting and well-known experiments in which he subjected himself for a time to the distress of prisms inverting the ordinary space relations of the optical field. From these and other experiments he reaches a positive reply to the question which Berkeley and other philosophers have so often propounded. Neither touch nor vision can claim any genuine primacy as avenues of spatial information. Their action is reciprocal and the real world of our psychological space is one constructed through our efforts to harmonize our often conflicting and disparate experiences. The existence of an auditory space Mr. Stratton regards as problematical but possible.

The next two chapters contain a capital account of the important features of memory with its problems of temporal sequence and a discussion of their bearing upon our feeling of personal identity. A chapter on imitation and suggestion affords opportunity for an exposition of the more significant social and psychological phases of these processes brought out by recent writing. Æsthetic phenomena and the affective life in general are given two chapters in which the author has attained a welcome freshness and simplicity in dealing with matters where one is accustomed to meet stale platitude and obscurity.

The connection of body and mind is discussed in a chapter somewhat too brief to be altogether fair to the various relevant facts and theories at present available. To mention but a single point, there seems to be hardly sufficient justice done to such views as those of Goltz and Loeb upon the localization of psychical functions.

A final chapter is largely devoted to a discussion of the problem of the soul as it bears upon the experimentalist's work. Mr. Stratton adopts the position now so commonly held, that psychology needs no tertium quid beyond its states of consciousness, and at the same time he makes it abundantly clear that such a doctrine carries with it no necessary prejudice to the reality and sanctity of human personality.

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PHILOSOPHICAL.

The Development of Modern Philosophy, with other Lectures and Essays. ROBERT ADAMSON. Edited by N. R. SORLEY. 2 vols. Edinburgh and London. 1903. Pp. xlviii + 358 and xv + 330. 18 s. net.

These handsome volumes are the posthumous legacy of the late Professor Adamson. The first volume contains a sketch of modern philosophy from Descartes to Hegel, and also the sketch of a theory of knowledge. Volume two covers seven occasional papers, and besides the Principles of Psychology covering pp. 161–330. The first volume has an excellent portrait of the author, a memorial 'introduction' by Professor Sorley, and a bibliography (arranged by years).[1]

The remarkable thing about these volumes is their maturity of expression and argument, seeing that they are made up of students' lecture notes and had no revision by the lecturer. The pages read with all the deliberate weighing of reasons and choosing of words of a labored composition.

In his views Adamson is one of the sanest and surest of those who reverted to a judicious naturalism largely under the weight of the evolution doctrine. His careful sense of fact and reverence for reality show in all the constructive parts. In the psychology we find a frank acceptance of the genetic point of view and a successful criticism of the logical and faculty doctrine; but yet we miss the definiteness of well-thought-out theory. He usually stops by saying in effect that any formula here or there must take account of development; but having said so much he does not work out sufficiently well-developed genetic principles to solve the problems which the development hypothesis raises. No doubt we miss here just what he would himself have aimed to give had he prepared the manuscripts for publication. Speaking of

[1] The present writer takes interest in the fact that Adamson's last work was the series of articles on logical topics contributed to Vol. I. of the *Dictionary of Philosophy and Psychology* (83 titles).