

UNIV. OF
TORONTO
LIBRARY



7926

1

THE JOURNAL OF PHILOSOPHY
PSYCHOLOGY AND SCIENTIFIC METHODS

Digitized by the Internet Archive
in 2007 with funding from
Microsoft Corporation

Philos
Psych
1-1-10

3

THE JOURNAL OF PHILOSOPHY

PSYCHOLOGY

AND

SCIENTIFIC METHODS

EDITED BY

FREDERICK J. E. WOODBRIDGE

AND

WENDELL T. BUSH

VOLUME VII

JANUARY-DECEMBER, 1910

120399
—
18 11 12

NEW YORK

THE SCIENCE PRESS

1910

B
1
J6
v.7

PRESS OF
THE NEW ERA PRINTING COMPANY
LANCASTER, PA.

THE JOURNAL OF PHILOSOPHY

PSYCHOLOGY AND SCIENTIFIC METHODS

THE EGO-CENTRIC PREDICAMENT¹

I SHALL deal in the present paper with a problem that is sufficiently limited to justify the hope that it may be solved on its merits. I shall seek to discover whether a certain circumstance, which has never been disputed, does or does not constitute evidence for a theory that has been much disputed. The circumstance I shall call *the ego-centric predicament*, and the theory, *ontological idealism*. I shall not attempt to determine the truth of ontological idealism, except in so far as that theory is established by an appeal to the ego-centric predicament. Furthermore, I do not attribute either the theory or the argument, in the form in which I present them, to any individual philosopher. My statement is intended to contain propositions that approach as exactly as any proposition can to a theory and an argument that are among the commonplaces of philosophy. But since the attempt to state the theory has raised doubts in my mind as to the possibility of stating it at all, and since I have found an exact statement of the argument to be equivalent to its refutation, I can not reasonably suppose that any one ever deliberately assented to such statements. Inexact discourse can not be criticized until it has first been converted into definite propositions; and these can never, with any certainty, be identified with the original assertions. For this reason polemics directed against historical opinions are like to prove unconvincing and futile. I propose, then, to examine certain propositions which I have myself defined. But, at the same time, I hope that what I have to say will be recognized as having an important bearing on traditional issues.

What I mean by *ontological idealism* is best expressed by the proposition: Everything (*T*) is defined by the complex, I know *T*. For the purposes of this proposition the "I" is in no need of any definition beyond what it contains from its being the initial term in

¹Read before the American Philosophical Association, at New Haven, December, 1909.

this complex. In order to make it plain that the term is generalized, I shall substitute *ego*, or *E*, for the pronoun. The term *T* is primarily distinguished from other terms only in that it has unlimited denotation; it refers to anything and everything. It is desirable that the operation or relation "know" should be freed from its narrower intellectualistic meaning; and it will, therefore, prove convenient to use the expression R^c , to mean any form of consciousness that relates to an object. Thus R^c may refer to thinking, remembering, willing, perceiving, or desiring. I am justified in denominating it as a relation, because in the theory and in the argument which I am examining it plays the part of the connecting link through which *E* and *T* form one complex. Ontological idealism is, then, a name for the proposition: $(E)R^c(T)$ defines *T*.

It will be observed that the proposition asserts that *the specific relation* R^c obtains between *E* and *T*. Ontological idealism is not to be confused, therefore, with a theory which simply asserts that *some* relation to *E* is definitive of *T*. Such a theory might be offered on the following grounds. No item in the universe can escape being related to every other item in the universe. Therefore, since there is at least one *E* in the universe, no *T* can escape being related to it. But a term is defined by all of its relations, hence every *T* is defined by its relation to an *E*. But such a theory would be trivial, because it would attach no peculiar importance to the relationship singled out for special mention. On the same ground one could construct a theory to the effect that *T* is defined by its relation to the number 7, or to Washington's crossing the Delaware, or to the flower in the crannied wall. There is an interminable series of such ontologies, and if established on such grounds, idealism would be only one of infinitely many negligible alternatives.

Not only does ontological idealism assert the specific relation R^c , but it asserts that this relation defines *T* as *T*'s other relations do not. In other words, "definition" is intended in a sense in which some, but not all, relations are definitive. Otherwise, the theory would again become trivial and negligible. No theory of relations can neglect the difference, for purposes of definition, between a relation like that of a moving body to the masses of surrounding bodies, and a relation like that between a man's fortunes and his horoscope (or, "that part of the ecliptic which is on the eastern horizon at the instant of his nativity"). If the latter type of relation were as definitive as the former, then there would be no ground for preferring astronomy to astrology, or an idealistic ontology to any one of a number of others. Thus, every *T* is in the same universe with the number 7. Expressing the relation "with" by the symbol R^w , we can construct an ontological proposition to the effect that, $(7)R^w(T)$

defines (T). If ontological idealism is to be distinguished from the infinitely many negligible propositions which may thus be asserted, it must be contended that $R^c(E)$, is in some sense necessary to T , while $R^w(7)$, $R^w(8)$, etc., are not.

Any remaining doubt of this must be dispelled, when it is observed that the only ground on which it would be possible to assert the universal proposition, every $(T)R^c(E)$, is the discovery of the necessity of the relationship in particular instances. For complete induction is evidently out of the question. Speaking generally, the assertion that a thing is definable by all of its relations, can never throw any light on the relations that it does in truth possess. For that purpose the thing must be regarded as defined by some relations only. Before, then, it can be shown that everything possesses the relation R^c , that relation must be regarded as peculiarly indispensable to it. $R^c(E)$ must be shown to be necessary to T , as two dimensions are necessary to a plane, or hydrogen and oxygen to water.

I desire in the present investigation to leave out of consideration a rapidly growing doubt as to the possibility of any such branch of knowledge as ontology in the traditional sense. Thus it may well be that the failure of the materialistic ontology is due not so much to the special limitations of the concept *matter*, as to the impossibility of obtaining any concept that shall have the unlimited denotation and connotation attributed to being or reality. Indeed, I do not feel at all sure that the words "being" and "reality" mean anything in exact discourse. But I waive that general question for the sake of isolating a narrower issue.

Ontological idealism, then, is a theory to the effect that T necessarily stands in the relation R^c to an E , or that the relationship $R^c(E)$ is indispensable to T . Now the attempt to prove this theory at once reveals a predicament that might otherwise escape notice. One must attempt to discover the precise nature of the modification of T by $R^c(E)$; but one promptly encounters the fact that $R^c(E)$ can not be eliminated from one's field of study, because "I study," "I eliminate," "I think," "I observe," "I investigate," etc., are all cases of $R^c(E)$. In short, $R^c(E)$ is peculiarly ubiquitous. There can be no question concerning the fact; it owes its importance in the estimation of philosophers to its being one of the few facts to which philosophy itself originally called attention. Science has occasion to eliminate errors of judgment and relativities of sense, but has no occasion to eliminate consciousness altogether; and therefore has not discovered that it is impossible. We can not, then, disagree as to the fact, nor as to its peculiarly philosophical or epistemological significance. But we are still left in doubt as to what the fact proves with reference to the problem

which revealed it. My contention is that it proves nothing; or rather that it proves only the impossibility of using a certain method to solve the problem. In other words, it is not an argument, but a methodological predicament. Let me further elaborate this predicament.

In order to discover if possible exactly how a T is modified by the relationship $R^c(E)$, I look for instances of T *out* of this relationship, in order that I may compare them with instances of T *in* this relationship. But I can find no such instances, because "finding" is a variety of the very relationship that I am trying to eliminate. Hence I can not make the comparison, nor get an answer to my original question by this means. But I can not conclude that there are no such instances; indeed, I now know that *I should not be able to discover them if there were*.

Again, with a view to demonstrating the modification of T by $R^c(E)$, I compare T before and after it has entered into this relationship with some E other than myself. But in making the comparison, I institute the relationship with myself, and so am unable to free T *altogether* from such relationships.

Again, within my own field of consciousness, I may attempt to define and subtract the cognitive relationship, in order to deal exclusively with the residuum. But after subtracting the cognitive relationship, I must still "deal with" the residuum; and "dealing with" is a variety of the very relationship which I sought to banish.

Finally, just in so far as I do actually succeed in eliminating every cognitive relationship, I am unable to observe the result. Thus if I close my eyes I can not see what happens to the object; if I stop thinking I can not think what happens to it; and so with every mode of knowledge. In thus eliminating all knowledge I do not experimentally eliminate the thing known, but only the possibility of knowing whether that thing is eliminated or not.

This, then, is what I mean by the ego-centric predicament. It is a predicament in which every investigator finds himself when he attempts to solve a certain problem. It proves only that it is impossible to deal with that problem in the manner that would be most simple and direct. To determine roughly whether a is a function of b , it is convenient to employ Mill's "Joint Method of Agreement and Difference," that is, to compare situations in which b is and is not present. But where b is "I know," it is evidently impossible to obtain a situation in which it is not present without destroying the conditions of observation. In other words, the problem of determining the modification of things by the knowing of them is a uniquely difficult problem. The investigator here labors under a peculiar embarrassment. But this fact affords no proper ground

for any inference whatsoever concerning the true solution of the problem; hence it affords no argument for any theory in the matter, such as ontological idealism.

For the purpose of further illustration, and in order to suggest specific historical applications, let me consider several varieties of ontological idealism that gain illegitimate support from this predicament. The varieties which I propose here to examine are distinguished by the type of dependence on $R^o(E)$ which is attributed to T . The *creative* theory asserts that E creates T ; the *formative* theory asserts that E forms or organizes T ; the *identity* theory asserts that E is T .

It is characteristic of creative idealism, the most naïve variety of the theory, to dispense wholly with analysis of E , T , and R^o . In other words, the necessity of the relationship is not deduced from the nature of its elements. One is held to be justified in asserting it without any previous definition of thing or ego or consciousness. Thus one might assert that "esse est percipi," or that "die Welt ist meine Vorstellung" without express reference to the nature of "esse," "percipi," "die Welt," "meine," or "Vorstellung." There would remain as evidence for the assertion only the invariable agreement of the elements denoted by these words. One finds no "esse" that is not perceived, no "Welt" that is not an ego's idea. But the method of agreement, unless tested by the method of difference, affords no proof; especially when, as in this case, there is an accidental reason for the invariability of the agreement. To rely on or employ invariable agreement when unsupported by other evidence is to commit that elementary fallacy, of which *post hoc ergo propter hoc* is the most common case. It is unnecessary for me to urge that this fallacy has been not infrequently committed, and that it has served on the whole as the favorite means of beguiling innocent minds into the vestibule of subjectivistic philosophies. But the degree to which this fallacy is virtually involved in the more advanced reasoning of idealism, is not, I think, sufficiently recognized.

Let us consider, for example, what I have called the "formative" theory, reducible to the proposition, E forms T . This epistemology owes its chief claim to distinction to the fact that it starts from an analysis of T , and is therefore more rational than the creative theory. It is shown that every T involves the same group of ideas or categories, so that it is possible to define *thing in general* in terms of that group. More specifically, it is shown that everything involves such formal characters as shall enable it to stand in determinate relations with all other things. Since everything must belong to truth, and since truth is one and systematic, everything must possess the logical qualifications for membership in one universal system.

Now it is evident that this is not as yet idealistic. And yet, for some reason, it is often regarded as equivalent to idealism, or as being only one inevitable step short of idealism. This is easily explained if we allow for the surreptitious or unconscious use of the ego-centric predicament. Thus, the categories may be introduced not as the conditions of being, but as the conditions of "experience," or consciousness of being. But this means that things are already construed as instances of the $(E)R^e$ relationship. Doubtless whatever is necessary to things is necessary to the knowledge of them; so that one may regard ontological constants as cognitive constants. But this proves that knowledge is a function of things, and not that things are a function of knowledge. The latter assertion, unless new evidence is introduced, is simply a *petitio principii*. That this fact should so easily escape notice is due, I think, to the presumption that since things are severally found in the $(E)R^e$ relationship, that relationship must be necessary to them. It is easy to beg the question because whatever one makes the starting-point of the analysis is in fact "my object." Building the results of the analysis about this, the total system becomes a system of consciousness.

But there is another motive that contributes to a looseness of reasoning here. The categories are ideas rather than sensations; they are the fruit of analysis, detached from the empirical context by thought. They do not belong to the individuals of nature. But where, then, do they belong? Now most modern philosophers scarcely regard it as necessary to prove that categories, relations, and ideas, are essentially modes of thought; and in this they are aided and abetted by common sense. For, since the overthrow of scholasticism, philosophy and common sense alike have been habitually nominalistic. Empiricists and rationalists differ only in that with the former nominalism is given a sceptical emphasis, while with the latter it is given a constructive emphasis. But to adopt a nominalistic interpretation of the categories, to regard them as acts of consciousness, is to commit oneself forthwith to idealism. *Are* categories necessarily related to a knower, *are* they conditioned by the relationship $R^e(E)$? Here again we meet with the ego-centric predicament. It is impossible to find a relation without a comparison of terms, it is impossible to find a fundamental logical concept that is not conceived. Since I can not find a category without knowing it in the manner required by categories, I can find no category that is not a mode of thought. But since this clearly has to do with the circumstances conditioning my investigation, it must be discounted in my conclusions concerning the thing investigated. If I allow it to create the slightest presumption one way or the other, and

rely on that presumption in further inferences, my construction is vicious and ungrounded.

While I very much doubt if any idealistic theory is untainted by this error, it is possible to define a third variety of the theory in which the error is much less conspicuous. This variety I have called the "identity" theory, because it reduces to the proposition: E is T . This theory also bases itself on an analysis of T , or of T so far as intelligible and true. It is held that every T is definable in terms of relations through which it is connected with every other T . So far formative and identical theories agree. But in the latter more attention is given to the implications of a relational definition. If T' is definable in terms of $R(T^2)$, then $R(T^2)$ must be internal to T' , or, $(T')R(T^2)$ must be identical with T' . At the same time, $(T')R(T^2)$ must be identical with T^2 . Furthermore, since T' and T^2 are defined by $(T')R(T^2)$, and not $(T')R(T^2)$ by T' and T^2 , or, since $(T')R(T^2)$ is intelligible *per se*, while T' and T^2 are intelligible only in terms of $(T')R(T^2)$, the latter must be held to be prior to the former, as their ground, source, or explanation. In other words, in order that being shall be definable, it must be construed as a whole which is both identical with its parts, and also prior to them. Now this conclusion *may be* regarded as equivalent to a *reductio ad absurdum* of the relational definition; in which case it is necessary to establish idealism on entirely different grounds.² But what some idealists regard as beneath reason, other idealists regard as the ideal of reason. It is conceded that the conception of a whole which is both prior to, and identical with, its parts will not hold of any whole of nature, such as mechanism or organism. Nor is it possible to define it abstractly, using symbols for terms and relations. If the attempt be made it will result only in such self-contradictions as T' is identical with $(T')R(T^2)$, or $(T')R(T^2)$ is prior to T' . Indeed, if it were possible to discover this type of whole and part relationship in nature or the realm of logic, it would be impossible to infer idealism from it.³ But it is contended that there is a unique

² I am thinking of Mr. Bradley in particular. For him the absolute is a means of dispensing altogether with relations, and hence is not argued from the necessity of a consciousness that shall supply relations. Mr. Bradley's idealism ("We perceive, on reflection, that to be real, or even barely to exist, must be to fall within sentience." "Appearance and Reality," p. 144) is, so far as I can see, either a pure assumption, or a loose and unwarranted inference from the ego-centric predicament.

³ Thus Professor Royce's contention that the part is equal to the whole in an infinite system, would prove only that being is infinite, and not that it is in any sense conscious. His subjectivism is, so far as I can see, not proven at all. In "The Conception of God" and in certain more recent verbal utterances he would seem to be exploiting the ego-centric predicament. In "The World

complex in which this relationship is directly and luminously exhibited, that complex being consciousness.⁴

The crucial and more neglected question yet remains, however. Why should it be asserted that the self, subject, or ego is both identical with each of its objects and also prior to them? Why should knowledge be construed as "self-representation," "self-externalization" or "self-positing"? Now the answer to this question lies, in part, I am convinced, in a certain readiness among philosophers to assert *anything* of consciousness. It would appear that there is no conception too paradoxical to be harbored there. The proposition, gold is gold, is redundant, and the proposition, blue is its own other is nonsense; but the propositions, I am I, and, the self is its own other, somehow pass for intelligible discourse. Similarly, while a planetary system which is identical with each planet and prior to them, is clearly a doubtful proposition, men nod their heads sagely when they hear of a self which can dispense with its own parts, and also be wholly present to each of them. So long as the self remains obscure and unanalyzed, loosely denoted by such terms as "I," "ego," or "subject," it will doubtless afford a refuge for logical lawlessness.

But apart from this general disposition to laxity and high-handedness, how are we to account for the assertion that the thing known and the knower, the *T* and the *E*, are identical. Unless there is ground for such an assertion the conception of a whole that is identical with each of its parts and prior to them, can not be saved

and the Individual," he relies mainly on the contention that, since nothing in the universe can be strictly independent of anything else, objects can not be independent of ideas. But, as I have endeavored to point out above, this would prove that the universe can be defined in terms of anything you choose.

"The unity is at once the whole of which the individuals are parts, and also completely present in every individual." "It still remains true that it is that particular relation of which the only example known to us is consciousness." McTaggart, "Studies in the Hegelian Cosmology," pp. 14, 19.

"There is need of a single term to describe a One which is not a system, and for this purpose the capitalized word Individual, as qualified by the indefinite article, answers as well as any other known to the writer. It will later appear that only a self can be, in this sense, an Individual. . . . An Individual, on the other hand, has an existence fundamental, logically prior, to that of the parts or of the members. It is not separate from them, but it is distinguishable from them. It is fundamental to the parts, whereas the parts, though they are real, are not absolutely essential to it: it expresses itself in the parts, instead of being made up of them." Calkins, "The Persistent Problems of Philosophy," pp. 378-379.

I should regard this as a rather incautious statement of the argument; not untrue to Hegel, but so express in its recognition of the priority of the whole self over its several acts or objects as to be exposed to the charge of naïve spiritualism.

from its inherent self-contradictions. As a general conception it is not to be distinguished from the obsolescent notion of substance, or of a thing-essence which is all of its attributes, and yet none of them. That it does not share the hard fate of the latter notion is due to the supposition that it is saved by special revelation. Although in general it is absurd, we are supposed to be unable to deny it because of the discovery of an unmistakable case of it. The fact being so strange, we must overcome our prejudice against fiction. We should not be entitled to invent a universal or absolute knower, identical with its objects severally, and prior to all of them, unless we had evidence that a knower, and a knower alone, is capable of just that sort of relationship. Hence everything is staked on an examination of such instances of knowing as can be observed.

It is asserted that in any typical case of knowing $(E)R^c(T)$, the knower (E) and the thing known (T) are identical. But if we mean by E and T *the terms of this relationship*, then they are clearly not identical; for their identity would destroy the relationship, and the operation would lose its complexity. If, on the other hand, I mean by E and T *the complete or essential* natures of the entities referred to, then they do not stand in the cognitive relation. Thus I may assert that E is really $(E)R^c(T)$, and that T is also really $(E)R^c(T)$, and that E and T are therefore really identical. But $(E)R^c(T)$ does not stand in the relation R^c to $(E)R^c(T)$; in other words, *I know T* does not know *I know T*. In any case, then, it is impossible to assert that the knower and the thing known are identical, where these are defined as the terms of one cognitive relationship.⁵

Now if it be so simple a matter to refute the assertion that in the complex $(E)R^c(T)$, E is T , how are we to account for that assertion? Only, I think, through the characteristic confusion of mind created by the ego-centric predicament. The T of the complex $(E)R^c(T)$ does, as a matter of fact, stand in the relation R^c to E . This can not be denied, albeit it is a redundant proposition when affirmed. It is only necessary to proceed, loosely and as may suit one's convenience, to substitute $(E)(R^c)(T)$ for T , or *thing qua known* for thing, and one has accomplished the miracle of identifying a complex with one of its own elements. Then, the other element having been dealt with in the same manner, the two elements are made equal to an identical complex, and hence to each other. But the whole question of the extent to which $(E)(R^c)T$ can be substituted for T , depends on a very precise knowledge of the bearing of this relationship on T . The original problem, *What does*

⁵ It is evident that such considerations as these would necessitate a revision of certain current notions of "self-consciousness." But I can not follow up the suggestion here.

$(E)R^e(T)$ mean to T ? has, in all this elaborate dialectic, only been prejudged and confused. And the solution offered is not only without a shred of evidence, but is charged with the support of a logical abortion.

I have not undertaken to do more than to isolate a species of dangerous reasoning that infests a certain region of philosophical inquiry. The question of the precise modification which a thing undergoes when it is known, is a proper problem; and the theory that that modification is profound, or even in some sense definitive, is a legitimate speculative alternative. But nothing whatsoever can be inferred from the mere ubiquity of that modification, from the mere fact that nothing can be found which is not thus modified. This self-evident fact simply defines the means that must be employed for the solution of the problem. We can not employ a method which in other cases proves a convenient preliminary step, the empirical, denotative method of agreement and difference. There remains, however, the method which must eventually be employed in any exact investigation, the method of analysis. The mere fact that T is invariably found in a certain complex, since it can not be corrected by the method of difference, must be set aside, and not allowed to weigh in our calculations. But we may still have recourse to that analysis of all the elements of the complex, of T , E , and R^e , which would be required in any case before our conclusions could assume any high degree of exactness. Having discovered just what an ego is, just what a thing is, and just what it means for an ego to know a thing, we may hope to define precisely what transpires when a thing is known by an ego. And until these more elementary matters have been disposed of we shall do well to postpone an epistemological problem that is not only highly complicated but of crucial importance for the whole system of philosophical knowledge.

RALPH BARTON PERRY.

HARVARD UNIVERSITY.

EDUCATIONAL PSYCHOLOGY IN THE SECONDARY SCHOOL¹

THERE seem many reasons to believe that educational psychology has at the present day reached a critical stage in its development. Having for some years past enjoyed the approval of theorists on education, it is at length beginning to attract the attention of those actually engaged in the practise of teaching. Should it fail now to justify itself in the eyes of the latter, there can be no

¹ Paper read before the British Psychological Society.

doubt that it will suffer a setback from which it will take many years to recover. Should, on the other hand, experienced teachers admit its claims, the results of school practise, expressed accurately in psychological terms, will go to swell the science itself, and we shall at last have—what we have *not* at present—an applied psychology of education.

The general objection to psychology brought forward by masters is that it teaches them little or nothing definite which they did not know originally or could not quickly gain from school experience. The majority would probably be willing to admit that the science is of general use in setting the mind in a certain direction, much as logic and methodology are. Their distrust of it for direct application is due mainly, I think, to the unsatisfactory state of the psychology of reasoning. The science of psychology fails just where the science of education has principal need of it. One of the prime functions of education is supposed to be the general or formal training of the intellect; but not even the possibility of such a formal training has yet been demonstrated. Much vague talk is indulged in by the unpsychological master about the "training of the logical faculty" imparted by different school disciplines. From a psychological point of view, reasoning is a question of matter as well as of form, and only scientific observation and experiment are competent to decide the relative importance of each. Theories of mental systems, apperception masses, etc., are far too general and vague for practical application. The division of conceptual process into *comparison* and *abstraction* on the one hand, and various forms of *constructive process* (as it is called) on the other—both classes being recognized as *productive process* working on the material supplied by memory and association—is likewise too vague a schema as it stands, although full of suggestion for more thoroughgoing analysis.

Modern experimental psychology, by employing experiment, simplifying the conditions, and, above all, by endeavoring to obtain quantitative answers to its questions, has placed itself in a much more promising position. Its ideal comes much closer to that of an applied science, such as the educational psychology of the future must be. Its methods, too, are such as must command ultimate success, if granted sufficient opportunity of application in the schools. An enumeration of the more prominent of these methods will show, however, that there is reason to fear that such opportunity may not be forthcoming to any great extent.

There is, in the first place, a large class of experiments for the investigation of the phenomena of practise and fatigue. Apart from the internal criticisms that can be passed on the ergographic, esthesiometric, and other tests employed, the fatigue measured in

cases where no such criticism is applicable has been that produced by mechanical processes such as addition and multiplication under artificial conditions of interest, etc., so that the results can hardly be taken as typical for intellectual work done under school conditions.

For the determination of individual differences in mental capacity, innumerable tests have been devised, such as the relative and absolute thresholds in the various realms of sensation, the mean variation for these thresholds (taken as a measure of the attention), the estimation of space and time, reaction-times, the crossing out of words containing certain stated letters in a page of print, tachistoscopic experiments on perceptual processes (*e. g.*, reading), determination of association times; and so-called combination tests, such as those of Ebbinghaus, in which omitted words and syllables of pieces of prose have to be supplied by the subject. To many of these the objection can be made that they do not directly measure general mental capacity, and that the interpretation of their results as symptoms or signs of such is very uncertain; others do directly measure mental processes involved in intellectual work, but under conditions so artificial and so greatly simplified that their results are not readily applicable to ordinary experience.

In theory all these methods are justifiable, and in pure psychology they all find a rightful place. Yet it is extremely doubtful whether secondary schools will be ready, either now or in the immediate future, to devote the requisite amount of time for the application of such methods.² Schools have their own methods of measurement in the marking system, if system it can be called; and reform is more likely to come from within this system than from artificial experiment. Such a reform would have to be based on a most detailed analysis of the psychological processes involved in the learning of the various school subjects, and allocation of marks accordingly. The present system of taking the entire subject (*e. g.*, Latin or mathematics) as the unit is useless for scientific purposes, and the determination of correlation-coefficients for different pairs of subjects on the basis of *aggregate* marks is simply waste of time and trouble. Yet knowledge of the precise relations between one subject and another would be of the greatest help in the drawing up of a curriculum, and such knowledge would be obtainable from the correlation-coefficients³ of corresponding fundamental mental processes involved in the learning of the two subjects. Assuming sufficient

² In *primary* schools the experiments and tests above mentioned would in themselves possess considerable educational value, so that the objection propounded in the text would not apply in their case.

³ For explanation of the principle of *correlation* and methods of calculating correlation-coefficients, see Karl Pearson: "Grammar of Science," 2d edition, Ch. X.; also see below.

constancy of marking and a sufficient number of measurements, the correlation-coefficients calculated might in their turn be used to throw light on the accuracy of the original psychological analysis.

Of course, the scientific analysis of a school subject, such as Latin or mathematics, is essentially a logical analysis, but if considered with reference to the demands made on the mind of the learner by the subject and the method of teaching the subject, and also with reference to the matter in which the logical forms are inherent, a psychological analysis emerges, which indeed closely follows, although it does not altogether coincide with, the logical one. Method has systematized each subject as a body of knowledge in which any one stage is logically as important and indispensable as any other; but for the learner these stages are of different values—make unequal demands on his memory, attention, etc., as is shown by the varying amounts of time and practise needed to surmount them.

Let us take mathematics as an illustration. Has mathematics a psychology as well as a logic? The subject is held to be unrivaled in its power of training the reasoning faculty. Now, Professor James, in his treatment of the psychology of reasoning, sums up the process as follows:⁴

“1. An extracted character is taken as equivalent to the entire datum from which it comes.

“2. The character thus taken suggests a certain consequence more obviously than it was suggested by the total datum as it originally came.”

The psychological factors at work are, then, according to Professor James, “dissociation by varying concomitants” and “association by similarity.”

These processes certainly occur at all stages of mathematical reasoning, but practical experience points to the need of a more extended analysis. The difference between problems and theorems in geometry, the exceptional difficulty experienced by many boys in grasping the mathematical principle of proportion, the astonishing variations in memory, apart from variations of interest, attaching to different parts of mathematics, stand out so prominently in practise and with such uniformity that psychological factors of great constancy and generality must be assumed to account for them.

Introspection gives little help in the analysis. Beyond individual differences in the form and vividness of the mental imagery employed, little can be thus directly distinguished. So much of the process seems to be subconscious, or even unconscious, that the greater part of its dissection will be achieved, if at all, only by the application of indirect methods.

⁴ “Principles of Psychology,” Vol. II., p. 340.

The method which I wish to suggest in this short paper is one based on the determination of *correlation-coefficients*, deriving its measurements from a *differential system of marking*. Of course, such a differential system of marking in itself presupposes some amount of preliminary analysis, but for this the logical analysis of the school-subject and the broad psychological distinctions already recognized by teachers provide an adequate first step. The subsequent course of the investigation would be, as it were, circular and yet progressive. The correlation-coefficients first calculated would point to more detailed psychological analysis, and this in its turn would increase the number and accuracy of coefficients subsequently obtained. Even after the limits of direct psychological analysis had been passed, the coefficients might yet serve to draw attention to the existence of psychological factors only observable in their physiological effects. The principle of this form of analysis by correlation-coefficients is common to all the objective sciences, though probably better known as "the method of concomitant variation." For the purposes of this paper it may be briefly stated thus: presumption of connection between any two processes, *i. e.*, of the existence of a still deeper-lying process common to both, will vary in strength in direct proportion to the size of the coefficient of correlation between them, calculated according to any of the well-known and approved methods.

The program sketched in outline above is one suited rather for the secondary than for the primary school, since it is one to be carried out, if at all, by the masters themselves. That it is a workable scheme, assuming psychological qualification and psychological interest on the part of the masters, I have little doubt.⁵ Control experiments with trained subjects in the psychological laboratory would of course be simultaneously necessary, *i. e.*, the student of applied educational psychology would need to work hand in hand with the psychological specialist; but here again there should be found no insurmountable difficulty.

WILLIAM BROWN.

KINGS COLLEGE, LONDON.

⁵ Towards the close of last year (1908), the writer applied the correlation-method indicated above to the analysis of elementary mathematical ability as displayed by a set of about eighty boys in an English public school. All the boys were examined on the same papers, and the coefficients that have been obtained show a tendency to harmonise with one another and with practical experience to a degree very encouraging for the method. The evaluation of the results (with corrections for the effects of extraneous conditions) is still in progress. An account of the research will be published shortly.

DISCUSSION

A PHILOSOPHICAL PLATFORM FROM ANOTHER
STANDPOINT

THE discussion concerning the question of a philosophical platform by Professor Schmidt,¹ aside from its intrinsic interest suggests a related if not dependent problem. What is the situation which presents itself to the student with specialized equipment who would enter the field of philosophical research? To answer this query let us turn aside from the more systematic world views and consider the discussions of the minor problems in current literature and more particularly in the periodicals. The first point to be remarked is the arbitrary nature of the choice in many of the subjects investigated. It appears that any topic in the whole realm of philosophy which may happen to appeal to the author becomes the object of attention. Granted that valuable conclusions may be reached, I question if much, if not the major part, of such effort does not fail in its service because of its isolated character, because the investigation lacks integration in some greater problem which has consciously originated it and which will eventually absorb its conclusions. In these cases such integration is largely a matter of chance and by no means a necessary or even probable outcome of the study. Again, it is observed that owing to fundamental differences in methods of procedure substantially the same point may come up repeatedly for consideration and individual results be obtained, and yet the fact is obscured by lack of unity in expression. In order, therefore, to appreciate the bearings of a conclusion, and thereby render it a contribution one must first translate the material into the logical form consistent with another context.

Now this absence of direction in the multiplicity of philosophical efforts results in a perplexing outlook to the would-be-investigator and is scarcely an inspiring situation. For the impetus to endeavor must lie in the hope of some definite achievement, some positive contribution, however small that may be. One may be informed in the history of philosophical doctrines and be cognizant of the development of ideas therein embodied and thence obtain little or no light upon the solution of these difficulties.

Is it impossible from the nature of the subject to establish something akin to the method employed in a biological laboratory? The chief of a laboratory may suggest problems to be investigated or the subordinate worker himself may originate the subject, but in either case the question is one which finds its place in some larger problem; individual contributions are coordinated into a greater whole.

¹ This JOURNAL, Vol. VI., p. 673.

If the coordination in philosophical inquiry prove not immediately feasible in the shape of one "philosophical platform," perhaps an approach to this as an ideal would be the establishment of a limited number of schools of philosophy, differentiated by their fundamental diversities in the formulations of problems. Then at least within the limits of each school similar methods would be employed and a common language spoken and combined efforts would crystallize in a single body of truth. The resulting explicit statements of the distinctive attitudes of the various schools would itself be a step toward the elimination of the differences in standpoint.

But whatever this may be worth as a suggestion, the main purport of these remarks is to call attention to the condition of affairs which confronts the student in philosophy and the connection of this situation with the absence of definite coordination among philosophers.

SAVILLA ALICE ELKUS.

NEW YORK CITY.

REVIEWS AND ABSTRACTS OF LITERATURE

The Philosophy of Change. D. P. RHODES. New York: The Macmillan Co. 1909. Pp. xxv + 389.

If the passion to set one's house in order never reached the attic; if it left one's intellectual furnishings where the deliveryman dropped them, the paper and string about them, the varnish dull with the shipper's thumbprints, or even the packing-cases unopened, there would be neither philosophers nor philosophy. When, therefore, as in the instance of Mr. Rhodes and his book, this passion flares up in the heart of a small householder who, the reviewer judges, does not earn his salt by practising it in the schools; when, in short, such a one tries to arrange his ideas in that neatness of pattern which is called philosophical, it ill becomes professional thinkers to stay his hand, be it by violence, scoffing, or neglect. Let the labor union, if it will, brickbat the "scab" and the amateur of its trade; the philosophical band that does likewise sins against its own spirit (and, if it persists, may some day find itself to be a suicide club).

But writers like Mr. Rhodes make open-mindedness a hard virtue for his critics. He ignores, as a matter of conscience, all other philosophers; neither their names nor their opinions appear in his pages, even for reproof. Emulating Descartes—unwittingly?—he destroyed even the notes in which he had recorded his own arguments for and against the views of his "notable predecessors," banished all books from his study, "and with no implements further than pencil and spotless paper, a few brass pins, and a tennis-ball, I set about inquiring seriously into the destiny of man. I even tried to forget who they were that had said anything on the subject before, or that there were such things as jealousies and fashions in philosophy." This method having been tried often enough since Augustine and found weak, the philosopher who sets his house in order by it

will tempt few visitors over the threshold in these fact-surfeited days. Nor will the first chapter of "The Philosophy of Change," where Mr. Rhodes applies his method, encourage the few to inspect the rest of the edifice. Here the windows are slits, and only two; the glass in them is very blue, and the antechamber chairs creak pitifully under the weight of the leanest critic. Here we find that there are no certainties in life and only two truths of highest probability. These are (1) that "every particular experience is illusory," and (2) "experience, illusory though it be in every particular, must nevertheless possess some significance." It is neither Plato nor Kant nor Hume that speaks, though, but Heraclitus, and Heraclitus Revivodus outdoes his elder self. Mr. Rhodes would have gone lost in the common run of idealists and subjectivists, and he stopped, after discarding into the trash-pile of illusion substance, matter, and things in general. But he deals a stroke of genius—albeit genius of the kind most nearly allied to madness—when he serves with the same rude toss the holiest of holy philosophical entities, the idea. Thus runs the blasphemy:

"Ideas must be interdependent and incapable of being isolated . . . from the most remote appearances of the substance-world (which is itself all illusion). Each idea exists solely by virtue of the change in its relations to all other ideas and substance-appearances. The idea of a pebble is conditioned by all other pebbles and ideas of them. An idea of altruism is conditioned by the equally general ideas of egoism, humanity, love, etc., all of which are continuously changing. The existing idea of change is conditioned by the equally general idea of the impossible, and is made up of the invariably unexploited factors in particular ideas and substance-appearances. An idea can not endure; it is continuously being supplanted, . . . even the idea of change. . . . Ideas, in sum, are not things changing, but change."

This, of course, means only one thing as to consciousness itself, and Mr. Rhodes clearly sees what that is: "Consciousness is not a thing apart nor an essential property of, or resident in any thing; it is a symbol popular in the present age." The broom-work in his housecleaning is now done; nothing is left save change. And his discussion of change proves that he has well emancipated himself from all previous philosophy. "There can not be more than one kind of change;" what appear to be varieties of change "consist in differences of position in the fixed order of change." Again, "Change can not be derived from something else, for the fact of derivation would merge its antecedent with itself." "Change could have no kind of beginning or end. If it began, it must already have been changed by virtue of the beginning; if it ended, the end would show that it still existed." In brief, there is only one immutable, and that same is change itself! Mr. Rhodes holds in reserve for us only one more audacious exhibition of Zenonian dialectic, to wit, the argument, from the above doctrine of change, that reality is the limit of existence (limit here carrying its mathematical significance). Or, as his formula puts it: "Reality = that which *is* = that which may not *become* = the impossible."

Before all this school-bred critics must stand dumb. Mr. Rhodes's calm hypostases and swift equivocations are most repulsive. Not more

so in their lineaments than Mr. Bradley's; but, unlike Mr. Bradley's, they do not wear the garment of some long-loved orthodoxy. They bring up in none of "Uberweg's pigeonholes." No amiable, book-fearing old bondholder has endowed a university chair anywhere for their dissemination. Their absurdities are too new, too original, and too little suited to keep alive any tradition, good or bad. What possible interest, for example, can schoolman or laic find in the third chapter, the book's core, on "The Fiction of a Universe"? Mr. Rhodes here assumes at the outset that "there existed at a certain time in the past a universe which, as a whole or in any part, was devoid of geometrical form and which consisted of a measurable amount of continuous, homogeneous substance." This, we are told, is a hypothesis set up, not on astronomical or other facts, but only for the sake of avoiding the paradoxes of space and time. Just what it leads to, the reviewer has not been able to discover. Among other things, it revives the theory of continuous destruction and fresh creation of the physical universe. And, in the explanation of his "real cosmoids" (the elements of reality) as "the least possible *changes* of position," which themselves disappear when they have lived out their minimum change, Mr. Rhodes seems to have struck upon that most unusual notion of a "time atom," which an acute Persian philosopher named al-Baqilani once worked out in a fascinating atomistic monadism while Leibnitz's forebears were eating acorns in the European wilderness.

Whether the formulas of Mr. Rhodes's hypermechanics are truer or more fanciful than those which many theoretical physicists and mathematizing philosophers have been copiously writing of late, I do not know. They resemble these as homespun resembles factory stuff; indeed, whole pages from Mr. Rhodes echo, in the vernacular, the highly technical relativism of the "lines of force" theorists and the hypergeometers. Though loose and uninformed, they are plainly the residue of a prodigious amount of hard, earnest thinking. They are of the stuff that a teacher of philosophy might sigh for in undergraduate essays; they are the "poor but honest parents" of useful speculation. And what they lack in marked value they make up for with the grace of sincere modesty.

WALTER B. PITKIN.

COLUMBIA UNIVERSITY.

The Meaning of Truth: A Sequel to "Pragmatism." WILLIAM JAMES.

London, Bombay, and Calcutta: Longmans, Green, & Co. 1909. Pp. xxi + 298.

The paramount issue raised by pragmatism concerns the meaning of a true idea; and it is because this truth-question is a pivotal one, and because the "definitive settlement of it will mark a turning point in the history of epistemology," that this latest volume from Professor James has been prepared. The book is a collection of papers and addresses contributed by him at various times during the past twenty-five years, to which are added a few that are now published for the first time. The special purpose of this collection of writings is best stated in Professor James's own words: "In order to make my own thought more ac-

cessible to those who hereafter may have to study the (truth) question I have collected in the volume that follows all the work of my pen that bears directly on the truth-question" (Preface, p. viii). One effect which the massed impression of these writings should produce, is a sensible diminution in the number of the "misunderstanders" of pragmatism. Certainly, if this misunderstanding persists, it can not, I think, fairly be attributed to Dr. James himself. But whether the striking and luminous presentation of the doctrine of pragmatism in this volume and in its fellow volume, "Pragmatism," will effect any conversions, is another story. My own experience as an anti-pragmatist makes me sceptical of such a result. I know too well from personal experience the hardness of the unregenerate heart in these matters; the strength of mental habits and prepossessions, and the seductive power of the logic of "abstractionism," to expect that this new gospel will gain many converts in the present generation. Had this same volume fallen into my hands in my unregenerate days, I know well how it would have fared; I should have seen inconsistencies between the earlier and the later writings of James, I should have found, despite the vigorous disclaimer of its author, a radical divergence between the pragmatism of James and the Schiller-Dewey pragmatism; the epistemology would have been pronounced solipsistic, and the implied and consequent metaphysics, mere slush. If I now venture to say, that to-day I can discover in the writings of Dr. James, in this volume or elsewhere, none of these things, I think it not unlikely some of my quondam anti-pragmatist friends will say, I may have experienced a change of *heart*, but certainly not an improvement in my understanding. However, I will add in way of apology, that this change of mental view, I attribute mainly to my own attempts to remain an anti-pragmatist, and as such to meet the counter-attack of the pragmatist; to answer the crucial question relating to the meaning, the content, of a true idea, and the possibility of distinguishing between a true and a false idea. It dawned upon me at last, that to go on answering this pivotal question after the manner of intellectualism was about as effective in the way of defense as the device of the ostrich in protecting itself from assault by hiding its head under its wing.

But to return to this book. I think Dr. James has clearly carried the war into Africa, and distinctly put the rejecter of pragmatism upon the defensive. It is this aggressive front, this note of challenge, this forcing upon the anti-pragmatist an alternative that constitutes the strength and the strategic advantage of James's position. To begin with the truth-question, pragmatism gives a definition of the truth-relation, and the trueness of an idea in definite, concrete terms; he claims that this statement of what the idea actually does, or has the capacity for doing, exhausts the content of its meaning. The anti-pragmatist rejects this view; then the pragmatist challenges him to specify any significant and relevant element of meaning which his own definition of the terms—true—agreement with reality, etc., does not contain; and how does the anti-pragmatist meet this challenge? I must confess, that up to date, I know of no answers that are not either words without meaning or which do not in-

volve postulates, or assumptions that, when scrutinized, are found to be as useless as they are insusceptible of verification. In thus rejecting the pragmatist's definition of a true idea, the anti-pragmatist faces an alternative; and, to judge from my own endeavors in the past and from what I have read, it looks very much as if all that the pragmatist's opponents have yet done is to shut their eyes to the fact that a real alternative is *there* for them to face.

Again, the anti-pragmatist rejects, as the quintessence of error and confusion, the pragmatist's identification of the truth of an idea and the verification of that idea; to him, snugly ensconced in his logical categories and distinctions, there is a vital difference between the trueness of an idea and the knowledge of the fact that this idea is true. Is not the idea true the moment it is framed in somebody's mind? And does not this idea *remain* true even should no human knower at least ever discover that truth? The pragmatist replies by a counter-question: "If I have not given the correct account of truth and verification, show me what there is either in your idea itself, or in this supposed relation to its object, which gives any meaning to the statement. This idea was true prior to its verification." Here is the crux, the anti-pragmatist must face this alternative, either to give up his attempted distinction between the truth of an idea and the verifiability of this idea, or he must postulate some super-human knower of this true idea; and then how will he show that this postulated knower is of any use to us would-be human knowers, either in enabling us to *know* whether our ideas are true or not true, or in giving us any consolation for our failure to know?

Once more, the pragmatism of James meets the objection that his epistemology issues in solipsism and achieves no true transcendence by the counter-question: If the object in the cognitive relation is not a kind of reality that can be led up to in experiential processes, if it be not the *terminus ad quem* of experiential workings, if it must possess some sort of perseity, thing in itselfness,—a transcendency pragmatism does not recognize—then tell us in what way this truly real-being, this really *transcendent* can become known to us mortals. How is the chasm of *your* transcendence to be crossed? If the transcendence which knowledge involves is something which is not passable by *our* human ideas, as experience *in posse*, how can *we* ever know whether or not our ideas have bridged the chasm and made fast to a reality there? Again, the anti-pragmatist faces the alternative; either the epistemology of pragmatism or the unknowable.

Such, I think, is the legitimate force of the presentation of pragmatism made in this latest volume from the pen of William James. And the conclusion of the whole matter is; If the anti-pragmatists are to continue the fight, they must bring into action better artillery and better gunners; they must choose more strategic positions for attack; they must look well to their defenses, and at least provide for the contingency of a retreat.

JOHN E. RUSSELL.

JOURNALS AND NEW BOOKS

THE PHILOSOPHICAL REVIEW. November, 1909. *French Works on the History of Philosophy During 1907-08* (pp. 583-599): VICTOR DELBOS. - The works described show a good historic method and a sufficient spirit of objectivity, the most important treat of the history of philosophy in connection with the history of science. It is hoped that future historians will take greater account of the links between philosophic doctrines and the diverse manifestations of the religious spirit. *Individuality and Freedom* (pp. 600-614): ELLEN BLISS TALBOT. - The concept of individuality may be analyzed into unity, uniqueness, and self-sufficiency. The denial of real alternations is not inconsistent with the affirmation of each of these factors, and, therefore, of individuality. *The Postulates of a Self-critical Epistemology* (pp. 615-641): EDWARD GLEASON SPAULDING. - A self-critical epistemology, as is revealed by the absolutist's typical criticism of pragmatism: (1) must make a consistent use of terms; (2) must be free from contradictions, either of part by part, or of part by whole, or conversely; (3) must presuppose and imply itself; (4) each postulate of a self-critical system will be implied by each of the others and by the system as a whole, and conversely each will be applicable to each and so, collectively, to the system as a whole, and the system as a whole, both to itself and to each; (5) by its own postulates and the definition derived from them, a self-critical system must anticipate and refute all external criticism. Three logical doctrines being set up experimentally, the foundations of such a self-critical epistemology can be set forth in fifteen postulates. Such a system can be described as an evolutionary realism and empiricism. *Reviews of Books*: Willy Kabitz, *Die Philosophie des jungen Leibnitz*: FRANK THILLY. John Watson, *The Philosophy of Kant Explained*: NORMAN SMITH. Albert Leclère, *La Morale rationnelle dans ses relations avec la philosophie générale*: RALPH BARTON PERRY. H. A. Pritchard, *Kant's Theory of Knowledge*: WALTER T. MARVIN. *Notices of New Books. Summaries of Articles. Notes. Index.*

ARCHIV FÜR GESCHICHTE DER PHILOSOPHIE. Band XV., Heft 4. July, 1909. *Die Reihenfolge der Platonischen Schriften* (pp. 435-456): A. GOEDECKEMEYER. - The Republic is treated as the product of two different periods of Plato's life. The dialogues are classified according to their relation to Plato's socratic point of departure, his independent development, first, "erotic," and, second, dialectic, and his final submission to alien influences. *Die Tendenzen der platonischen Dialoge Theaitetos Sophistes Politikos* (pp. 456-492): J. EBERZ. - The Sophist is directed at Aristotle, who, having been gently corrected in the Parmenides, is here, after his secession, condemned. Theætetus is Dion, and Socrates the younger is Speusippus. Further identifications are to follow. *Der νοῦς παθητικός bei Aristoteles* (pp. 493-510): P. BOKOWNEW. - The passive reason, as an hypothesis to explain the interaction of soul and reason, and so the unity of the soul, fails, because of Aristotle's

wavering between the rationalist and empiricist viewpoint. *Kant's Kritik der Reinen Vernunft und die Geschichte der Philosophie* (pp. 510-532): H. ROMUNDT. - The distinction between the history of criticism and that of the system of science was rightly grasped by Kant, and also his own place in that former history, as the modern counterpart of Socrates, the synthesis succeeding dogmatic thesis and sceptic antithesis. *Drittes Preisausschreiben der "Kantgesellschaft"* (pp. 533-535): The competition for these prizes closes April 22, 1910, and has for its subject, "What are the real advances that metaphysics has made in Germany since Hegel and Herbart?" *Il Problema metafisico secondo Aristotle e l'interpretazione d'un passo della metafisica* (pp. 436-450): P. EUSEBIETTI. - The passage is, Met. Lambda, 10, 1075, b 17-24. *Jahresbericht über die Philosophie im Islam III.* (pp. 553-563): M. HORTON. - *Die neuesten Erscheinungen.*

Carus, Paul. *Philosophy as a Science.* Chicago: The Open Court Publishing Co. 1909. Pp. ix + 213. \$0.50.

De Wulf, Maurice. *History of Medieval Philosophy.* Translated by P. Coffey. London, New York, Bombay, and Calcutta: Longmans, Green, & Co. 1909. Pp. xii + 519.

Garrigou-Lagrange, Fr. R. *Le sens commun, la philosophie de l'être, et les formules dogmatiques.* Paris: Gabriel Beauchesne & Cie. 1909. Pp. xxx + 311.

Poulton, Edward Bagnall. *Charles Darwin and the Origin of Species: Addresses, etc., in America and England in the Year of the Two Anniversaries.* London, New York, Bombay, and Calcutta: Longmans, Green, & Co. 1909. Pp. xiv + 302.

Read, Carveth. *Natural and Social Morals.* London: Adam and Charles Black. 1909. Pp. xxv + 314.

NOTES AND NEWS

THE following abstract is from the *Athenæum* for December 24 of a paper by Professor W. R. Sorley on "The Interpretation of Evolution," read before the Section of Philosophy of the British Academy at its meeting on November 24: "The paper stated that the influence of 'The Origin of Species' was not restricted to biology; it extended to all the human sciences, and modified the philosophical attitude; through it emerged 'the philosophy of evolution' as (in Huxley's words) 'claimant to the throne of the world of thought.' The nature and validity of this claim require examination. The term 'evolution' itself is used with a variety of emphasis, and even of meaning. Sometimes the reference is to the theory of natural selection introduced by Darwin and Wallace; at other times the reference is to the theory of Organic Evolution, which gained precision and verifiability from the doctrine of natural selection, but is much older than, and possibly independent of, that doctrine; at yet other

times the reference is to the theory of Cosmic Evolution which, as worked out by Kant, and afterwards by Laplace, has a clear meaning only in application to inorganic nature. If evolution is to be set on 'the throne of the world of thought,' inorganic evolution and organic evolution must be somehow brought into line. The two processes have, as common characteristics, (1) continuity, (2) advance through antagonism, (3) alternating periods of stability and instability. But there is a *prima facie* distinction between the operative causes—between the mechanical forces in inorganic evolution and the vital processes postulated by organic evolution. The mechanical interpretation of evolution attempts to break down this distinction, and to account for vital processes in terms of physico-chemical process. But the difficulties in the way of this method of interpretation have not diminished during the last fifty years: (1) The origin of life remains an unsolved problem; careful experiments and the advance of microscopical science have shown that abiogenesis does not take place in the cases in which it was formerly thought that it did occur—or might occur. (2) Physiologists are, on the whole, less satisfied than they were in Darwin's lifetime with the adequacy of the physico-chemical explanation of the characteristic activities of the living body. (3) The theory of natural selection gave an impetus to the mechanical interpretation; but natural selection requires non-mechanical factors on which to act; and the rejection of the view that 'acquired characters' can be inherited has made the mechanical explanation of heredity almost unthinkable. If these points are admitted, the explanation given by mechanical causation is seen to be incomplete; the external factors have to be supplemented by the internal principle of life. In virtue of this principle the organism develops and preserves a certain structure, and reproduces its like; perhaps the same principle also influences the direction of evolution in interaction with environing conditions. Vital activity is therefore teleological, although the end which the organism realizes is not present to it in the form of idea. A vitalistic interpretation of evolution, however, is inadequate, because it leaves inorganic evolution out of account, and because it has no theory of the adaptation of external to internal factors; the conception of unconscious purpose is besides full of difficulty. If a unified interpretation of the whole course of evolution can be attained, and if it is granted that mechanism is inadequate, it will be only by means of the conception of conscious purpose. The difficulties of this interpretation consist chiefly in the conflict of ends and the imperfection of adaptations. No detailed solution of these difficulties can be offered; to some extent they arise from an assumption which must be guarded against; the purpose shown in evolution does not realize itself after the fashion of human design, which works mainly in an external and mechanical manner. In principle what is involved in the interpretation is an inversion of Spencer's postulate that 'we must interpret the more developed by the less developed.' Observations on various aspects of the problem were made by Mr. S. H. Hodgson, Professor Bosanquet, and the president."

THE program of the meeting of the Southern Society for Philosophy and Psychology held at Charlotte, North Carolina, on December 28 was as follows: "The Functions of the Anterior and Posterior Association Areas of the Cerebrum" Shepherd Ivory Franz; "Tests with a Modified Binet-Buzenet Æsthesiometer," David Spence Hill; "Voluntary Isolation of Control in a Group," Jasper C. Barnes; "The Visual and the Joint-muscle Source of the Size-weight Illusion," Robert H. Gault; "The Discrimination of Articulate Sounds by Raccoons," William T. Shepherd; "The Relative Value of the Affective and the Intellectual Processes in the Genesis of the Psychoses called Traumatic Neuresthenia," Tom A. Williams; Informal Reports from Psychological Laboratories; "The Consciousness of Meaning" and "Experiments on the Thought Process," Robert M. Ogden; "The Psychology of Prejudice," Josiah Morse; "The Concept of Laws of Nature," Edward E. Richardson; "The Evolution of the Sense of Beauty from the Point of View of Genetic and Social Psychology," William D. Furry; Address of the President: Subject, "The Concept of Evolution Among the Greeks," Albert Lefevre.

THE celebration of the eighth centennial anniversary of St. Anselm which was held on the twenty-first of last April at the church of Saint-Anselme at Rome has furnished the occasion to the *Revue de Philosophie* for an elaborate discussion of his personality and doctrines. The table of contents of the December issue is perhaps of interest as indicating the possibilities and limitations of such discussion. We quote it in full: "‘Saint Anselme, son temps, son rôle,’ A. Dufourcq; ‘Le Milieu philosophique à l’époque de saint Anselme,’ Comte Domel de Vorges; ‘L’École du Bec et Saint Anselme,’ A. Poree; ‘Sur la question des sources d’Anselme,’ A. Dräseke; ‘La preuve ontologique de l’existence de Dieu et saint Anselme,’ A. Lepidi; ‘La démonstration a priori de l’existence de Dieu chez saint Anselme,’ J. Geyser; ‘Anselme et Gaunilon,’ B. Adlhoeh; ‘Les rapports de la raison et de la foi dans la philosophie de saint Anselme,’ E. Beurlier; ‘La Théologie de saint Anselme,’ J. Bainvel; ‘La Sainteté en saint Anselme. Théorie et pratique,’ B. Marechaux; Notes sur les fêtes du centenaire à Aoste.”

ACCORDING to previous announcements, the American Philosophical Association held its annual meeting at New Haven, on invitation of Yale University and its department of philosophy, December 27-29, 1909. A report of the meeting of the Association will appear in a subsequent issue of the JOURNAL. Officers for the ensuing year were elected as follows: president, Professor C. M. Bakewell, of Yale University; vice-president, Professor A. O. Lovejoy, University of Missouri; secretary-treasurer, Professor E. G. Spaulding, of Princeton University; new members of the executive committee, Professor W. H. Sheldon, Dartmouth College, and Professor Norman Smith, Princeton University. Professor Frank Thilly, of Cornell University, was elected to fill the unexpired term of Professor Bakewell on the executive committee.

DR. MORTON PRINCE, of Boston, will give at the University of California from January to April a course of lectures on abnormal psychology.

THE JOURNAL OF PHILOSOPHY

PSYCHOLOGY AND SCIENTIFIC METHODS

BRADLEY OR BERGSON?

D R. BRADLEY has summed up his *Weltanschauung* in last October's *Mind*, in an article which for sincerity and brevity leaves nothing to be desired. His thought and Bergson's run parallel for such a distance, yet diverge so utterly at last that a comparison seems to me instructive. The watershed is such a knife-edge that no reader who leans to one side or the other can after this plead ignorance of the motives of his choice.

Bradley's first great act of candor in philosophy was his breaking loose from the Kantian tradition that immediate feeling is all disconnectedness. In his "Logic" as well as in his "Appearance" he insisted that in the flux of feeling we directly encounter reality, and that its form, as thus encountered, is the continuity and wholeness of a transparent much-at-once. This is identically Bergson's doctrine. In affirming the "endosmosis" of adjacent parts of "living" experience, the French writer treats the minimum of feeling as an immediately intuited much-at-once.

The idealist tradition is that feelings, aboriginally discontinuous, are woven into continuity by the various synthetic concepts which the intellect applies. Both Bradley and Bergson contradict this flatly; and although their tactics are so different, their battle is the same. They destroy the notion that conception is essentially a unifying process. For Bergson all concepts are discrete; and though you can get the discrete out of the continuous, out of the discrete you can never construct the continuous again. Concepts, moreover, are static, and can never be adequate substitutes for a perceptual flux of which activity and change are inalienable features. Concepts, says Bergson, make things less, not more, intelligible, when we use them seriously and radically. They serve us practically more than theoretically. Throwing their map of abstract terms and relations round our present experience, they show its bearings and let us plan our way.

Bradley is just as independent of rationalist tradition, and is more thoroughgoing still in his criticism of the conceptual function. When we handle felt realities by our intellect they grow, according to him, less and less comprehensible; activity becomes inconstruable, relation contradictory, change inadmissible, personality unintelligible, time, space, and causation impossible—nothing survives the Bradleyan wreck.

The breach which the two authors make with previous rationalist opinion is complete, and they keep step with each other perfectly up to the point where they diverge. Sense-perception first develops into conception; and then conception, developing its subtler and more contradictory implications, comes to an end of its usefulness for both authors, and runs itself into the ground. Arrived at this conviction, Bergson *drops* conception—which apparently has done us all the good it can do; and, turning back towards perception with its transparent multiplicity-in-union, he takes its data integrally up into philosophy, as a kind of material which nothing else can replace. The fault of our perceptual data, he tells us, is not of nature, but only of extent; and the way to know reality intimately is, according to this philosopher, to sink into those data and get *our sympathetic imagination to enlarge their bounds*. Deep knowledge is not of the conceptually mediated, but of the immediate type. Bergson thus allies himself with old-fashioned empiricism, on the one hand, and with mysticism, on the other. His breach with rationalism could not possibly be more thorough than it is.

Bradley's breach is just as thorough in its first two steps. The form of oneness in the flow of feeling is an attribute of reality which even the absolute must preserve. Concepts are an organ of misunderstanding rather than of understanding; they turn the "reality" which we "encounter" into an "appearance" which we "think." But with all this anti-rationalist *matter*, Bradley is faithful to his anti-empiricist *manner* to the end. Crude unmediated feelings shall never form a part of "truth." "Judgment, on our view," he writes, "transcends and must transcend the immediate unity of feeling upon which it can not cease to depend. Judgment has to qualify the real ideally. . . . This is the fundamental inconsistency of judgment, . . . for ideas can not qualify reality as reality is qualified immediately in feeling. . . . The reality as conditioned in feeling has been in principle abandoned, while other conditions have not been found."¹

Abandoned in "principle," Mr. Bradley says; and, in sooth, nothing but a sort of religious principle against admitting "untransformed" feeling into philosophy would seem to explain his procedure

¹ *Mind*, October, 1909, p. 498.

from here onwards. "At the entrance of philosophy," he says, "there appears to be a point at which the roads divide. By the one way you set out to seek truth in ideas. . . . On this road what is sought is ideas, and nothing else is current. . . . If you enter here you are committed to this principle. . . . [This] whole way doubtless may be delusion; but, if you choose to take this way . . . no possible appeal to designation [*i. e.*, to feeling] in the end is permitted. . . . This I take to be the way of philosophy. . . . It is not the way of life or of common knowledge, and to commit oneself to such a principle may be said to depend upon choice. The way of life starts from and in the end it rests on dependence upon feeling. . . . Outside of philosophy there is no consistent course but to accept the unintelligible. For worse or for better the man who stands on particular feeling must remain outside of philosophy. . . . I recognize that in life and in ordinary knowledge one can never wholly cease to rest on this ground. But how to take over into ultimate theory and to use there this certainty of feeling, *while still leaving that untransformed*, I myself do not know. I admit that philosophy, as I conceive it, is one-sided. I understand the dislike of it and the despair of it while this its defect is not remedied. But to remedy the defect by imparting bodily into philosophy the 'this' and 'thine,' as they are felt, to my mind brings destruction on the spot."²

Mr. Bradley's "principle" seems to be only that of doggedly following a line once entered on to the bitterest of ends. We encounter reality in feeling, and find that when we develop it into ideas it becomes more intelligible in certain definite respects. We then have "truth" instead of reality; which truth, however, pursued beyond a certain practical point, develops into the whole bog of unintelligibilities through which the critical part of "Appearance and Reality" wades. The wise and natural course at this point would seem to be to drop the notion that truth is a *thoroughgoing* improvement on reality, to confess that its value is limited, and to hark back. But there is nothing that Mr. Bradley, religiously loyal to the direction of development once entered upon, will not do sooner than this. Forward, forward, let us range! He makes the desperate transconceptual leap, assumes *beyond* the whole ideal perspective an ultimate "suprarelational" and trans-conceptual reality in which somehow the wholeness and certainty and unity of feeling, which we turned our backs on forever when we committed ourselves to the leading of ideas, are supposed to be resurgent in transfigured form; and shows us as the only authentic object of philosophy, with its "way of ideas," an absolute which "can be" and "must be" and therefore "is." "It *shall* be" is the only candid way of stating its

² *Ibid.*, pp. 500-502.

relation to belief; and Mr. Bradley's statement comes very near to that.

How could the elements of a situation be made more obvious? Or what could bring to a sharper focus the factor of personal choice involved?

The way of philosophy is not the way of life, Mr. Bradley admits, but for the philosopher, he continues, it seems to be *all there is*—which is like saying that the way of starvation is not the way of life, but to the starveling it is all there is. Be it so! Though what *obliges* one to become either such a philosopher or such a starveling does not clearly appear. The only motive I can possibly think of for choosing to be a philosopher on these painful terms is the old and obstinate intellectualist prejudice in favor of universals. They are loftier, nobler, more rational objects than the particulars of sense. In their direction, then, and away from feeling, should a mind conscious of its high vocation always turn its face. Not to enter life is a *higher vocation* than to enter it, on this view.

The motive is pathetically simple, and any one can take it in. On the thin watershed between life and philosophy, Mr. Bradley tumbles to philosophy's call. Down he slides, to the dry valley of "absolute" mere's nests and abstractions, the habitation of the fictitious suprarelativistic being which his will prefers. Never was there such a case of will-to-believe; for Mr. Bradley, unlike other anti-empiricists, deludes himself neither as to feeling nor as to thought: the one reveals for him the inner *nature* of reality perfectly, the other falsifies it utterly as soon as you carry it beyond the first few steps. Yet once committed to the conceptual direction, Mr. Bradley thinks we can't reverse, we can save ourselves only by hoping that the absolute will re-realize unintelligibly and "somehow," the unity, wholeness, certainty, etc., which feeling so immediately and transparently made us acquainted with at first.

Bergson and the empiricists, on the other hand, tumble to life's call, and turn into the valley where the green pastures and the clear waters always were. If in sensible particulars reality reveals the manyness-in-oneness of its constitution in so convincing a way, why then withhold, if you will, the name of "philosophy" from perceptual knowledge, but recognize that perceptual knowledge is at any rate the *only complete kind of knowledge*, and let "philosophy" in Bradley's sense pass for the one-sided affair which he candidly confesses that it is. When the alternative lies between knowing life in its full thickness and activity, as one acquainted with its *me's* and *thee's* and *now's* and *here's*, on the one hand, and knowing a trans-conceptual evaporation like the absolute, on the other, it seems to me that to choose the latter knowledge merely because it has been

named "philosophy" is to be superstitiously loyal to a name. But if names are to be used eulogistically, rather let us give that of philosophy to the fuller kind of knowledge, the kind in which perception and conception mix their lights.

As one who calls himself a radical empiricist, I can find no possible excuse for not inclining towards Bergson's side. He and Bradley together have confirmed my confidence in non-"transmuted" percepts, and have broken my confidence in concepts down. It seems to me that their parallel lines of work have converged to a sharp alternative which now confronts everybody, and in which the reasons for one's choice must plainly appear and be told. Be an empiricist or be a tranconceptualist, whichever you please, but at least say why! I sincerely believe that nothing but inveterate anti-empiricist prejudice accounts for Mr. Bradley's choice; for at the point where he stands in the article I have quoted, I can discover no sensible reason why he should prefer the way he takes. If he should ever take it into his head to *revoke*, and drop into the other valley, it would be a great day for English thought. As Kant is supposed to have extinguished all previous forms of rationalism, so Bergson and Bradley, between them, might lay post-Kantian rationalism permanently underground.

WILLIAM JAMES.

HARVARD UNIVERSITY.

THE DURATION OF ATTENTION, REVERSIBLE PERSPECTIVES, AND THE REFRACTORY PHASE OF THE REFLEX ARC

IT would seem that one of the most assured conclusions of psychological research is about to be surrendered. The doctrine of the intermittent character of attention is proving to be only an "idol of the cave." Recent experiments on touch, electrical stimulation, and vision indicate that there is no fluctuation in the sensation if care is taken to exclude distracting stimuli, movements, twitching, etc.

The weak point in the old experiments, and in some of the new ones, is that only minimal stimuli can be employed—the weakest sounds, pressures, grays, electrical stimulations. Besides, the intensity of these can not always be kept uniform. It is rather curious, therefore, that most, if not nearly all, of the recent discussions of the question have entirely overlooked the contributions which the experimental study of reversible perspective illusions has already yielded, and the effective contributions which their study under improved

experimental conditions promises to yield toward the solution of this question. In these illusions we have stimuli which undergo the same process of fluctuation as pressures, sounds, or brightnesses. But while the fluctuation in the case of the latter is not readily noticed unless the stimuli are so weak as to disappear entirely, or almost entirely, in one phase of the intermittence, with reversible illusions we can work with stimuli of almost any intensity. That the reversions are quite independent of the intensity of the stimulus is a matter of common observation. But it has also been subjected to experimental test. In a series of experiments upon various reversible figures (drawings) it appeared that a maximal intensity is even better than a minimal. Thus a white drawing on a black ground (where accordingly there is a maximal brightness of the lines) is preferred to the opposite arrangement, because the reversions are more clearly and readily perceived.¹ With the drawings placed at three distances from the eye, four, fifteen, and thirty-six inches, the middle distance, corresponding to the normal reading distance, was preferred by most observers, because it yielded clearer and less ambiguous perceptions. The one observer who preferred the greater distance did so for the same reasons. Here, then, intensity of sensation rather furthers than hinders the fluctuation. This would seem to contradict the results of Schröder, Sinsteden, Mohr, and others, who found a certain "unclearness," or "obscuration of details" essential for many reversions. It will be found, however, that this applies to reversions of tridimensional objects in which, if the binocular details were perfectly obvious, no reversions at all would occur.

What, now, are some of the aids and suggestions offered by the study of these illusions to the solution of the question of the intermittence of attention?

If the reversions were due solely to the fluctuation of attention it would seem that the perception of one of the perspectives should be weaker than the other. Specifically, the anomalous or non-predominant perspective (which it is found practically all figures possess) should appear less distinct than the predominant. It should appear somewhat hazy. But experiments show that it comes to consciousness with the same clearness, primacy, coerciveness, and spontaneity as the predominant.² The only blurring observed in my own case was during the moment of reversion. This occasional blurring, which did not affect the clearness of the supervening perspective, would point to some important physiological change as its cause.

¹ Wallin, "Optical Illusions of Reversible Perspective," 1905, pp. 154, 156, 158, 260 f.

² *Op. cit.*, pp. 289, 310.

That this change does not appear to reside in the lens or the ciliary muscle appears from Loeb's and my own experiments upon subjects whose muscles of accommodation had been temporarily paralyzed. On the other hand, numerous experimenters (Sinsteden,¹ Necker, Loeb, Hoppe) have experienced sensations, usually sensations of a sudden movement or twitching, simultaneous with the reversion. In my own case these sensations were quite prominent in reversing a tridimensional loop.³ In another series with skeleton models the sensations were found to differ for the two eyes, and for different fixations.⁴

Moreover, Loeb and Wundt have both observed that eye movements increase the instability of the figure, and I frequently observed that the tendency of a drawing to become flat after being steadily regarded for some time could be largely counteracted by eye movements. Loeb also noticed that when one eye was screened it was seen to move at the moment of reversion. In an experiment with momentary exposures, lasting .03 sec., I had hoped to exclude the movement factor, but it appeared from the introspections that half of the observers were conscious of the fact that the eye swerved or dropped or tended to exploit the figure. Even if these movements or movement tendencies did not occur until after the exposure they would probably exert some influence upon the after-image, and since this behaves like the primary impression, the resulting sensation or perception would necessarily be modified.

If we may assume, as Gordon did, that a more complex figure holds the attention longer, the case for attention is not helped; for in my own series of experiments the simplest drawing reversed the slowest.⁵ It reversed the slowest because it offered less motives for eye movements.

With these presumptions in favor of a peripheral explanation of the fluctuations (as due to instability of the eyes) it would be well if one of our psychological laboratories would attack the problem anew with the greatly improved forms of apparatus which now exist for the accurate recording of eye movements. From such records it should now be possible to ascertain whether eye movements invariably coincide with the period of reversion, or whether they precede or follow it, or occur quite independently of the reversion.

At the same time, it is quite doubtful whether an explanation in terms of eye movements (once they have been indubitably established) will tell the whole story, as indicated by the following considerations.

¹ *Op. cit.*, p. 26.

⁴ *Op. cit.*, pp. 241, 242, 263.

⁵ *Op. cit.*, p. 254.

In another experiment⁶ in which the time of the perspectives in my own case was found to be 1.97 sec. for the non-predominant and 3.30 secs. for the predominant, it appeared that the time of the fluctuations for the reversible illusions corresponded with my efficiency curve, which in turn corresponded with the respiratory and Traube-Hering blood pressure undulations, as measured by Pillsbury.⁷ Likewise Bonser found a similar correspondence by comparing parallel plethysmographic and sphygmographic tracings with the reversions of a pyramid. The crest of the "attention wave," as he viewed it, corresponded with the valleys in the blood pressure curve. So it seems that there is a connection between the fluctuations and the Traube-Hering blood pressure oscillations.

With these facts at my disposal the conclusion followed that the explanation of the so-called fluctuations of attention observed in reversible illusions and other stimuli has a common twofold ground: certain disturbances in the peripheral organ and certain bodily cycles, notably the blood pressure rhythm, possibly the respiratory rhythm, and possibly the cortical cell fluctuations. The fluctuations are thus simply the psychical correlates of bodily processes of fatigue and recuperation. The predominant perspective, which is the most stable and the easiest to envisage, represents the resting or recuperating period.

Latterly it has seemed to me that some of the more recent investigations⁸ in neurology may throw some light upon the problem, especially studies of the reflex arc conduction. The laws which govern the reflex arc will apply, it would appear, to the stimuli under consideration.

In distinction from the nerve trunk, the reflex arc shows a latent time, which, according to Sherrington, has its seat in the gray matter of the synopsis; and a response which is rhythmical in character. The fluctuations vary from 7.5 to 12 per second in the flexion reflex (the rate given by Schäfer is from 10 to 12), irrespective of the nature of the stimulation. The periods are thus fixed within limits. The rhythmical reflexes show periods of excitation and refractory states. These refractory states—periods when the mechanism manifests lessened excitability—are an essential part of most reflexes. They are found in the nerve fibers, once a second, in the flexion reflex of the spinal dog (2.3 per sec.), the cross-stepping reflex in the spinal dog (2.5 per sec.), in the scratch reflex (4.5 per sec.), the

⁶ *Op. cit.*, pp. 245 f.

⁷ Pillsbury, "Attention Waves as a Means of Measuring Fatigue," *American Journal of Psychology*, XIV., 1903, Table IV.

⁸ Admirably summarized in Sherrington, "The Integrative Action of the Nervous System," 1906.

reflex movements of swallowing in the narcotized cat (2 per sec.), and eye reflexes. With the latter it is found that the chances of a stimulus releasing a reflex is 50 per cent. less for one second during the refractory phase than one second later. The refractory phase is longer for visual than tactual and thermal stimuli, and is about the same for weak and strong stimuli (4.5 as against 5.8 per second). It sometimes lasts six times as long as the "period of activity" (Sherrington).

It would thus seem that the fluctuations which we observe in reversible illusions (or with faint gray rings or sounds) are the psychic correlates of the rhythmical and refractory phases of the reflex arc. The fact that the refractory phase differs for visual, tactual, and thermal stimuli accords well with the differences in time which have been found in psychological laboratories on fluctuations for the corresponding stimuli. The fact that there is a variation in the rhythm, or time of the refractory phase, of the reflex arc, within certain limits, accords with similar variations observed in psychological experiments on fluctuations. The fact that the refractory phase, which represents a period of lessened efficiency, a fatigue or recuperative period, is longer (sometimes six times) than the "period of activity," accords well with the measurements of reversible illusions, in which it was found that the one perspective lasted longer than the other, and in which it was inferred that, since it was the normal, predominant perspective which was the most stable, this was a period of recovery.⁹ The fact that the time of the refractory phase is almost constant under weak or strong stimulation finds a parallel in these illusion fluctuations. Furthermore, the refractory phase varies with conditions of fatigue, practise, and the use of certain drugs. Likewise in one series of experiments with skeleton models practise made itself manifest in a shortening of the time needed to reverse of from 25 to 50 per cent., and in a special practise experiment the percentage of successes in the second half was nearly twice that of the first half. Effects of fatigue appeared in another experiment, where the slowing of the reversions in the second half affected especially the predominant perspective, which would correspond with the recuperative or refractory period of the reflex arc.

It would therefore appear that further control experiments on these illusions under conditions of decided general fatigue and under the influence of strychnine (which seems to convert inhibition into excitation, producing quickened reactions, sometimes eventuating in a condition of tetanus) should offer a fruitful method of solving the

⁹ Wallin, *op. cit.*, p. 253.

problem—by some one with the ingenuity to perfect a sufficiently refined experimental procedure.

J. E. WALLACE WALLIN.

CLEVELAND NORMAL TRAINING SCHOOL.

SOCIETIES

THE NINTH ANNUAL MEETING OF THE AMERICAN PHILOSOPHICAL ASSOCIATION

THE Yale sessions of the Association on December 27, 28, and 29 last were more than ordinarily successful from first to last. Though regrets were heard that the philosophers had encamped far from the psychologists in Boston, nobody seemed to take it much to heart, for the attendance was fully up to the normal, if not above it. Considering the inevitable diversity of themes, the papers were admirably grouped, so as to permit those of a session being discussed together; this was particularly true of the second session and somewhat less so of the first. Partly because of this good management by the executive committee and partly by reason of the absence of other distracting scientific meetings, the general interchange of criticism and opinion became conspicuously full and lively; and yet the burden of responsibility for this stimulating outcome lay elsewhere. It was the sharpening of questions and the concentration upon two of these that told most. Of the fourteen papers read on Monday and Tuesday, seven may fairly be described as having focused, more or less clearly, upon methodology, in its widest sense. Three of these seven, three of the remaining other seven and the three leading papers on Wednesday morning pitted realist against idealist in a series of encounters lacking nothing of briskness. Most striking and singular—what, too, must have puzzled the laity who attended the sessions—was the invisibility of pragmatist badges and the almost unbroken silence on those topics pragmatic with which reading-room gossip has identified the new movement. Save in one or two addresses, which were explicitly historical or classificatory, not so much as the name appeared. In reality, though, it had vanished only from the surface of events; its “isms” had evaporated, along with looser first generalities from its nascent stage, but its spirit lived at a deeper level in the arguments of the realists. Their reiterated insistence upon the necessity of facing concrete situations and solving them on the basis of consciously accepted, definite, well-narrowed presuppositions was but the practising, rather than the preaching of pragmatism. This attitude

was particularly vigorous and determined in the discussions about methodology.

Mr. Charles Gray Shaw opened the meeting Monday afternoon with a paper on "Renunciation and the Ethics of Rigorism." Describing eudæmonism and rigorism as the two basic types of instinctive morality in the past history of conduct, Mr. Shaw pointed out the inadequacy of each to explain the facts of behavior; ethics goes on without promise of pleasure or threat of pain, and against each theory violent reactions are repeatedly setting in, according to the times. There is a new tendency to-day to get beyond the old alternative of acquiescence and self-assertion; value and dignity are displacing rectitude and duty as ethical categories. But there is a genuine value in renunciation which must always be reckoned with. In comment Mr. W. H. Sheldon questioned Mr. Shaw's description of renunciation as an instinct, but suggested that courage might be an example supporting that interpretation.

An acute and lively analysis of the American situation, past and present, was Mr. Morris R. Cohen's "The Conception of Philosophy in Recent Discussion." The St. Louis movement marked an era of system-building; its end came with the founding of the *Philosophical Review* which represented criticism in the classic German sense of the term; the third epoch dawned with the JOURNAL OF PHILOSOPHY, PSYCHOLOGY, AND SCIENTIFIC METHODS, standing for the scientific handling of philosophical problems. Mr. Cohen declared this last school has solved no problems, but has only encouraged scientists to encroach upon philosophy. No other thinkers, however, have accomplished much more, because now academic courtesy and now timidity keeps them away from the special sciences. For the sake of culture, which is the supreme need of the American college, philosophers must make bold to sweep through the many fields of research and begin building systems anew. In doing this, they will perforce come to recognize their kinship with the artist and the literary essayist.

"Metaphysical Movements in Science," by Mr. James H. Hyslop, depicted the physicists' struggle toward a clear understanding of matter. The Greeks explained material actions by internal forces and so came to panpsychism. Newton, on the contrary, allowed matter no self-movement, but conceded to it the power of limiting the motion of other matter. Modern physics is now but a step removed from the Hellenic belief; chemistry professes to find compounds which induce actions without entering into the processes of the latter, while it is even claimed in some quarters that all chemisms must be induced by such an external stimulus. Ether is fast being vested with the attributes of orthodoxy's God; already omnipresent

and omnipotent, it may soon be counted omniscient. Contemporary physicists are talking old-school theology in a new speech.

Brother Chrysostom, speaking on "The Mathematical Habit in Philosophy," criticized the great historical exemplars of this attitude; as Descartes and Spinoza, so too Kant was mathematically minded, built on too few postulates, and worked these to the bitter end. These errors of procedure inhere in the mathematical habit, which, therefore, must be condemned for philosophical purposes. Mr. Herbert Martin presented a new way of interpreting the syllogism to students; it was said to prove advantageous in that it spared beginners the trouble of memorizing the traditional valid forms. In objection Mr. Royce declared that Mr. Martin's devices for reduction varied from case to case, so that the old difficulty of learning many applications was only shifted, not removed.

After this paper, the general discussion turned to Mr. Cohen's and Mr. Hyslop's addresses. Touching the former, Mr. Perry granted the propriety of speculation and system building, but insisted that this enterprise be held rigorously apart from scientific method. Mr. Ladd, referring to both papers, declared that there is no breach between science and philosophy.

A very large and alert audience heard the three papers of Tuesday morning, and the debate these aroused was the warmest and most prolonged of the entire meeting.

Mr. E. G. Spaulding set forth "The Logical Structure of Self-refuting Systems." His arguments the ear followed with difficulty because of their extreme condensation and intricacy; their main point was that neither phenomenalism nor absolutism can consistently locate itself in the world as described by itself—or, what is the same thing, either theory nullifies itself as soon as it applies its own conclusions to its own existence or to its own procedures. The development of this point carried Mr. Spaulding through the question about the internality or externality of relations and then through the kindred one about the infinite regress. By eliminating other possible interpretations, Mr. Spaulding reached the conclusion that relations are external to their terms; that the infinite regress can be truly given and conceived, not in a series of mental acts, but all at once by intention; and that only some kind of realism is not a self-refuting system. In the extensive criticism from the floor which ensued, Miss Calkins and Mr. Creighton led the idealists' attack, their most emphatic protest being that Mr. Spaulding had simply defined phenomenalism and absolutism to suit himself and then deduced their own destruction from them; genuine idealism, however, did not correspond at all to the picture Mr. Spaulding drew. Mr. Woodbridge and Mr. Pitkin, from the realistic side, centered

their objections about the speaker's apparent willingness to give relations position in space and so to make entities of them.

Its deductive methods assailed by Mr. Spaulding, idealism next heard its inductive reasoning no less severely arraigned by Mr. Ralph Barton Perry, in his discourse on "The Ego-centric Predicament." Mr. Perry's demonstration that the only inductive method, namely, that of agreement, which the idealist can use at all for his main thesis can not be used so as to prove anything drew fire from more quarters than any other single paper did. That experience determines its objects (symbolically, that $(E)R^c(T)$ defines T) is absolutely beyond proof, inasmuch as every investigation of the matter itself involves the constant presence of the experience-object relation. Mr. Lovejoy said that, however this might be, idealism might still find powerful support in the antinomies of space, especially in the fact that infinity can not be truly given in thought. Mr. Montague cited from Mr. Bradley a misuse of the ego-centric predicament. Mr. Creighton said that, so long as the ego is regarded as an item or a thing in the world, all realistic criticism of idealism misses fire; the ego is not a thing, but a principle. Miss Calkins found peculiar significance in the ubiquity of the subject-object relation; but Mr. Perry, replying, confessed that, to him, ubiquitous characteristics often seem the least important. Further comments, too long to quote here, were made by Mr. Woodbridge, Mr. Aikins, Mr. Hibben, Mr. Hume, and Mr. Pitkin.

Novel analogies were brought to light in Mr. W. E. Hocking's essay on "The Ontological Worth of Ideas and Feelings." Limiting himself to epistemology and to a finite knower, Mr. Hocking compared the independence of an object from thought with the independence of a sovereign from his subjects. The independence of the self is measured by the degree of externality of its objects. Ideas are to sensations as the state is to its natural data, such as its economic circumstances, its customs, institutions, etc. Like the state's laws, ideas confer freedom and individuality upon sensations. Sense *qualia* are nature, while ideas are at once an instrument of the self and of nature. Mr. Hocking developed also an interesting analogy between the tendency toward angularity of form away from roundness in organic evolution and the tendency toward discontinuity in the evolution of knowledge. He conceived sensation as the osmosis between the *Ding an sich* and the *ego*; this, he said, was Kant's own opinion. Idealism has its valid ontological argument; the object of knowledge finds its proof of existence in the very knowledge of it, inasmuch as the object, as idea, is forced upon the knower by nature. Logic itself is nature. Unfortunately, Mr. Hocking's hearers had battled so lustily over the two previous essays that they had no

strength left to discuss him as fully as he deserved. Mr. Urban pointed out the limitations of Mr. Hocking's political analogy.

The afternoon session began with Mr. C. A. Bennett's paper, "In what Sense can an Experience in Time be Timeless?" The speaker described various types of esthetic experience in which the sense of drag, succession, and anticipation goes lost.

Mr. W. P. Montague's "Mind and Life as Forms of Energy" outlined a hypothesis making consciousness potential energy and the *qualia* higher derivatives of the same. Ten analogies between conscious states and potential energy were indicated, among them the following: as potential energy accumulates when a moving body or force is redirected, so too does consciousness occur when the nervous impulse is turned down motor tracts; potential energy is not physically actual, nor is consciousness; neither has position in space; each has intensity; and each displays polarity (*e. g.*, the magnetic or electric positive-negative and the empirical subject-object relation). This hypothesis, if accepted, puts an end to the two great controversies, that between mechanism and vitalism, and that between parallelism and interactionism. Mr. Marvin doubted the wisdom of trying to advance by such analogies; only a physical theory which would clear up some difficulty in psychology, or a psychological theory doing as much for physics would be worth considering. In reply, Mr. Montague said that from the physical equations for potentials Weber's law may be deduced. Mr. Creighton objected to all such speculation on the ground that "potential energy" is a mere conceptual abstraction and so recognized by physicists; it is not a reality in any more than empirical sense. Mr. Woodbridge, on the other hand, was perplexed by the apparent implication that consciousness was somehow equally distributed throughout and between all objects "in" it or contributory to its eventuation, just as magnetic or gravitational stresses and pulls are exerted by all bodies in the system and somehow by the intervening ether.

Similar disapproval was shown toward Mr. Walter B. Pitkin's paper on "The Epistemological Dilemma of Biology in Reference to Space." The contention of this essay was that, in the light of the processes of reflex and voluntary imitation, biologists must accept space as more than empirically real and as the setting in which those problems arise to whose solving all organic evolution is supposed to contribute, provided biology is to use, as its fundamental categories of explanation, "agent," "environment," "adaptation," "selection," "heredity," and the like. Mr. Bakewell pronounced the account Mr. Pitkin gave of the idealistic space theory a caricature. Mr. Perry asked whether the criticisms founded on a study of the imitative reflex held against objective or absolute idealism;

to which the reply was made that, in strict logic, only the more than empirical reality of space was a necessary assumption, if any current biological category of explanation is to be used: whether some types of idealism are compatible with a theory of real space, is a question which may perhaps be answered affirmatively.

"The Generating Problem," the next topic, was handled by Mr. Karl Schmidt along lines continuing the development of his previous studies which look toward the building of "A Philosophical Platform." His endeavor was to depict the facts and doubts out of which philosophical inquiry properly arises.

Some impressive statistics were adduced by Mr. J. G. Hume in his practical address on "The Significance of Suicide," which demonstrated the need of revising the educational program in order to cope with the evil of self-destruction.

Tuesday evening in Lampson Hall, the President of the Association delivered his official address on "The Philosophical Aspects of Evolution." Mr. Hibben came out squarely against the "intellectual mysticism" of James and Bergson. After sketching the evolution of consciousness, the qualitative differences of function that accompany quantitative changes of organic structure, and the enormous gap which must always lie between reasoning mind and the next lower type, Mr. Hibben broached the question whether reason measures up to its self-set task of conceiving clearly the most intimate and elusive processes of life itself. In opposition to Bergson's thesis that change, the continuum and flux of events, can only be appreciated in an intuition higher than conceiving, he protested that ideas are not discontinuous, lifeless things, but rather organic, growing continua which take up fresh particulars indefinitely and transform themselves in adaptation to these latter. Intellect will never be displaced nor fail irretrievably in any problem—of biology or any other science—which can be formulated. A complete mathematical expression of life processes is theoretically possible, and, if never attained, then only because of purely technical or experimental obstacles.

Following this address was a smoker at the Yale Graduates' Club, where most of the philosophers joyfully forgot time, space, the absolute, and other office-hour worries.

Wednesday morning turned out to be a somewhat unpropitious time for the general discussion of time, inasmuch as many members, trying to serve two masters, left for the psychologists' convention before or during the debate. None of the three leading papers there read received fair attention from the floor. Mr. Arthur O. Lovejoy led off with an illuminating analysis of tendencies in Anglo-American philosophy with respect to the problem of time. He found two groups

whose members oppose each other, pair by pair, as follows: rationalism *versus* anti-intellectualism; eternalism *versus* temporalism; idealism *versus* realism; and "this-worldliness" *versus* pragmatic nominalism. The main issue is between eternalism and temporalism. Idealism is the refinement of the naïve man's eternalism, which he derives from the timelessness of truth, as truth. The strong point of radical empiricism is that real time resists conceptualization; while this is no positive disproof of the reality of time, it does argue successfully against intellectualism. Mr. F. J. E. Woodbridge said that the classical opinion about time, as typified by Kant and Royce, is suspected to-day largely because the ego as a world-knower is doubted. The absolutist view is taken from the vantage-point of Newtonian physics, which allowed the space concept to dominate the time concept; whereas now it is to the biologist and his categories of time that we turn for a profounder interpretation. Knowledge is accordingly looked upon as a natural event, with the finding of whose antecedents and consequences one should be wholly concerned. "How can experience give us knowledge of reality?" is an obsolete question, for knowledge has no reference to anything save its own antecedents and consequents, being not at all a representation of nature. Time is, therefore, not a mystery, but a perfectly natural peculiarity, to be naturally investigated. Mr. Josiah Royce, in a delightful anecdote, expressed his general agreement with Bergson and other defenders of real time, but at the same moment his belief that they have only elaborated the obvious and the indisputable. What they have altogether missed is that real novelty, which can never be perceived directly or described, is a supersensuous interpretation based on willed presuppositions about the world. The unique, the truly individual, can never be a datum of sense; hence the time series is a product of will, an artefact for the conceptualizing of reality. In the ensuing discussion of these three papers, Mr. Perry raised the question as to the imperceptibility of duration, and Mr. Lovejoy set forth his difficulties in the matter; but, owing to the dwindling audience and the lack of time for the business meeting of the Association, debate languished, much to the regret of the faithful few who tarried.

WALTER B. PITKIN.

COLUMBIA UNIVERSITY.

REVIEWS AND ABSTRACTS OF LITERATURE

Attention. W. B. PILLSBURY. New York: The Macmillan Co. 1908. Pp. 346.

This book is an extended exposition of the facts bearing on the nature and conditions of attention, its relation to other conscious processes, and of theories concerning it. The intention is not to present new experimental facts or to launch a novel theory but, rather, "to bring together in an orderly way the results of the different researches" and "to harmonize the known facts with one another" (preface). It is, therefore, in no sense pioneer work, but a survey of fields already traveled.

Attention as a conscious state is "an increased clearness and prominence of some one idea, sensation, or object, whether remembered or directly given from the external world, so that for the time it is made to constitute the most important feature of consciousness" (p. 308). The important term here is, of course, "clearness." Regarding its relation to intensity the author says that most authorities regard the effects of attention as different from those of an increased intensity of external stimulation. Structural differences between intensity and clearness it appears, however, difficult to exhibit. But they seem certainly to differ in their effects and, perhaps chiefly, in their conditions. Increase in intensity, for instance, makes discrimination more difficult, increase in clearness easier. Further, concerning conditions, "we might define the intensity as the degree of efficiency of a sensation in consciousness due to the energy expended upon the sense organ, attention as an increase in efficiency due to subjective conditions alone" (p. 9). This means, since clearness is the structural substitute for attention, that the quest for the peculiar conditions that determine the becoming clear of any conscious state must lie among subjective elements alone.

Among conditions, be it specially noted, motor activities do not figure (p. 27). Motor activities, which "succeed, or at most accompany, the attention" (p. 25) are: movements of adaptation of the sense organ; general correlated movements depending on the nature of the stimulus having, however, "no influence upon the efficiency of the attention," but being, nevertheless, "different enough to mark that particular act of the attention off from every other" (p. 18); overflow effects on the voluntary muscles not dependent on the nature of the stimulus and neither useful nor symbolic of the nature of attention (p. 20); and, finally, the movements of respiratory and circulatory processes. That none of these processes, although many of them serve as differential marks for any "particular act of the attention," are listed as conditions is a point to which shall recur later.

The real conditions of attention are classified as subjective and objective. Objective are those that "depend upon the nature of the external world at the time" (p. 27) and subjective, the resultants of "the earlier impressions that the individual has been subjected to, including, of course, the influences that have affected the ancestors and have given the individual in question his hereditary bent" (p. 28). Objective con-

ditions favorable to attention include intensity (chiefly changes in intensity) of sensation, the summation effects of weak stimuli, a rapid rate of change in intensity, greater rather than less extensity of sensation for sight and touch and moderate duration. We must, I take it, reckon with these as conditions only in the sense that they favor the activity of the more weighty subjective conditions, for attention is "an increase in efficiency due to subjective conditions alone." One effective subjective condition is the idea or image in mind just previous to the act of attention; the others are more remote—the general mood of the moment, the general training of the individual, the social forces that have influenced him and his inherited characteristics—both racial and individual. Neither interest nor the feeling of activity is a proper condition of attention, since the former is either a mood accompanying all attention or a general name for the subjective conditions when attributed to the object, and the latter consists of movement sensations.

The pages thus explicitly devoted to an isolation of the subjective conditions of attention—admittedly those alone of vital significance—result, as it seems, in the general statement "that the conditions of the attention are as wide-spread as the conditions of consciousness itself," that, indeed, "every event that has at any time affected the individual in any way is at some time likely to determine in some degree the direction and efficiency of his attention," that, furthermore—to go beyond the individual—"through heredity and social environment everything that has helped to select for survival his ancestors or the race at any time will play some part, great or small, in deciding between the many stimuli offered on any occasion" (p. 52). This view of the conditions of attention receives in nearly every chapter such cumulative emphasis that it finally figures as perhaps the dominating *motif* of the book, although it does not, as may readily be seen, isolate any specific complex of processes as conditions of the clarifying and selective essence of attention apart from those of the rest of consciousness.

Under the caption, "The Effects of Attention in Consciousness," Pillsbury reviews investigations on the number of separate objects that can be attended to, on the duration of a single act of the attention, and on fluctuation. For a theory of fluctuation he is inclined to favor an hypothesis of central rather than peripheral processes, involving a fatigue of sensory cells, of reinforcing cells (corresponding, for instance, to the ideas that precede changes in the interpretation of ambiguous geometrical figures) and including, finally, the physiological rhythms originating in the circulatory and respiratory centers in the medulla.

We come next to methods of measuring the attention. Measures of attention are divided into three groups: direct, the measuring of accomplishments in some allotted task (discrimination of two points on the skin, reaction times, marking letters of one kind on a page, etc.); indirect, through fluctuation or through the mean variation in a series of measurements; and by the amount of stimulus necessary for distraction. None of these, however, appears to give a univocal test of attentive capacity. They are open chiefly to two objections—that some special

facility acquired through training, rather than attention, is involved, and that the test may be in part dependent on other capacities—acuteness of the sense organ, retentiveness, etc. Certain tests are, therefore, suggested which, the author thinks, it would be well to try (p. 92). The difficulties mentioned, however, appear to be inherent, since attention “is a word that covers so many different processes that no single test will probably ever be devised that shall measure all the part processes satisfactorily” (p. 91).

The discussion up to this point (pp. 1-93) might be taken as one logical division of the book. It attempts, essentially, to analyze the nature and the conditions of attention. The next seven chapters (pp. 94-218)—more than a third of the book—are different, the analysis being, not of the attentive process itself, but, rather, of the rest of consciousness. The motives of this analysis are two: first, to state the author's own doctrine of ideas, perception, memory, will, reason, feeling, and the self (to each of which subjects a chapter is given), and, secondly, to canvass these various processes in an attempt to show just where and how attention functions in each one. It is really an examination of the field of psychology with the emphasis on the functional significance of attention. Since nothing new is added to the previous analysis of the attention process itself; since, further, the author reduces, in each chapter, the conditions that determine the particular mental capacity under discussion to the conditions that he had before enumerated as determining attention, we may pass over these chapters briefly. The conclusion, in any one chapter, may be substituted, with appropriate variations, for that of another. A few quotations will show this: “We find that they too (ideas) are subject to the control of the same factors which we found to be active in the control of sensorial attention”—the ideas in mind, the general attitude of the hour, etc. (p. 112). “The conditions of attention are at the same time the conditions of reason. One involves the other and can not be separated from it” (p. 182). “Taken together, the self and attention are so closely related as to be scarcely distinguishable. Conditions of attention and what we know as the self are for practical purposes identical” (p. 217).

The attempt in these chapters, it is clear, is to identify so far as possible the conditions of attention with those of other conscious processes. The identity can not, however—if the term “attention” is to retain significance—be complete, and it would have been more fruitful, the reviewer thinks, if the emphasis had been laid rather on the respects in which they are not identical. Such an emphasis might have helped towards an isolation of the differential conditions of attention, an isolation not attained in the discussion specifically devoted to conditions. As it is, one feels that little of importance is done in reiterating the identity of the conditions of all conscious processes. We are primarily interested in *differentiæ*; if investigation has not yet disengaged those of attention it would seem that the discussion of it, particularly of its functional relations, could be compassed in small space.

Following the excursus on the functions of the attention we find, in

the closing chapters of the book, a return to what might be called the main theme—the analysis of the attention process itself—in a series of discussions of theory. Only two of these chapters (“Attention in Pathology and in Development” and “Applications to Education”) form exceptions to this statement. At the outset of his theoretical discussions the author states and accepts the doctrine of psychophysical parallelism. A consideration of the structure and functions of the nervous system—following, so far as the cortex is concerned, Flechsig’s view of the functions of the association areas—then leads him to conclude that “the anatomical seat of attention is apparently the frontal lobes” (p. 235). More important, however, than any attempt to assign to attention a local habitation, is the discussion of the physiological basis of the attention. To this chapter, since it reveals, at least to the reviewer, the author’s fundamental position more clearly than any of the other discussions, our further remarks will be given. The other theoretical chapters are devoted to apperception in relation to attention, and to a history and critique of psychological theories.

The problem is, of course: What physiological processes are involved in the selecting and clarifying of one mental content at the expense of others? Such a process must be due, as many authors have shown, to reinforcement (or facilitation), to inhibition, or to both. The author includes both. An examination of certain phenomena of reinforcement and inhibition enables him to conclude that any cell, sensory or motor, will, by its mere activity, increase or decrease the activity, or tendency thereto, of any other cell, sensory or motor, however separated, however devious, apparently, the connection between them may be (pp. 240, 248). There is, namely, exhaustive reciprocal inhibition and reinforcement among all sensory and motor cells. One sees, thus, an ample mechanism in the nervous system for reinforcement and inhibition. The intimate character of either of these processes is not discussed; certain phenomena are exhibited, merely, which are interpreted as demonstrating the existence of the neural mechanism.

Any cell may, then, indifferently reinforce or inhibit any other cell. As for the *differential process*, that would account for the reinforcement or inhibition of any particular group of cells—for the clarifying or selecting of any particular conscious content—we find the following statements: “If every sensation has an influence upon every other sensation, it would only be natural to suppose that it would have a more marked influence upon the related sensations than upon those which are entirely foreign” (p. 250). “Earlier experiences,” furthermore, “tend to organize the cells affected into groups, and so to determine the paths along which any reinforcement from a given stimulus will extend” (p. 252). These *organized groups* are “systems which are closely related on the nervous side to what Stout calls apperceptive systems on the mental side” and, “when any general or specific stimulus arouses one part of the system the other parts are thrown into a state of greater or less activity” (p. 255). It would appear, therefore, by applying these principles appropriately, that a perception or idea is reinforced by the presence of a related idea, a

related mood, related past experience, related social experience, etc. In a word, the various subjective conditions of attention and, it may be added, of other conscious processes as well, are, thus, brought within the physiological theory.

Now of what constituent elements are these neural *systems* or *organizations*, of which the author speaks, composed? This is a most vital problem, for one's answer to it must inevitably determine one's main procedure in matters psychological. The author's presuppositions concerning the physiological nature of such organizations are unmistakable, both from explicit statement and from implicit emphasis. "Each system . . . is made up of a certain number of sensory cells together with the associatory cells of the frontal lobes" (p. 256). And, although at the beginning of the chapter reinforcement and inhibition were said also to obtain reciprocally between motor and motor and between sensory and motor cells, one finds, as the discussion progresses, that the interrelations of sensory cells, sensory areas, and sensory systems, figure more and more exclusively as the physiological basis of attention. Throughout the book, indeed, one is struck with the permeating emphasis on the sensory, or impression, aspect of experience. The reactive aspect is almost wholly neglected. Motor processes do not, as we have seen, figure as conditions of attention. Sensory impressions appear, furthermore, to persist *unaltered* throughout one's experience instead, for instance, of fusing and losing their identity in neural organizations that result in turn from unitary adaptive reactions (see, particularly, chapters VII. and VIII.). Everywhere one is impressed with the implicitly axiomatic attitude that experience consists only of impressions, revivals of impressions, and interrelations of impressions. This, one may think, might with fairness be called an example of the sensation bias in psychology.

Although, in short, the book sincerely aims to be a representative account of the various views that are held about attention, it shows no trace of the fundamental thought, however different the specific theories, underlying the work of Dewey, Baldwin, Münsterberg, W. MacDougall, or Judd. This fundamental thought is that not impression only, but reaction as well, must be included in any adequate account of consciousness; that not merely the afferent nervous system, but likewise the efferent, is involved, and is involved directly, not simply indirectly, through the motor *sensations* which the reactions arouse. Is it not probable, since an organism's chief concern is selective adaptation to an environment, that its reactions, or the *neural organizations that represent them*, are among the physiological determinants of its experience? Is it not possible, for instance, when eye movements appear to determine which of two competing colors in retinal rivalry shall persist in consciousness, that it is not a case of reinforcement or inhibition of one *sensory* center by another (p. 246), but an inhibition of one adaptive response by another? that, in general, so-called sensory reinforcement or inhibition is between reactions (or the totality of cortical organizations underlying them) and not between sensory organizations direct? It seems, further, quite appropriate to think, if an "object" is chiefly determined in consciousness by the

use to which it is put (p. 66), that such "use" means one's selective system of reactions towards it, and that, when the *total* nervous organization corresponding to such reactions is aroused, we have a perception or an image of the object. This implies, of course, that no mere organization of sensory systems is adequate. Is it not, finally, a suggestive view which regards our discriminative reactions on our environment as the *selective* mechanism in experience and that it is the rearousal of cortical organizations at the basis of these reactions, rather than sensory organizations merely, that determines whether or no an object shall engage attention, whether or no, consequently, it shall become "clear" in consciousness? According to such a view the author's subjective conditions of attention (idea in mind, mood of the moment, whole past experience, etc.) would reduce to systems of individual selective habits of reaction, or corresponding mental attitudes, each with its correlate of definitely organized cortical processes.

These few suggestions are meant merely to remind any who needs reminding that the motor interpretation in psychology is still active; they are also symptomatic of the lively surprise that many have felt on finding in the present work, which sincerely, and in certain directions successfully, seeks to give an adequate résumé of representative facts and theories, no indication that the force of the underlying thought of a growing group of workers had been at all felt.

ROSWELL P. ANGIER.

YALE UNIVERSITY.

Social Organization: A Study of the Larger Mind. CHARLES HORTON COOLEY. New York: Charles Scribner's Sons. 1909. Pp. xvii + 426.

Social psychology, like its cognate sister sociology, is still in a formative state. It is, nevertheless, works of the merit of Professor Cooley's "Social Organization" that will hasten its recognition as one of the accepted psychological disciplines.

In a previous book on "Human Nature and Social Order" Professor Cooley presented society as it exists in the social nature of man; in the present volume, on the other hand, he conceives life as one human whole, and approaches it from the mental rather than from the material side. "If we cut it up," he says in his preface, "it dies in the process; and so I conceive that the various branches of research that deal with this whole are properly distinguished by change in the point of sight rather than by any division in the thing seen." Hence, the view-point of the author in the book before us is focused on the enlargement and the diversification of intercourse.

Mind, as defined by Professor Cooley, is an organic whole made up of cooperating individualities, in somewhat the same way that the music of an orchestra is made up of divergent but related sounds; so, in the study of the social mind, he fixes his attention on the larger relations of mental experience.

The unity of the social mind he holds consists not in agreement, but in organization, "in the fact of reciprocal influence or causation among

its parts, by virtue of which everything that takes place in it is connected with everything else, and so is an outcome of the whole." This differentiated unity of mental and social life is what he characterizes as social organization.

Professor Cooley's method of approach is what he calls sympathetic introspection, in which the student puts himself into intimate contact with various sorts of persons and allows them to awake in himself a life similar to their own, "which he afterwards, to the best of his ability, recalls and describes."

The primary aspects of social organization, including social and individual aspects of mind, primary groups and ideals, and the extension of the latter, are treated in Part I.; communication, its growth and enlargement, and its relation to individuality, superficiality, and strain, is the central theme of Part II.; democracy, the enlargement of consciousness, theories of public opinion, crowd excitement, and the trend of sentiment are discussed with marked clearness in Part III.; the social classes, hereditary and caste principles, the growth and outlook of caste, the open classes, and the ascendancy of wealth and a capitalistic class are judiciously treated in Part IV.; Part V. deals with institutions in relation to the individual, the family, the church, education, fine arts, and economic conditions; and Part VI. discusses the public will in relation to government and the extension of state functions.

This topical summary will give the reader a notion of the wide scope of this altogether able treatment of social organization in relation to the larger mind. It may be added in closing that the book is a notable contribution to the new and growing science of social psychology and that it is certain to be welcomed by students of education and the philosophical disciplines, as well as by the larger public interested in problems of social welfare, philanthropy, and government.

WILL S. MONROE.

MONTCLAIR (NEW JERSEY) NORMAL SCHOOL.

Education Through Music. CHARLES HUBERT FARNSWORTH. New York: American Book Co. 1909. Pp. 208.

Both by the soundness of its general principles and by the careful and always practical working out of its details in relation to the successive years of music work in schools Professor Farnsworth's book is an admirable guide for teachers, and should exert a wide and wholesome influence on our school music-teaching.

The first five chapters concern themselves with the fundamental principles. Thus chapter I. insists that experience must always precede formal instruction; where it is lacking it must be supplied by the teacher, and in all cases it must be her aim to organize it in such a way that all particular facts may be seen by the pupils in their relation to broad musical effects. In chapter II. the relations of interpretation and structure are first made plain, and then these are analyzed into seven constituents, viz.: interpretation into (1) quality of tone, (2) quantity of tone, (3) rate of movement, and (4) articulation; and structure into (1) pulsation, (2)

duration, and (3) pitch. The next two chapters are devoted to a more minute discussion of interpretation and structure respectively, and contain much admirably enlightening matter. The fifth chapter shows in a general way how all musical ideas are to be developed by experience, in the natural sequence of observing, acting, picturing, and writing the symbols.

On this foundation the rest of the book builds, discussing in regular order the work to be taken up in each of the eight school years. This part of the discussion is too detailed to summarize. Suffice it to say that the methods for making real to the child such subtle matters as the ratio of tone durations to metrical pulse, the characteristics of the seven scale-steps, the nature of harmony, and the complex ways in which repetition is used as the basis of musical design are at once ingenious and simple, and the basic rule of having all effects observed before they are described is never lost sight of.

One adverse criticism suggests itself. Although the point is well made (see pages 16 and 22) that "while at first thought music seems to appeal directly to the feelings, it really does not do so, but reaches the feelings through ideas which deal with definite forms"—a point, by the way, which needs constant emphasis in view of the wide-spread tendency to narrow music down to a mere "language of the emotions"—the author, when he comes to close quarters with these definite forms, as for instance at page 24, seems to fall somewhat into the very fallacy he has been deprecating, identifying the musical idea too much with the literary idea with which it is associated. ("A wise teacher will lead the pupil to conceive first what the music means as a whole. Is it a brisk winter song, or does it regret the passing of the flowers?", etc.) On the whole, however, the untranslatability of music, its uniqueness in our mental experience, is well apprehended.

Not the least interesting chapter in Professor Farnsworth's thoughtful book is the concluding one on "The Broad and the Narrow View of Education in Relation to Music." One wishes that all school principals and all parents might read it.

DANIEL GREGORY MASON.

COLUMBIA UNIVERSITY.

JOURNALS AND NEW BOOKS

THE PSYCHOLOGICAL REVIEW. November, 1909. *Some Experiments on the Color Perceptions of an Infant and their Interpretation* (pp. 363-376): HELEN THOMPSON WOOLLEY. — Baldwin's method used with a child throughout its seventh month showed the perception of red, blue, and yellow as colors. Preference for red and indifference to green were striking. After the seventh month interest shifted from relatively passive sense impressions, such as color perception, to the more active aspect of manipulative experience. Other descriptive adjectives are understood before those of color because of their superior practical import in the

child's experience. *On Ocular Nystagmus and the Localization of Sensory Data during Dizziness* (pp. 377-398): EDWIN B. HOLT. - Question: What organs yield the sensation of rotation? Answer: This is not a sensation in the ordinary meaning of that word, but the process most nearly parallel to the feeling of rotation is one kind of innervation process. A two-page bibliography accompanies. *Mental Diagnosis by the Association Reaction Method* (pp. 399-409): FREDERICK G. HENKE and MILTON W. EDDY. - A series of experiments from which it is concluded (1) that correct diagnosis by this method is reasonably certain in simple cases; (2) in such cases, impartial observers, *e. g.*, an American jury, could draw right conclusions; (3) the subject's knowledge of the method does not prevent a correct diagnosis; (4) the situation may be so complicated as to render diagnosis impossible. *Binocular Rivalry* (410-415): B. B. BREESE. - A series of experiments giving (1) the effect of variation in the size of the stimuli; (2) the effect of distinctness of the images upon rivalry; (3) peripheral rivalry. *Minor Studies from the Psychological Laboratory of Wellesley College: communicated by* ELEANOR A. MCC. GAMBLE. I. *Intensity as a Criterion in estimating the Distance of Sounds* (416-426): ELEANOR A. MCC. GAMBLE. - There is found considerable evidence for, and little or no evidence against, the ordinary belief that intensity is the main factor in estimating the distance of sound. II. *The Perception of the Distance of Sounds* (427-430): DANIEL STARCH. - The least perceptible difference in distances is 15 cm. for sounds a meter away. Accuracy is the same for all directions tested. Introspections in 5,200 cases indicate as bases of judging differences in intensity, in pitch, and in quality, by far the most important being intensity. *Discussion: Darwinism and Logic: A Reply to Professor Creighton.* J. MARK BALDWIN (431-436). - Mechanism and teleology are naturalistic or empirical categories, both valid, but both restricted, in their proper use, and both superseded in a hyperlogical mode of experience.

ARCHIV FÜR GESCHICHTE DER PHILOSOPHIE. Band XIV., Heft 1. October, 1909. *Sur la conception Aristotélicienne de la causalité* (pp. 1-28): L. ROBIN. - An explanation of Aristotle's assimilation of causal to syllogistic necessity, in spite of his recognition that we may often know the fact without knowing the cause of the fact. To be continued. *Über die Platonischen Briefe* (pp. 29-52): R. ADAM. - A defense of the authenticity of the seventh letter, and perhaps the thirteenth, with rejection of the second, third, and eighth, and doubt concerning other letters. *Plato als politisch-pedagogischer Denker* (pp. 53-88): R. STUBE. - Plato is to be considered as the prophet of European culture, because he looked upon the State as the instrument of an education for life eternal. *Ein Beitrag zu Heracleits Fr. 67 und 4a* (pp. 88-91): E. LOEW. - *Democrit und Platon* (pp. 92-105): I. H. JENSEN. - Plato does not ignore or supplant the teaching of the atomists, but subordinates that teaching to a teleology, which is based upon a new theory of knowledge. *Der Geist Hegels in Italien* (pp. 106-116): C. D. PFLAUM. - Benedetto Croce's interpretation of Hegel to Italy. Marx's Hegelian influence on

the mass of Italians. *Spinozas Bildnis* (pp. 116-140): A. LEVY. - The authenticity of the newly discovered portrait is disputed especially on the ground of the proportions of nose and lips, and the character of the hair. *Die neuesten Erscheinungen. Historische Abhandlungen. Eingengene Bücher.*

REVUE DE METAPHYSIQUE ET DE MORALE. September, 1909. *L'orientation de la pensée philosophique de David Hume* (pp. 596-619): L. LÉVY-BRUHL. - The work of Hume is that of a geographer. Any attempt at a further explanation of experience would have been felt by him as an attempt to solve the unsolvable. *Les théories logico-métaphysiques de MM. B. Russell et G. E. Moore* (pp. 620-653): H. DUFUMIER. - A systematic presentation of Mr. Russell's general conception of logic and its relations to neo-realism. *Sur le pragmatisme de Nietzsche (suite et fin)* (pp. 654-702): R. BERTHELOT. - Discusses the question of the usefulness of Nietzsche's theoretic and moral philosophy. *Études critiques. Les études de M. Delacroix sur le mysticisme*: H. NORERO. *Supplément.*

Crawley, A. E. *The Idea of the Soul*. London: Adam and Charles Black. 1909. Pp. viii + 307.

Heck, W. H. *Mental Discipline and Educational Values*. New York: John Lane Company. 1909. Pp. 147.

Hoffman, Georg. *Die Lehre von der Fides Implicata*. Band III. Leipzig: J. C. Hinrichssche. 1909. Pp. 536.

O'Sullivan, J. M. *Old Criticisms and New Pragmatism*. London, New York, Bombay, and Calcutta: Longmans, Green, & Co. 1909. Pp. xiii + 317.

Remacle, Georges. *La philosophie de S. S. Laurie*. Bruxelles: Henri Lamertin and M. Weissenbauch. 1909. Pp. xxxii + 521. 7 fr. 50 c.

Sawicki, Franz. *Das Problem der Persönlichkeit und des Uebermenschen*. Paderborn: Ferdinand Schöningh. Pp. viii + 446.

Schulze, Rudolf. *Aus der Werkstatt der experimentellen Psychologie und Pädagogik*. Leipzig: R. Voigtländers Verlag. 1909. Pp. x + 202.

Smith, Eugene Randolph. *Plane Geometry Developed by the Syllabus Method*. New York, Cincinnati, Chicago: American Book Co. 1909. Pp. 128. \$0.75.

Tocco, Felice. *Studi Kantiani*. Milano, Palermo, Napoli: Remo Sandron. 1909. Pp. xix + 271. L.7.50.

Von Uexküll, J. *Umwelt und Innenwelt der Tiere*. Berlin: Julius Springer. 1909. Pp. 259.

Ziegler, Th. *Geschichte der Pädagogik*. Munich: C. H. Beck'sche Verlagsbuchhandlung. 1909. Pp. x + 416.

NOTES AND NEWS

THE number of students at Russian universities during the year 1908-1909 reached the figure 76,900. This number is exclusive of those in the many private higher colleges in the various towns in Russia, which is estimated roughly at about 20,000. The 76,900 students at the universities are distributed as follows: at St. Petersburg in the various department, 28,550; at Moscow, 13,250; at Kharkov, 7,000; at Kiev, 5,900; at Kazan, 3,600; at Tomsk, in the University and the Technological Institute, 2,700; at Warsaw, in the University and the Polytechnic Institute, 1,500; at Odessa University, 3,300; at the Novocherkask Polytechnic Institute, 700; at Helsingfors, in the University and the Technical College, 2,750; at the Riga Polytechnicum, 1,700; at Yuryev, at the University and the Veterinary Institute, 3,350; at the Novaya Alexandria Agricultural Institute, 400; at the Yavoslavl Lyceum, 1,050; at the Yekaterinoslava Mining Institute, 500; at the Néžin Philological Institute, 150; at the Saratov University, established this year, 200; at the Vladivostok Institute of Oriental Languages, 300. It was noted in the "Notes and News" of this JOURNAL for August 19 that the foreign students in German universities for the last academic year numbered 3,594. Of this number, 1,578 were Russians. These facts have, it is believed, bearing on an interest in the present educational opportunities and development of Russia.

THE following abstract of a paper on "The Subject-Matter of Psychology" was read by Mr. G. E. Moore before the Aristotelian Society on December 6. "When anything is said to be 'mental,' one or other of five different things may be meant, viz. (1) that it is an act of consciousness; (2) that it is a quality of an act of consciousness; (3) that, though not an act of consciousness, it is related to some mind in precisely the same way in which a person's acts of consciousness are related to mind; (4) that it is a collection of things which are mental in senses (1) or (3), or both; (5) that it is a subject of acts of consciousness, different from any single act or collection of acts. It was contended that some things certainly are 'mental' in senses (1), (2), and (4); but that it is doubtful whether anything is so in senses (3) and (5). Of sense-data it was contended that they are not mental in any of these five senses, even though it may be true of them that they exist only at moments when some one is conscious of them." (*The Athenæum*, Dec. 25.)

THE *British Medical Journal* announces that the Pasteur Institute of Paris will soon receive the capital sum of 30,000,000 francs, the product of the estate of the late M. Osiris. In 1903 M. Osiris founded a triennial prize of £4,000 to be given to "the person who had rendered the greatest service to the human race during the three preceding years." The prize was awarded to Dr. Roux, director of the Pasteur Institute, for the discovery of the anti-diphtheria serum. Dr. Roux, instead of using the sum for his own interests and purposes, gave over the money to the Pasteur Institute. This act, it is rumored, so impressed M. Osiris that he left the bulk of his fortune to the Institute as token of his admiration for the achievements and the generous spirit of Dr. Roux.

At the fifth annual meeting of the Southern Society for Philosophy and Psychology, held at Charlotte, North Carolina, December 23, 1909, the following officers for the year 1910 were elected: President, Edward Franklin Buchner, Johns Hopkins University; vice-president, Shepherd Ivory Franz, George Washington University; secretary-treasurer, Robert Morris Ogden, University of Tennessee. A. Caswell Ellis, University of Texas, and David Spence Hill, Peabody College for Teachers, were elected members of the council to serve two years, and Bruce R. Payne, University of Virginia, and Haywood J. Pearce, Brenau College, to serve three years.

It is stated in *Nature* that the inaugural meeting of the China Philosophical Society as held at Tientsin on September 18 under the presidency of the president of the Pei Yang University, Mr. Wang Shoh Lian. Mr. Lian, in his presidential address, pointed out the importance of the existence of such a society in the present stage of China's development, when western learning is being spread over the empire. Papers were also read by Dr. G. Purves Smith on agricultural possibilities of north China, and by Dr. Wu Lien Teh on an example of scientific farming in Chili.

W. DAWSON JOHNSTON, librarian of Columbia University, is preparing for the United States Bureau of Education a report on special collections in libraries of the United States. It is planned to make the publication a record of all collections in public libraries which are of special value, either because of their completeness or because of the rarity of their contents. In order to collect the material for this report the Bureau of Education is sending circulars to all libraries which are thought to possess such collections.

A NEW edition is offered by the Macmillan Company of Edward Caird's "Essays on Literature," which first appeared as a collection in 1892. Of special interest is the essay entitled "The Problem of Philosophy at the Present Time," which compares the reconciliation between religion and sophistry attempted by Plato and Aristotle, with the reconciliation between religion and science needed in 1881, when this lecture of Caird's was first delivered.

THE American Psychological Association has elected the following new officers for the ensuing year: President, Professor Walter B. Pillsbury, of the University of Michigan; members of the Council to serve three years, Professor Ernest H. Lindley, of Indiana University, and Professor Robert M. Yerkes, of Harvard University. Professor A. H. Pierce, of Smith College, was elected secretary-treasurer of the Association.

THE chair of experimental biology at the University of Budapest has been offered by the medical faculty of that University to Professor Jacques Loeb, of the University of California. Professor Loeb lectured last September before the International Congress at Budapest and also delivered a course of lectures in June at the University of Budapest.

AN international subscription is being organized for the purpose of erecting a statue of Lombroso in the city of Verona.

THE JOURNAL OF PHILOSOPHY

PSYCHOLOGY AND SCIENTIFIC METHODS

NOTES ON THE DISCERNMENT OF LIKENESS AND OF UNLIKENESS

THIS research aimed to help the analysis of the mental process by which we become aware of similarity and of dissimilarity. Its method is experimental and it reports the simplified laboratory-judgments as to the likeness and unlikeness experienced in the case of a series of visual forms. The experiments of the work were performed in the psychological laboratories of Columbia and of Harvard universities. The simple-enough apparatus employed consisted of the blots of ink introduced into experimental psychology by the writer and described in the *Psychological Review* of July, 1897. From about five hundred of these largely chance ink-blots made on paper 4 cm. square and mounted on thick pasteboard of like size, one hundred were taken as they chanced to lie in a box, that is, quite at random. The backs of the blot-cards were numbered consecutively from one to one hundred for ready identification. Besides these, four other ink-blots were selected to constitute the norms with which the others were to be compared as to their respective likeness or unlikeness. A wire frame to hold fixed the norm-blot convenient to the subject's vision and a table on which the century of blot-cards could be arranged ten-square in numerical order completed the apparatus employed.

The subjects employed in this research were twenty in number; two were philosophical professors, one an instructor, and two assistants in psychology, while the rest, with one exception, were students in the two laboratories where the experiments were performed, the exception noted being a college graduate. The subjects were all males ranging in age between twenty and forty-three. The chief interest and work of one of the subjects lay in the art of music—a circumstance whose influence will be noted later on. The interests of the others were certainly sufficiently varied to prevent the occurrence of bias in any direction in their subjective reports, no one avowing or evincing any particular prejudice as regards the nature

of the processes under inquiry. All the subjects employed were sufficiently familiar with psychological analysis to afford both their introspection and their subjective reports the requisite accuracy. Here, as nearly always, however, the chief stress was laid on actual reactions rather than on more or less uncertain and ambiguous mental images and ideas, on the principle that bodily reactions express better than other means, even to the subject himself, his real meaning and intention—a fact too often overlooked, perhaps, in the laboratory of psychology.

The method of experimentation in detail was simply as follows: The hundred blot-cards being placed in order ten-square on the table before the seated subject and the norm in its frame conveniently before his eyes and above the blots, he proceeded to select within fifteen minutes the ten blot-cards out of the hundred most similar in form or shape to the norm, and to place them one side arranged carefully and deliberately in the order of their judged similarity to the norm. Meanwhile the subject reported how he apperceived the norm and what he considered its most essential form—characteristics and peculiarities. These subjective notes were recorded and the numbers of the ten blots judged most like the norm, and in their chosen order. The time required for a selection satisfactory to the subject was also recorded, and at the end of the selection the reason why each of the ten had been preferred, concisely as possible. The process in the case of judgments as to unlikeness was precisely the same, with the appropriate change in intention to keep dissimilarity instead of similarity in mind. The subject was not allowed to turn any blot-card about or to observe the characters from more than one view-point, that, namely, directly in front, but no objection was made to orientation in imagination if the subject seemed impelled to so vary its meaning to himself. This was allowed for the sufficient reason that with characters so full of suggestive meaning as are many blots of ink it is impossible to prevent their adjustments in imagination without disturbing deeply the judging and selecting process. On this matter of position lay one of the interests of the experiments, for, in the complexity of psychic association, to turn a blot a few circular degrees is often to make it seem an entirely different object with quite different meaning for a particular percipient.

Altogether, about nine hundred judgments were recorded and explained, the details of these explanations from introspection on a basis of precise objective stimulus constituting an interesting study in themselves, which here we shall not touch upon. We shall be content to indicate the general nature of the judgments as a whole and the principles of likeness and unlikeness which these judgments,

so far as they go, empirically demonstrate in the range of the experiments.

The nature of the apparatus employed is obviously such that statistical results are for the most part of little use and photographic reports of the judgments made would have to be so numerous as to be impracticable. Careful and extended study and comparison of the sets of blots selected by the various subjects, however, brings out several striking facts as to the mental process concerned, the most interesting of which are as follows:

The average size of these visual objects was such that ocular contour-movements probably were not much concerned in perceiving them. The projections, to be sure, tend after a while to be counted in an indefinite sort of way and their general shapes and directions noted. The blots are, however, too small to need outlining and are at once apprehended as units, just as are long words familiar to us. Be that as it may, the most conspicuous criterion of likeness and of unlikeness alike in these selections was what we may call relative massiveness. If the norm-blot happened to be noted as massive or as attenuated or as a mixture of these two, selection was made accordingly. This appears continually in the results of the experiments. This difference was noted immediately in practically all the cases where animal associations did not occur, thus crowding it out. It implies, apparently, a fundamental criterion in comparison-judgments of form and gets its bodily basis in the relative number of retinal local signs bunched in the perception, rather than in ocular contour-movements. This is apparently the most conspicuous of the sorts of "change of consciousness" which underlie our apprehension of likeness and unlikeness.

Another result of these judgments appears to be our excessive dependence on language-concepts for a clear awareness even of pure form. In almost every case the choices had their criteria of sameness or of difference sharply defined in words, expressed or not, of the subject. However pragmatic in their life-philosophy, all these subjects save one were obviously strong conceptualists. They made no progress in characterizing the norm-blot to themselves until words had arisen in their minds to make its character or characters definite and sharp. The sensational basis of the apperceiving process (a mass of retinal local signs plus a tendency to contour-movements) by itself led to no clear apperception of the blots. Whatever the confused experiences might be on perception of the blots, there was no clear notion of likeness or of unlikeness, no decided change in consciousness, until ideation had had its say. This would probably not be looked for in a set of subjects outside of college influence, where ideation is taught too often as the end-all and the be-all here.

Indeed, the only subject who claimed to have a true *feeling* of likeness and of unlikeness was a student of music, naïve enough as a student of psychology. He, too, had the concepts associated with the respective blots, but he avowed a distinct feeling of similarity and of dissimilarity which persisted. It needs only a glance at the sets of blots chosen by him and compared with those of others to show that his choices were by far the most satisfactory of all the subjects' sets. The explanation is not afar off: Even these simple bluish-black forms in only two dimensions have so many characters that to specify one, or two, or three, and compare them by these leads to imperfect and misleading results. On the other hand, the "feeling" of likeness or of unlikeness implies a much wider acquaintance with the blots and is, therefore, the basis of a better comparison. Related here is obviously an important educational principle which he who runs may read.

These experiments, again, illustrate the high stage which symbolism has reached in our social mental process. In nearly every case the subject found difficulty in inhibiting the reproductive imagination of animals, starting from the norm and extending to the blots chosen as like or unlike it. This process was interesting, but, being foreign to the topic in hand, was excluded because it led to comparisons obviously artificial. It was, however, often only with difficulty that most of the subjects could be induced to perceive the characters as mere chance-blots of ink, as masses of black color filling in an absolutely meaningless outline on a bit of white paper. If this inhibition were not insisted on (as at first it was not) the subject compared imagined animals rather than blots. One man, for example, promptly said the norm was a bird and thereupon chose ten "birds" flying, standing, roosting, swimming, swans and eagles, storks and humming-birds. However, it was not difficult for the subjects to overcome this symbolic menagerie-habit, so to say, and to use other criteria than those suggested by the associative imagination.

The two preceding results from these simple experiments (namely, the highly conceptual, and highly symbolic, characters of the class of perceptions here concerned) lead to suggestions as to the subjectivity of likeness as a mental fact. One thinks of Bradley's surprising collection of "objects that do not exist" when one sees how various are the qualities ascribed to this set of objects. As a matter of fact, these differ, for the most part, only in mere outline, by which they may be arranged as like or as unlike. One tends *pro tanto* to lose faith in mere ideas raised in the idea-overburdened mind when out of a hundred blots compared with a norm one sees seventy-one chosen as "similar" to it. Three blots were chosen by each of seven subjects, one by six subjects, six by five subjects, seven by four sub-

jects, ten by three, sixteen blots by two subjects, and twenty-six by only one subject—these numbers applying to one norm, but being of average sizes. When one lay out the sets chosen by the concept-criteria the differences in the blots often struck him more forcibly than did their sameness. Yet each subject had all the time he wished for his selection and made a deliberate choice, as deliberate at least as real life would usually allow of his making in comparing actual experiences. Only very rarely, moreover, would the actual objective similarity in life be as narrowly confined as in the conditions of these simple experiments.

Within the number of those subjects who chose their similar and dissimilar blots by ideal (rather than by affective) criteria, there is a considerable range of formal accuracy, dependent on the ideas employed. Some ideal criteria were obviously more essential than others and led to the selection of a set of blots evidently like each other and the norm. Ideal criteria gave more accurate results in the dissimilarity choices than in the similarity choices. This is, as we should expect, on logical principles. The awareness of unlikeness is an easier, if not a simpler, process apparently than that of likeness, for the change of consciousness is greater and so easier to appreciate. At any rate, the sets of blots chosen as unlike the norm were much more certainly unlike it than were the "similar" blots chosen like it.

As we pass, it is not improper to note the indirect evidence afforded by these experimental results of the motivity of even conceptual consciousness. Ignoring the larger questions as to understanding, there is here ample illustration that such a cognitional process as the comparison of bidimensional forms does not ordinarily find issue until the actual *word* symbolic of a concept is fairly clear in consciousness. If it gives the subject the impression that it "appears" out of his vague subconsciousness (as often is the case) that is another problem that need have here no further mention. This conscious-becoming of an actual word can mean nothing else, it seems, than the innervation of those muscles and glands whose proper coordination would utter the word. Such dependence of an intellectual process as general as that of a judgment of likeness or of unlikeness upon the activity of the neuromuscular mechanism of speech is not any too frequently at hand. Here it can be taken for what it is worth in the doctrine of the relations of body and mind.

Were we to summarize and fuse the notions inductively suggested by this little research we could emphasize that judgments of bidimensional forms, when not geometric, are more accurately made by "feeling"-criteria than by conceptual criteria. The subjects who paid most attention to the actual visual sensations (retinal and oculo-motor) as objectified in *looking at* the blots instead of *thinking about*

them, made the best, that is, most similar and most dissimilar, selections. The former in choosing similar forms kept the change of consciousness at a minimum by their method, for they retained in mind a more or less true image of the norm. The latter, the conceptualists, on the contrary (but only after innervating for the word), replaced the original visual image with a more or less partial concept and repeated it in their choices, but more or less forgot meanwhile the shape of the norm. The practical application of this principle, familiar to psychologists, to affairs, for example in the taking and evaluation of evidence in legal trials, should not be further delayed, especially since rather numerous researches along various similar lines (that of Cattell, for example) have all pointed to the same really important fact that what we see or hear or feel is often determined as much from within as from without ourselves.

Another result of this work that may be mentioned is its emphasis on the practical value of affective impressions in comparison with knowledge that is purely cognitional. It is outside of the experimental results somewhat, of course, but it may be strongly believed that this principle is continually acting often to our disadvantage, and especially in education, in our relations with our generally experienced environment, and with each other. As demonstrably here, the learning mind, through too little attention to this matter, is led frequently to errors that might be often avoided did it allow greater and more nearly natural freedom to the sensational and especially to the affective aspects of our mental process. In education we are undoubtedly apt to overdo ideation and to underdo the affective phases of the developing mind. Greater objective activity in the free realms of feeling and less reliance on the "apperception-mass" would surely lead the child to see things as they are rather than as a more or less formal and hereditary association of ideas compels him to think them.

The one other result that appears most noteworthy of those suggested by this work is its evidence for the neuromuscular basis of conceptualization—evidence coming, it is true, perhaps not less from within than from without! These chance-characters as a rule have in them a minimum certainty of conceptual symbolism—that is, on the average, they are about as far away in shape from language-symbols as any forms that could be devised. None the less, as we have seen, they usually start some conceptual associations, more often, on the whole, than trains of imagination, and they start these associations, so to say, without a push, without giving them more than the needful minimum of bias in any one direction—they introduce the energy but do not guide its course. Under these circumstances the association-time and especially the wholly subconscious start is

very long oftentimes. Often, as we have seen, the consciousness was to introspection a mere confused and scarcely conscious jumble of more or less unpleasant strains in and about the head, eventuating, however, sooner or later in a *word* clearly thought or even spoken aloud. In the usual form of word-association measurements, in the formerly so numerous researches on reaction-time, the symbol used as a stimulus was either a printed or a spoken language-symbol and therefore in the closest cerebral connection with the muscular innervations, etc., of language-expression as developed in the brain when the individual learned to understand and speak and write. In these cases, on the other hand, the stimuli were no such familiar symbols, practically part of the language-expression mechanism, but were rather almost unrelated stimuli, abstract, so to say, rather than concrete. None the less, after a time the speech-innervations were suitably set going.

It is hard to believe that this difficulty of language-association under these circumstances is other than the difficulty of making "new" pathways, combinations, in the expression-neurones of the brain. This means, probably, each time a new struggle through unaccustomed innervations of speech-muscles. There is apparently no other neurologic basis for the confusion and the delay. These last were both experiences unpleasant to the subject and tended, therefore, to be eliminated by repetition and habit, if it were possible; yet they were neither eliminated nor much shortened, at least within the limits of these experiments. Neurologically this is interesting, this slow and unpleasant fumbling around of a sense-impression among the infinite possibilities of cortical (and nuclear?) routes. It is interesting, too, in a broader way, philological and psychological, in so far as it suggests that, in the human mind as of old in the great empire, all roads, even the most unlikely trail of a chance ink-blot form, lead sooner or later into the (mostly muscular and epithelial) innervations of language-expression—the one function characteristic of humanity. As has already been suggested, these stimuli were as far as possible from language-symbols of any language, and the outcome of the association-process was, therefore, all the more striking and suggestive, however inferior the determination of likeness and unlikeness by this process as compared with the few cases where the cerebral association remained of the affective aspect.

Recent advancement in biochemistry and especially in neuro-metabolism has made possible suggestions more definite by far than ever before as to the real nature in scientific terms of these innumerable influences darting through the cerebral maze that psychologically we discuss as subconscious associations. However interesting, however, such speculations may be, the broader questions

as to the relationship of mental "energies" to the forces we know as chemic and electric must outweigh in interest the purely physiologic problem. How can we designate for proximate scientific use the ultimate nature of the neurogram, the memory-trace, the endless and perhaps ineffaceable "vestigia" of ever unique experiences? And if we could and did "connote" them, should we not forthwith find it quite impossible to discriminate the energies we described from the thing we speak of as consciousness, with its sthenic and asthenic conditions, its dynamogeny, its varying qualities and quantities and durations, and the other numerous characters which it shares with the "somewhats" that even the avowed dualist (if he truly exists still) speaks of as energies? In fine, then, why do we not give up this two-faced terminology of a bygone time and speak the straight language that leads to clear thinking and to real knowledge in terms that are ultimate? To the present writer it is unknown what proportion in general of the psychologically informed consider that ideation (as well as feeling and willing) is immediately interknit with ("dependent on") the innervation of the muscles and glands that would express the concerned ideas. One would almost assume that nearly all psychologists who know their physiology fairly well (they are none too numerous) would nowadays thus presume the basis of thought, for gradually the psychophysiologic chasm is narrowing, or, at least, many firm bridges are being thrown across it; perhaps before we fully realize it we shall look in vain for the chasm itself!

However all this may be (the "physiology" of ideation and thought), here in this little research is adequate evidence, so far as it goes, that an idea comes plainly "into the mind," that it becomes clearly conscious, only with definite innervation and more or less deliberate and complete occurrence of the muscular movements that would express the concept in words. One can dimly *feel* the similarity or dissimilarity between two chance shapes, but in most persons, too many, perhaps, the feeling is useless and even oppressive, until definitely expressible in neuromuscular terms more definite and distinct than those of a feeling-tone: that is, articulated.

GEORGE V. N. DEARBORN.

TUFTS COLLEGE MEDICAL AND DENTAL SCHOOLS.

A PHASE OF THE PROBLEM OF CONTINGENCY

THE aim of this paper is to discuss a phase of the very old problem of contingency; not the contingency of the acts of the individual man as such, but one sub-case of what might be called cosmic contingency. The precise problem will, I hope, be made clear as we proceed.

On the one hand, it is desired to admit and use universal natural law, but on the other to find, if possible, an escape from the *nec quando nec ante nec post, sub specie aeternitatis* point of view which Spinoza took to be the logical outcome of his determinism. It is desired in this paper to accept determination in the fact of eventuation, but not before that fact. In other words, the writer objects to the position that determination, definite and final, exists antecedent to the act of eventuation. His thesis is that such determination antecedent to the fact is shown only for a closed situation, a finite universe; and that, accordingly, the logical process whereby the mind has historically gone to a universal and all-inclusive system of antecedent determination is blocked, if the actual universe be conceived as quantitatively infinite.

The program as stated is a problem of ethics or perhaps more exactly of philosophy as philosophy essays to mediate in the conflict between a certain extension of physical science on the one hand and an apparently essential demand of ethics and practical life on the other. But, although the problem is philosophical, the discussion will be more scientific, because the writer believes that the assertion of the above-mentioned extension of law is scientifically neither necessary nor justifiable.

One who fixes his attention on natural scientific explanation easily becomes so enamored of the certainty with which "effect" follows "cause" as to feel that in this uniform and invariable succession there does lie and must lie the key to "the riddle of the universe." At least so far as the riddle can properly be put for solution, and so far as a key may wisely be sought. Especially does this key appear to be the true and only one in proportion as it enables the student of nature to foretell future eventuation, whether in the artificially devised experiment of the laboratory or in the observation of naturally occurring phenomena. This line of thought might be developed somewhat as follows.

If it be true that each event finds its entire character determined exactly by previous events, then a knowledge of those previous events and the general operations of nature would enable us to foretell exactly the entire character of the event in question. We do not now

ask whether human ability shall ever be equal to such a task; the present point is that the character of the event is completely determined in advance of eventuation, and, under certain ideal, even if unattainable, conditions, could have been foretold. Any event that is thus exactly determined by a set of conditions is *actually* determined as to both its character and occurrence as soon as the determining conditions are themselves exactly and exclusively determined, and this is true even though time must elapse before the determined event becomes actual. In this sense the event may be said to exist potentially in its determining conditions. If, then, the state of affairs S_2 exists thus potentially in the state of affairs S_1 and S_3 similarly in S_2 , does it not also follow that S_3 exists in the same way in S_1 , and so for all succeeding S 's? That is, this line of reasoning seems to make us conclude that in the present is contained even now the whole future, determined in minutest detail both as to character and as to occurrence.

When these implications begin to take hold of one, interest somehow seems to shift from the long-drawn-out process and its unfolding to the formula which implicitly contains the whole. If we choose to use an unphilosophical expression, God has the formula and sees all things as present. Spinoza, who thought much along this line, applied the word eternity to the timelessness of the formula, asserting that "in eternity there is no when, no before, and no after." For him "imagination" may see things *sub duratione*, but "intellect" and "reason" must see them *sub specie aeternitatis*. Naturally and necessarily, he goes on to deny any objective reality to contingency or possibility. They exist only relatively to man's ignorance.

But our introduction is, perhaps, already too long. Repeating from the first page, what we wish to establish is that final and exact determination prior to the event is shown only in and for such a closed and finite situation and universe as is substantially different from what science assumes our actual universe to be. In the discussion of this, let us first assume that the situation out of which any event has grown is separable into mathematically distinct elements. Later we shall reject this limitation and repeat in part the consideration.

1. It will be convenient to divide again this case of mathematically distinct elements into two sub-cases, according as the number of elements are or are not numerically infinite.¹ We consider the former first.

(1) The conditions given in this case seem to me to be such as to

¹ I use the word infinite here and elsewhere throughout the paper, in the mathematical sense, to indicate, that is, such a variable number as may surpass any arbitrarily assigned number, however great.

lead undoubtedly to predeterminism of the complete type. The uniformity of nature, assumed throughout our discussion, can not mean less than that, any set of conditions being given, the next succeeding event is uniquely determined. To fix ideas, let us suppose that the universe, for this case, is composed of exactly six mathematically distinct elements. For my part, I can not but think that mathematics itself, or something very like it, would express for us the whole subsequent history of such a system. An inclusive uniformity of nature would certainly mean that the next succeeding state of affairs would be uniquely fixed in the case of the given simple system of six elements. Whether mathematics would fail, as in the problem of three bodies, to tell us the solution has no bearing on our point. The resulting status would be fixed whether or not we could pre-*vis*e or predict it. And if this would be true, for the next succeeding state of affairs, we have again the discussion of the *S*'s as given above. All succeeding states and movements of the system would be included potentially in the given conditions. All the future of such a system would be included in one formulation. Spinoza's world view would hold. True reason would see things *sub specie æternitatis*.

And if this be true for a system of six elements, it would be quite as true for one of sixty or six thousand or six million. So long as the number of elements is fixed, one all-inclusive formula contains the whole future² history of the system.

(2) But if we have an infinite number of elements, the situation appears very different. As I see it, we can not longer say that the conditions which determine any (arbitrarily chosen) event are fixed in advance of the actual eventuation. As this is the crux of the whole argument, we may with propriety dwell on the consideration of this point.

An illustration may help. Consider Halley's comet. The astronomer tells us in justifiable shorthand that this comet will reappear in 1985. Does he mean to assert this absolutely? By no means. Three possible "contingencies" prevent the absolute assertion: (*a*) the calculation may be incorrectly made; (*b*) the data existing within our solar system may not all have been taken into account; (*c*) some additional body, another comet, or a "dead sun" may "enter" our system to disturb the existing conditions. The first two contingencies do not here interest us, the third is vital to our discussion. How shall we deal with it? The astronomer would doubtless say that if

²Although I have used in this discussion such expressions as *the future*, *subsequent history*, *next succeeding*, it is not to be understood that such terms with their ordinary content would be applicable to the assumed system. Their inaptness in the description is a part of the *reductio ad absurdum* of the assumption.

only he could have been given, sufficiently in advance, the data of the new body, its effect would have been included, and so we agree. What is then the new situation? The solar system is larger by the new body. The determination in the larger system is exactly as definite as it was in the smaller system, and no more so. The comet is now scheduled for, say, 1990. Will it come on time? Again the same three "contingencies" present themselves. Apparently this method of inquiry leads to an infinite regress.

Suppose we take another line of procedure. In the paragraph just concluded we seemed to be asking about foretelling, let us now confine our attention exclusively to fore-determination and ask: At what stage in the comet's history is the date for the next appearing, in fact, determined? Perhaps some more trivial instances may lead us to the answer. One sets an alarm clock to awaken him at six in the morning. The time of its going off is, we say, fixed the night before by the proper adjustment of the machinery. The event is, barring "accidents," determined thus considerably in advance of the eventuation. A miner sets a slow fuse. At what point in the process is the time for the explosion fixed? The structure of the fuse, the length cut off, the general arrangements, the time when the fuse is lit—such are some of the factors that enter into the determination of the event and accordingly of its date. With a modification later to be made, we seem to be authorized to say that as soon as the conditions for an explosion are arranged in place, the time and character of the explosion are fixed. Or more exactly, the results and the time necessary to intervene are fixed, each and all, finally and uniquely, just so soon as the determining conditions are in final and exclusive possession of the field of operations.

But when are the determining conditions in exclusive possession of the field? In the case of the explosion this can only be after the arrangements are made and no outside interference is possible. But with man a factor, the problem takes a turn that we do not care now to follow out. Let us then return to the consideration of the comet. When are the determining factors of its appearing in finally exclusive possession of the field? The terms "determining factors" and "exclusive possession" alike and together point to the same consideration that we had above of possible "additional" elements, with a like fall into the infinite regress. With an infinity³ to draw from, at any particular instant of time an additional element may "enter" into any assumed system, however large. However large the system be conceived, there is nothing within which shall limit the "determining factors" to the elements already within the system at the given time. Or, to use the other term, never can it be said that

³This is assumed throughout the paper.

finally "exclusive possession" prior to eventuation belongs to any given set of conditions. Since, then, any given system is liable to inference from what is immediately without, no inner determination of the result is final apart from a consideration of what is without; and since on our assumption there is no end to what is without, there is no limit to this ever-widening of the area of determination. The infinite regress that we found previously repeats itself here.

2. There remains now for consideration the other case in which we should no longer assume that the determining situation is decomposable into distinct elements. There appears no reason to doubt an equal applicability of the same line of reasoning. In the actual world there is no such separateness and atomism of "things" and "forces" as our vocabulary, following common sense, would imply. But the inaccurate speech so far used does not, I think, take any advantage of the position here controverted. Indeed, in the writer's own experience it was in connection with the more fluid view of things that the position here advocated came to mind.

It may be remarked a certain suspicion naturally, and probably justly, attaches to discussions in which the mathematical infinity plays an important rôle. Zeno and many less capable followers have left the warning sign of danger against this. The writer feels, however, that in the present case he is but tracking the steps of those whose position he attacks; and this to show that it is they, and not he, who have misused the concept. They have found determination to exist antecedent to the fact in certain finite and isolated systems, and have unwarrantably extended that concept to apply to situations infinite in both time and space. The writer's use of the mathematical infinity is but the pointing out of their misuse of it.

The scientific method has been devised with reference to control, and control depends on determination antecedent to the eventuation; but there is here no criticism of the scientific method properly understood. Science takes a world which is (apparently) infinite and not (exactly) decomposable into distinct elements, and by abstraction simplifies this actual world into an ideal world wherein are a finite number of distinct elements. Its conclusions, thus consciously hypothetical, are conditioned always on the assumptions (1) that the situation is adequately analyzed and (2) that all the factors are included. With growth of knowledge comes growth of this ideal world, *i. e.*, more factors are included in the consideration. With each such addition the ideal world accords more nearly with the actual by an amount equal to the influence of the added factor. Always the ideal (for the time being) is finite and accordingly pre-determinism does reign in it. But if the actual world be infinite, the

addition of factors to the ideal world will be an endless process, and the ideal world can never coincide in all points with the actual.

In conclusion, any event is thus determined to be what it is in every detail by the conditions that are on hand at the time of eventuation. Looking at the present and past, determination is always discernible to appropriate scrutiny. Looking ahead, there is only the approximate determination such as we know in science. To speak absolutely, any event is finally and exactly determined only in the fact of actual eventuation.

W. H. KILPATRICK.

TEACHERS COLLEGE, COLUMBIA UNIVERSITY.

CHANCE AS A CATEGORY OF SCIENCE

TERMS slip easily from popular usage into the technical vocabulary of logic. We often employ the word *chance* as a general synonym of ignorance, while science has accepted a usage which makes chance the antithesis of law. There arises, therefore, the problem of the nature of chance as a category of thought, for upon a distinct and unequivocal interpretation of the term depends alone its legitimate use in science.

There are two possible attitudes we may assume regarding the concept of chance. On the one hand, we may look upon a usage which simply passes over the logical issues and regards chance as merely a shroud for obscuring our veritable ignorance of the true causes of an event. Such a point of view makes chance subjective. On the other hand, we may regard the term as indicating a serviceable, scientific concept, having a significance in the logic of the sciences, a significance which gives chance a distinct and definable value. This point of view makes chance objective.

The usage of chance which makes it depend solely on human ignorance is the immediate postulate of a metaphysical assumption. If we presume, as a fact of reality, that law and order are universal throughout nature, then nothing ever occurs by chance, but is the immediate result of definable laws. If, with this in mind, we speak of the chance occurrence of an event we simply imply that we fail to comprehend the laws upon which the event depends, although we recognize that somewhere in the vast totality of nature's order the event would find an adequate and full explanation. There is no chance from the point of view of the absolute; the postulate of the ultimate uniformity of nature destroys chance with one stroke of the pen and makes all lapse of regularity the lapse of human knowledge.

But this brushing away of chance from our speech is merely a postulate of a deeper metaphysical theory. It has not touched the problem of its logical value as a scientific category. The fact remains, over and above the postulate of absolute law, that science and the demands of our ordinary speech require a concept that shall express the permanent doubt of an event, whatsoever our ultimate world-formula may be. Five red balls and five black balls are in a bag. From the arrangement of the balls, the folds of the bag, the movement of my fingers, and the configuration of the dendrites of my brain, it may be determined in an absolute sense which ball I first draw out, but these considerations are not part of the immediate circumstances at issue. We want a term which shall express the indeterminate character of the forthcoming event. That term is chance. Science demands its employment in a thousand instances, and the logic of the sciences must prescribe a usage which makes it legitimate. And all this without any reference to absolute law and regularity.

The problem of chance is not concerned with the organization and uniformity of all nature, for the simple reason that no scientific problem ever embraces the universe. The chemist must deal with the molecular constitution of quartz without discussing the period of the earth's history in which the quartz congealed, nor the seismic convulsions which accompanied its formation. In an absolute sense all knowledge may be relative—that is a metaphysical issue—but in the precise sense of a scientific investigation all the facts of the problem are restricted to a limitable universe of discourse. In these definite confines chance arises. It can, therefore, have an objective and valid meaning in a world ultimately causal and sequential, simply because the scientific problem in which chance occurs is not the problem of all human knowledge. We may accept or reject the metaphysical premise of an absolute world-order, where at the last extremity all is law and nothing chance. Nevertheless, the logical problem remains.

Chance is bound up with certain types of scientific categories which enable us to describe experiences. In describing experience we must first limit it. When DeVries speaks of the occurrence of a mutant or sport variety of a species as the result of chance, he is contrasting chance with law in the limited sphere of germ cells, inheritable characters and similar biological phenomena. McDougall's observations that the occurrence of mutants can be influenced by salt solutions is a chemical fact not included originally in the definitely limited universe of discourse in which the chance mutant may be said to occur. This chemical fact may be added to the original universe of discourse of germ cells and inheritable characters

by enlarging it by just so much. The fact remains, however, that the universe of discourse, in which the chance mutant occurs is, to the minds of the students of genetics, limited and precise.

This limiting of the sphere of a scientific problem determines the solution of the problem. If the biologist so defines the problem of heredity that chemical phenomena are excluded from its definite boundaries, then chemistry can have no effect on the solution which the biologist ultimately reaches. It is out of the matter by arbitrary exclusion. Of course, a scientist will make his original universe of discourse as large as he deems necessary, but it will always remain arbitrary and determined, simply because it can not include all nature. It must be small to be workable. It must be precise to be thoroughly understood.

This determines for each scientific problem a limited horizon within which the conditions of solution are supposed to lie. The labor in solving the problem is the labor of categorizing and systematizing the facts within this limited universe of discourse. And a solution arises when some regularity is observable. We call that observed regularity a law. When no observed regularity is evident, one event happening apparently without sequential relations to other events of the universe of discourse, we may call the occurrence of that event *chance*. It is, therefore, merely the absence of sequential regularity within the universe of discourse of the problem.

According to this interpretation, law is the successful reduction to some principle of order of certain phenomena within a limited universe of discourse. Chance arises when no regularity is observable. The occurrence of a mutant in the limited universe of discourse with which DeVries and other biologists deal in their problems of genetics is a chance occurrence simply because these biologists are unable to discover any regularity underlying the occurrence of such phenomena. Were the universe of discourse to be much enlarged, say by the introduction of many chemical and physical facts, it is possible that what now appears as chance would then become law. But for the universe of discourse at present considered the event can only be explained in terms of chance. This theory of chance, therefore, makes chance and law relative terms dependent upon the extent of the universe of discourse within which the scientist hopes to solve his problem.

Such a theory of chance indicates that the step between chance and law may depend on nothing more vital than the limits by which the problem was originally circumscribed. Chance and law are not antitheses of one another, but simply terms which are relative to the success or lack of success with which we find regularity in the universe of discourse of any scientific problem. Moreover, the

occurrence of a chance event may be explained without denying the general uniformity of nature, for it would be observed that the process of reducing chance to law is a process of discovering the two sets of conditions, within and without the definite universe of discourse, upon which it depends. Let a represent the occurrence of a chance event, such as the drawing of a black ball or the occurrence of a mutant. Let $a, b, c \dots$ represent the conditions within the immediate universe of discourse of the problem. For example, in the case of a mutant they are conditions inherent in the structure of the germ cells and the like, which the biologist is bound to take into consideration. And let $m, n, o \dots$ be certain external conditions without the universe of discourse; in the example in question they are those conditions which the biologist has not deemed worthy of considering, as for instance, the effect of atmosphere and chemicals upon germ cells. Chance would be represented by the formula $a = f(a, b, c \dots m, n, o \dots)$. Then according to this formula, the chance event a becomes a function of these two separate sets of conditions, the one confined entirely to the universe of discourse of the problem, and the other set lying without it. The reduction of chance to law consists in the determination of such values for $a, b, c \dots$ and $m, n, o \dots$ as to bring regularity into such a new universe of discourse as will include all these conditions.

ARTHUR DEWING.

HARVARD UNIVERSITY.

REVIEWS AND ABSTRACTS OF LITERATURE

Psychology and the Teacher. HUGO MÜNSTERBERG. New York: D. Appleton & Co. 1909. Pp. 325.

Part I. In this age of pedagogical unrest, Münsterberg welcomes the possibility of a more intimate connection of laboratory psychology with schoolroom operations. The unpardonable sins of pedagogy have been vagueness and failure to utilize the most vital psychological discoveries, chiefly because of the lack of articulate ideals of the end in view. Laws of attention, memory, or interest, though true, may not necessarily be pertinent to educational situations. No facts *per se* yield educational guidance. Practical pedagogics, for example, becomes vicious when a wholesale carrying-over of laws of interest results. The foolish inference in this classic example of pedagogical fallacy is that we must let the child *illustrate* the psychological laws of interest, thereby bringing about chaos of aims and subversion of sound development.

An ethical inquiry, then, must supplement a psychological one. From the points of view of biology, psychology, and sociology we may analyze the processes and discover suitable methods of procedure, but science as

science actually transforms, does not copy, reality. Ethics, portraying human relationships and whole purposes in action, occupies the realm in which vital pedagogy must move.

The author, now in the field of ethics, scores standards based on hedonism, suggesting that our off-springing pedagogy of interest sets a mean goal and offers a cheap and superficial task. We must find then in a sort of dynamism true values beyond reference to a personal state, for which, too, we can naturally strive. Here the author implies his whole philosophy of *eternal values*, only the most literal drift of which the average reader will take in. He does, however, exhort with the threat that he who does otherwise than this in education "prostitutes his personality." On this basis education is not an affair of mere morality any more than one of mere art or religion or logic. And though the personal factor may enter into one's categories of goals of worth, still "superpersonal absolute values for all life" alone can make unity of purpose and integrity of attitude for the teacher. Clearly ethics furnishes the aim.

Part II. As to the method educational psychology is in an apparent dilemma. The humane emotional attitude of personal intercourse is interpretive and appreciative, the impersonal attitude of science is literally descriptive and causally explanatory. Must the teacher shift his point of view, or rather grow securely in the former? The author apparently concludes that the teacher, in so far as he is to be a conscious psychologist, is limited to the crude and clumsy use of facts brought bodily and literally over from the "scientific" field to the field of "real life." There is a suggestion here that clarity of science, even of psychological science, stands opposed to the natural-life point of view, however significant and rich this is. As to systematic psychology, Münsterberg makes slight use of, indeed scarcely fathers, his former sensationalistic or one-element theory. Elementary psychology of some sort, however, must be adopted to supplant faculty psychology and to reveal the "bewildering manifoldness" of all mental processes. To offset this impending confusion a biological view-point will restore the unity by conceiving the nervous system as essentially a reacting not an absorbing, machinery. Experiences, to be vivid, and hence efficacious, must fit in with action. In this sense the student is a motor apparatus.

With this setting the author devotes eight chapters to a discussion of specific mental operations or factors, apperception, memory, association, attention, imitation and suggestion, will and habit, feeling, and individual differences in general. His chapter scheme is to discuss the notable genetic stages, the common individual differences including sex differences, the typical pertinent experimental results, suggestions as to how to investigate further, and the desirable and possible applications to school work, such as adjusting teaching to the inevitable childhood stages, etc. He is consistently and convincingly motor throughout, both in his psychology and in his pedagogy. Aside from this general schematic treatment in each chapter, a few points seem to be happily emphasized. In training in memorizing, for example, we are apt to forget the necessary "settling" or "absorption" period, as well as the different prin-

ciples governing "first learning" and "real keeping in mind" So the teacher, after he has discovered the various types under his charge, and incidentally noted his own peculiarities, should be wary of imposing his own or any other one method upon all types. A knowledge of individual differences necessarily makes teaching more intelligible, though the inevitableness of just such a situation in itself in no sense calls for a segregation of types. And again, though one utilize involuntary attention, it should be with a view to the later persistent training in effortful concentration. Formal training is a fact, training of the will being formal even when the development in question may be specific. Feeling being motor reaction, there is no emotion which can not be educated. Induce the type-action, and you tend to engender the emotion. An abnormal emotional life is a life of obstructed activities.

Part III. The work of the school consists in instruction about things, people, and self, and in inspiration in regard to our "emotional willingness" in the activities which relate themselves to harmonies, perfection, progress, idealism, human solidarity, reverence, and truth. The problem of the curriculum is to effect these two purposes, paying due regard to the student's limitations as to quantity and quality of matter, and to the social democratic pressure, and to the "almost immoral lack of support from the home." In the interests of "the unity of a national education" no shallow concessions to the psychological doctrine of interest and the philosophical doctrine of individualism—such concessions as is the elective system—should be allowed. It is impossible, with such a policy dominating, to train voluntary attention. The author next devotes a chapter each to elementary and to higher studies, suggesting the distinctive educational disciplines, and incidentally announcing a later treatise on "psychological didactics." As regards high-school subjects he deprecates the neglect of "conceptional" knowledge and training, the fact of our "æsthetic obtuseness," and the intrusion of industrial education into the wrong place in our school programs, as well as the low estate of the classics.

As to organization, we need condensation, sex adjustment, social adjustment, a reconsideration of coeducation and of the elective system, some real discipline, more "psychological" recess periods, more imaginative activity and general mentality in play and games, a principle for directing home study, and home cooperation which is "more important than taxes." The standard qualification for teachers should include the possession of emotional temperaments of discernment, a mastery of subject-matter, and a professional preparation, which last, as at present offered, generally needs to be supplemented by ethical training. Lastly, the school should try to win back the male teacher.

The tone of the book is hortatory as well as analytic, combining pretty well, or at times shifting skillfully and easily from one attitude to the other of those the author has so vividly contrasted. The discussions of elements and parallelism seem forcibly drawn into the treatment. There is needless repetition too schematically presented. Many slaps at imaginary absurd pedagogists lessen the force and detract from the tone of integrity

of the presentation. The author has overworked the distinction, for practical purposes, of facts and purposes, assuming and then too easily settling an artificial epistemological question. There is an unfortunate savor of the doctrinaire. The book seems academic. It arouses the suspicion of a lurking individual philosophical system which, as with Spencer, must be, "illustrated" by the educative process. The other sharp distinction—between a thing eternally valuable in itself and another that merely brings pleasure—just as the above distinction of one which possesses intellectual clarity and another that has merely emotional richness still further accentuates the mechanical compartmental aspect of the work as a whole.

On the other hand, the book is to be commended for its high educational aim clearly and boldly stated and consistently defended. The author's insistence that we supplement psychological inquiries with ethical ones should set departments of education and teachers' colleges to work upon the problem, already being definitely faced by France and Japan, for example, of how to raise the present standard for certification of teachers in this specific direction. The work is broken up into twenty-nine short chapters which are rich in their suggestiveness. The author has apparently settled so many, until quite recently at least, highly controversial problems of formal discipline, of memory, of attention, of feeling, etc., that the critical reader will scarcely be persuaded, particularly when all the authoritative sources remain unmentioned. If, however, the purpose of the book is rather the elementary and popular one of conveying to the ordinary teacher the mere fact of the "bewildering manifoldness" of mental life, it succeeds consistently chapter by chapter. One of the good features of this psychological part of the book is just this, that, though each chapter-ending is tantalizingly inconclusive, still suggestions, hinted at rather than clearly outlined, of pertinent lines of experimentation, abound. The average young teacher of educational psychology and the better-than-average public-school teacher needs more. Again, as I have already found with the book in a class of fifty-seven prospective teachers unacquainted with Münsterberg's philosophical characteristics, the most literal and trite inferences from his ethical discussions and implications are drawn. This suggests that writers of treatises for teachers should possibly put only in the background, if anywhere, personal predilections for a particular rigid philosophical system. Common words used technically by this author, such as "causal relation," "description," "explanation," "appreciation," "will attitude," "values," etc., presuppose a good deal, and the average reader, student, or teacher is nonplussed by them. Sentence structure of a sort of adapted German idiom with the consequent grammatical irregularities increases the difficulties. The following are typical examples. "All which makes the child willing for the work" (p. 243). "We may be short as we have approached this field once . . ." (p. 244). "Whether artistic drawing or singing are studied" (p. 247), etc. To offset such obstacles of approach to his message Münsterberg has at command a style of exposition which is characterized by penetration, incisiveness, wealth of illustration, vigor of purpose, en-

thusiastic confidence in the doctrine unfolded, and directness of application which is often startlingly convincing.

On the whole, this book from a distinguished psychologist should be a welcome addition to one's pedagogical library, force many to resort to experiment to verify or to refute the principles expounded, and, incidentally, prepare the way for the author's more systematic promised treatise on "psychological didactics."

CHAS. HUGHES JOHNSTON.

UNIVERSITY OF MICHIGAN.

Clavis Universalis. ARTHUR COLLIER. Edited with Introduction and Notes by ETHEL BOWMAN. Chicago: Open Court Publishing Co. 1909. Pp. xxv + 140. \$1.50.

All students of the history of philosophy have reason to be grateful to the editor of this volume, to Professor Calkins, who appears to have inspired the preparation of it, and to the publishing house which has brought it out in a dignified but inexpensive form. The book seems to be an elaboration of a Master's thesis submitted by Miss Bowman at Wellesley College; would that, in the huge annual output of such lucubrations in our graduate schools, one in a score yielded a result so serviceable to the rest of the republic of letters! For Collier's "*Clavis*," a document of all but the highest interest and consequence in the history of English philosophy, has hitherto been virtually unprocurable. The original edition was already a rarity before the end of the eighteenth century; and Dr. Parr's "Collection of Metaphysical Tracts," 1837, which includes a reprint of the book, is long since out of print, and is accessible, in America, in very few libraries. The present volume gives the text complete, following the edition of Parr, together with a short biographical and historical introduction, and a few pages of notes. The editorial work, in general, has been carefully and competently done; use has been made of Benson's "Memoirs" of Collier, and the clues relating to him, and to his historical influence, to be found in Reid's and Hamilton's references to him, have been followed out, so far as American libraries permit. There are occasional marks of a too mechanical transcription from sources and of carelessness in the matter of proper names. Thus the same Scottish theologian figures as Robert Baron, in the "Notes," and as Baronius, in the "Introduction." Latin names are transferred to the English text in apparent ignorance of their meaning or English equivalents. In a list of writers known to Collier appear "Vincentius, Lirinensis, Suarez"; the first two presumably disguise the name of Vincent of Lerins. "Mogurtiae" and "Marpurgi" seem needlessly archaic ways of referring to Mayence and Marburg. Dugald Stewart's name is regularly misspelled. On the other hand, the "Introduction" probably gives correctly (following Hamilton) the name of the "Professor Eschenbach of Rostock," translator of the "*Clavis*" into German in 1756, about whom the present reviewer blundered in a paper in "Essays Philosophical and Psychological in Honor of William James" (p. 289). The book is apparently not accessible on this side of the Atlantic; I supposed the translator to be C. E. Eschenbach, professor of

mathematics and anatomy at Rostock, a person of some contemporary celebrity. It appears that there was a more obscure Eschenbach, also of Rostock, bearing the Christian name of Johann Christoph, who was a theologian and metaphysician by trade; to him, seemingly, should be given the credit for making Collier, and Berkeley's "Dialogues," available to German readers.

Miss Bowman seems to me needlessly non-committal on the question of Collier's independence of Berkeley—or even slightly to confuse the question of independence with that of priority (pp. xxii–xxiv). Whether Collier hit upon the idealistic doctrine before Berkeley, may, indeed, be only "doubtful"; the point is, in any case, of small historical significance. But unless Collier's own statement be impeached, as well as several other substantial pieces of evidence, there can be no doubt whatever that the conclusions of the "Clavis" were arrived at long before they were published, and before the author of them knew anything of the speculations which a young Irishman in Dublin was then confiding to his *Common-place Book*. And the fact that the two idealists arrived at their opinions independently is of sufficient historical interest to deserve to be unequivocally stated. The "Notes" trace out a number of parallelisms between Collier's and Berkeley's arguments; the value of the volume would have been increased if this had been done in a more complete and systematic manner, and some exact account given of the cases in which the proofs offered logically coincide, those in which Collier supplements Berkeley, and those in which Berkeley supplements Collier. The matters noted, however, are minor imperfections in a useful and well-executed piece of work.

Two results may conceivably follow from a more general acquaintance, on the part of students of philosophy, with Collier's little treatise. One is a certain modification of the usual account of the filiation of ideas in the history of English thought. In Berkeley subjective idealism seemed to emerge chiefly as a consequence of tendencies that owed their vogue largely to the influence of Locke—empiricism, nominalism, the demand for simplification and intellectual parsimony, the desire to set definite bounds to the scope of human knowledge. Berkeley's task is commonly, and not erroneously, represented as consisting in carrying out Locke's task and Locke's presuppositions with greater rigor and consistency; his "New Question," says Fraser, was: "What in reason should we *mean* when with Locke we assume the real existence of 'matter'; and to what sort of power should we refer the phenomena that are present to our senses—if, in the spirit of Locke, we are to be faithful to the facts?" Now, Collier can not be placed in any line of development that runs through Locke. It is scarcely credible, that Collier was unacquainted with the "Essay concerning Human Understanding," especially since his friend John Norris wrote a reply to it, 1694; but at all events he was quite uninfluenced by it. Malebranche and Norris for him provided the sufficient basis for idealism. He is, therefore, the chief (though not the only) witness to the fact that Cartesianism of itself tended directly towards idealism; and that this tendency was strengthened and accelerated when the Cartesian

problem of the psycho-physical relation was approached with the presuppositions of a Platonistic epistemology and a Platonistic metaphysics of the absolute. There is, thus, a double line of descent in English idealism; and Berkeley represents (in the main) the cadet branch of the family. This historical fact is, perhaps, not so generally emphasized as it should be. With a fuller recognition of it may come an appreciation of other features of seventeenth-century English Platonism which are not less important in themselves, as types of philosophic doctrine, and are more important as historic influences.

It is not unlikely, also, that teachers of philosophy will make use of parts of the "Clavis" as a means of first introducing undergraduates to idealism in one of its typical historic forms. Collier's English has none of the charm, the ease and urbanity, of Berkeley's style; he is never likely to take rank as an English classic. But if his book is inferior as literature, it is in some respects superior as argumentation, and especially as pedagogy. Compared with the "Principles of Human Knowledge," the "Clavis" has more of the virtues of a good text-book. It begins with explicit definitions and explicit warnings against possible misunderstandings; its arguments are classified, catalogued, and correlated; and it makes less of the alleged sheer meaninglessness of the expression "existence without the mind," and more of the really serious arguments from the antinomies and from the relativity of all sensible properties. Berkeley's mode of approach to his conclusion in the "Principles" usually, I find, produces upon the mind of beginners the impression that he is begging the question from the outset; such an impression is not likely to be produced by the reading of Collier. Finally, Collier does not encumber the argument with the essentially separable question concerning the existence of "abstract ideas." For these reasons, the best historical introduction to idealism would seem to me to consist in selections from the "Clavis" followed by parallel and supplementary passages from Berkeley's "Dialogues."

It is to be hoped that the present welcome volume is the harbinger of a series of new editions of the more important writings of the English Platonists. It is highly discreditable to English and American scholarship that we possess neither modern and accessible editions of the texts of most of these writings, nor any adequate historical study of the movement of thought which they represent. The greatest desideratum here, perhaps, is, first, a volume of judicious selections from the principal epistemological and metaphysical treatises of the Platonists—which should include something of Lord Brook, of More's "Enchiridion Metaphysicum" and "Antidote against Atheism," of Norris's "Reflections" on Locke, his "Theory of the Ideal World" and his "Metaphysical Essay towards the Demonstration of a God," of Collier's "Specimen of True Philosophy," and of Burthogge's three principal writings; and, second, a corresponding volume of selections representing Platonistic ethics, which should include a translation of More's "Enchiridion Ethicum." Until the literature is thus made available, one of the most distinctive, most influential, and most interesting movements in English reflection remains not only virtually unstudied, but also scarcely accessible to study.

A. O. LOVEJOY.

THE UNIVERSITY OF MISSOURI.

The Psychology of Skill with Special Reference to its Acquisition in Typewriting. W. F. Book. University of Montana Publication Bulletin No. 53, Psychological Series I. 1908. Pp. 188.

The aim of the author is to make a thorough analysis of the conscious processes involved in the acquisition of expert skill in typewriting, and a more complete study of the development and formation of habits than has been offered hitherto. Four observers were trained in the use of an Underwood typewriter; two by touch, with the key-board entirely concealed; and two by the usual sight method. Records were taken on a smoked drum of the number of strokes made on the machine, of the time required for each, and of the observer's pulse variations (temporal artery in front of each ear). A supplementing record of the introspections of the learner and of the comments of the experimenter was also kept.

The following conclusions were reached:

1. Lower order habits develop into those of a higher order by a process of short-circuiting. For example, the several processes antecedent to the striking of a key fuse into a motor-tactual image of the letter which serves to guide the movement. This letter-image in turn gives way to word, and finally to sentence-images as the learner progresses.

2. New habits are always formed wholly unconsciously, and only under great effort and other favorable conditions; but, once formed, they are consciously employed when their advantage has been recognized. The higher order habits develop simultaneously with the lower and depend for their further development on the perfection of the lower. During the perfecting of the groups of habits there occurred in some observers a period of arrest lasting some thirty days. This critical stage appears to mark the time required to overcome certain difficulties encountered in the learning.

3. A close correlation is found to obtain between the pulse rate and improvement, but only when effort is efficiently applied. A supra-normal pulse rate characterizes periods of greatest improvement; a subnormal rate, periods of arrest.

4. Regarding the retention of skill, two tests were made on one observer, each covering a period of ten days; the one, six months, the other, eighteen months, after the close of the regular practise. The first gave a marked decrease in the average number of strokes a day when compared with the average number of the last ten days of regular practise. The second showed an appreciable increase. This result is thought to be due to the disappearance, with the lapse of time, of certain psychophysical difficulties (interfering associations and bad habits of attention) incidentally acquired in the practise. Their removal left the more firmly established typewriting associations unimpeded. The author believes that these interfering tendencies had not disappeared in the six months preceding the first memory test, and that the loss of efficiency was due to the dulling of the typewriting associations.

The reviewer can not make the table on which these results are based coincide with the curve of regular practise. As the curve stands, the second memory test, instead of indicating an average increase of eighty-

five strokes a day as the author tells us, shows a decrease of some fifty strokes from the average attained in the last regular practise, and an increase in the percentage of errors. This result would seem more plausible after so long a lapse of time than an actual increase of skill.

M. GERTRUDE RAND.

BRYN MAWR COLLEGE.

JOURNALS AND NEW BOOKS

ZEITSCHRIFT FÜR PSYCHOLOGIE. November, 11, 1909. *Die Heterophorie und das Gesetz der Identischen Lehrrichtungen* (pp. 1-55): PROFESSOR DR. FRANZ HILLEBRAND. - Critical discussion (against Witasek) of the above principles in visual space perception. *Ein Beitrag über die sogenannten Vergleichen übermerklicher Empfindungsunterschiede* (pp. 56-71): ROSA HEINE. - Confirmation, with daylight adaptation of Fröbes results in which the subjective mean between two brightnesses was found to be higher than the arithmetical mean. When subjects are instructed to judge without the aid of cohesion, the reverse results are obtained. *Die assoziativen Faktoren ein ästhetischen Geniessen* (pp. 71-119): RICHARD MÜLLER-FREINFELS. - For strong artistic reactions not the unprejudiced indifferent consciousness is most favorable, but that in which latent harmonious dispositions already exist. Inner imitation, though not essential, is the best means of reenforcing the esthetic effect of an impression. Animistic interpretations, based on feelings of organic adjustments and innervations, deepen and enrich esthetic reactions to forms, lines, melodies, etc. Artistic enjoyment is of two kinds, depending on the rôle of the "idea of self," (1) as participant or (2) as spectator. *Über die Verschmelzung von Schallreizen* (pp. 119-143): HEINRICH SCHÜSSLER. - The fusion of two or three successive noises (electric spark, sound hammer strokes) is easiest when the strong stimulus is initial, most difficult when faint noises follow each other. When the initial noise is faint groups of three fuse more easily than pairs. Diffused attention favors fusion. *Reviews: Lipmann, Über die Möglichkeit einer durch psychische Kräfte bewirkten Änderung der Energieverteilung in einem geschlossenem System; A. Müller, Die Psychologie des Unbewussten. Das Unbewusste in der Modernen Psychologie; A. DREWS. Grünbaum, Der Begriff des Ideals; ABRAHAM SCHLESINGER. Ariens-Kappers, Einführung in die Lehre vom Bau und den Verrichtungen des Nervensystems. L. Edinger, The Principles of the Minute Structure of the Nervous System as Revealed by Recent Investigations. GUSTAV RETZIUS. Koffka, The Psychophysics of Climate. E. B. TITCHENER. Köllner, On the After Images of Subliminally Colored Stimuli: TITCHENER and PYLE. Kieson, Über die Wirkung des Stovains auf die Organe des Geschmacks, der Hautempfindungen, des Geruchs und des Gehörs nebst einigen weiteren Beobachtungen über die Wirkung des Kokains, des Alipins, und der Karbolsäure ein Gebiete der Empfindungen; M. PONZO. Müller-Freienfels, The Psychology of Advertising: W. D. SCOTT. Lange, Un cas d'Associa-*

tion latente: E. GOBLOT. Baade, *The Time of Perception as a Measure of Differences in Sensations*: TAIZO NAKASHIMA. Spielmeyer, *Zur Theorie der Halluzinationens*; Kurt Goldstein, *Bemerkungen über das Realitätsurteil von den Halluzinationen*: A. PICK. M. Meyer, *The Perimetry of Sound*: D. STARCH. Lipmann, *Les Synesthésies*: H. LOWRES. Spielmeyer, *Une théorie nouvelle de l'Aphasie*: L. DUGAS. Lange, *La spatialité des faits psychiques*: L. DUPRAT. S. Meyer, *Psychobiologische Grundbegriffe*. III. *Gefühl und Empfindung*; O. Kohnstamm, *Modifikation der Gefühle*: EDUARD LUTZ. Müller-Freienfels, *Die gemeinsame Wurzel der Kunst, Moral und Wissenschaft*: HERMANN JÄGER. Lange, *Kant's Analytik des Schönen*: K. F. WIZE. Vorbrodt, *Religionspsychologie, empirische Entwicklung studie religiösen Bewusstseins*: E. D. STARBUCK. Lipmann, *Über Freiheit und Zurechnung*: H. SIEBECK.

ANNALEN DER NATURPHILOSOPHIE. Band VIII., Heft 3. August, 1909. *Zur Lehre von der Kausalität* (pp. 273-294): W. H. FRANKL. - The causal judgment justified as deduced from the primary postulate, that the assumptions which lead to an increase of the sum of human knowledge are to be preferred to the assumptions through which that knowledge is decreased. *Entwurf einer allgemeinen Wertlehre auf biologischer Grundlage* (pp. 295-320): R. M. FREIENFELS. - Worth is defined as anything which conduces to the enhancement and preservation of life, whether of an individual or, in the case of conflicts between values that transcend the individual, of as many individuals as possible. *Das Willkürliche in der Welt* (pp. 321-328): A. PÖCKELS. - In the hypothetical world-formula of Laplace the constants represent the original fortuitous element. In philosophy, the fortuitous is simply the independent. *Über Beziehungen der Gele in der anorganischen Natur zu den Gelen der lebendige Substanz* (pp. 329-332): F. CORNU. *Das Biologische Gedächtnis in der Energetik* (pp. 333-361): E. RIGNANO. - An argument in favor of the central epigenetic theory in contrast to the pangenetic, leading to an explanation of will in terms of energy. *Die Hauptpunkte der Theorien der aktiven Anpassung Schopenhauers und der Lamarckianer und Neuvitalisten* (pp. 362-370): O. PROCHNOW. - Reinke's and Pauly's theories of the influence of dominants are objective restatements of Schopenhauer's theory of active adaptation. *Die Prinzipien der Energetischen Psychologie* (pp. 371-385): N. KRAINSKY. - The energy of ideas is that of the sensory impulse, solely; the greater energy of the muscular contraction is due to stored potential energy. *Neue Bücher* (pp. 386-398): W. O. HEUER, *Krausalität und Notwendigkeit*. R. Petrucci, *Essai sur une Théorie de la vie*. E. Stettheimer, *The Will to Believe as a Basis of the Defense of Religious Faith*. E. Dennert, *Naturwissenschaftlichen Zeitfragen*. A. Rey, *L'énergetique et le mécanisme*. A. Rey, *Leçons élémentaires de psychologie et de philosophie*.

Angel, James Rowland. *The Ethics of Animal Experimentation*. New York: John Lane Co. 1909. Pp. 147.

Baldwin, James Mark. *Darwin and the Humanities*. Baltimore: Review Publishing Co. 1910. Pp. xii + 118.

- Durr, E. *Grundzüge der Ethik.* Heidelberg: C. Winter. 1909. Pp. vii + 383.
- Headley, F. W. *Darwinism and Modern Socialism.* London: Methuen & Co. 1909. Pp. xv + 342. 5s.
- Houllévigne, S. *The Evolution of the Sciences.* Translated from the French. London: T. Fisher Unwin. 1909. Pp. 318. 6s. 6d.
- Heinze, Max. *Ethische Werthe bei Aristotles.* Leipzig: B. G. Teubner. 1909. Pp. 31.
- Lugaro, E. *Modern Problems in Psychiatry.* Translated by Dr. David Orr and Dr. E. G. Rows. Manchester: University Press. 1909. Pp. vii + 305. 7s. 6d.
- Ottolenghi, Raffaele. *Un lontano precursore di Dante.* Lugano, Casa Editrice del "Coenobium." 1910. Pp. xvi + 119.
- Walter, Rev. Johnston Estep. *The Principles of Knowledge.* 2 Vols. West Newton, Pa.: Johnston & Puncey. 1901. Pp. 302, 331.
- Wolf, A. *Spinoza's Short Treatise on God, Man, and His Well-Being.* Translated and edited, with an introduction and commentary and a Life of Spinoza. London: Adam and Charles Black. 1910. Pp. cxxviii + 246.

NOTES AND NEWS

PROFESSOR GEORGE SANTAYANA, of Harvard University, will give six lectures at Columbia University on "Three Philosophical Poets, Lucretius, Dante, and Goethe." Professor Santayana's program is as follows: Thursday, February 3—"Introduction, and Lucretius begun." Friday, February 4—"Lucretius concluded." Monday, February 7—"The Heritage of Dante, his Life, and Minor Works." Tuesday, February 8—"The Divine Comedy." Thursday, February 10—"Goethe's Faust; its Romantic Elements." Friday, February 11—"Goethe's Faust; the Moral of it. General Review."

PROFESSOR JOHN DEWEY, of Columbia University, will deliver six lectures on "Aspects of the Pragmatic Movement of Modern Philosophy" at John Hopkins University, January 31 to February 5. The topics of the lectures are as follows: "Motives for Philosophic Revision, Negative and Positive," "Pragmatic Tendencies in Modern Philosophy," "Phases of Present Pragmatism," "The Biological Foundations," "Equivalents in Logical Theory," "The Problem of Truth."

THE fourth congress for experimental psychology will be held at Innsbruck April 19-22, 1910. The following contributions have been announced: M. Geiger, "Ueber das Wesen und die Bedeutung der Empfindung"; A. Kreidl, "Die Funktion des Vestibulappartes"; C. von Monakow, "Aufbau und Lokalisation der Bewegungen beim Menschen"; P. Ranschburg, "Ergebnisse der experimentellen Forschung auf dem Gebiete der Pathologie des Gedächtnisses." Communications should be addressed to Professor Dr. Fr. Hillebrand, Innsbruck.

THE Société Française de Philosophie will undertake the publication of a bibliography of French philosophy under the direction of M. V. Delbos, which will comprise the titles of all works and articles published during the year which deal with the subject matter of the bibliography. It will appear once a year in one of the society's bulletins. The bibliography will be partially included in the general international bibliography undertaken at the last international congress of philosophy at Heidelberg.

THE death is announced of Professor R. Schaarschmidt, of the University of Bonn, author of works on Plato, Descartes, Spinoza and Leibniz; of Professor Arleth, of the University of Innsbruck, who has written on the philosophy of Aristotle; and of Salvatore Frapagone, professor of the philosophy of right at the University of Bologna.

THE *Rivista di psicologia applicata* proposes the formation of an association of Italian psychologists with the object of coordinating psychological study in Italy and of participating more effectively in the work of scientific congresses. The organization of the society is entrusted for the present to the *Rivista di psicologia applicata*.

At the annual public meeting of the Paris Academy of Sciences, the Binoux prizes were awarded to M. P. Duhem for all his works on the history of science, and to M. J. B. de Toni for his studies of the Italian philosophers of the fifteenth and sixteenth centuries.

PRIVATDOZENT DR. BECKER, of Bonn, has been appointed professor of philosophy at the University of Münster. Professor Marbe, of the Frankfurter Akademie für Sozial und Handelswissenschaften, has been appointed at Würzburg to succeed Professor Külpe, who goes to Bonn.

At the meeting of the Académie des Sciences Morales et Politiques on December 21 M. Emile Boutroux became president of the academy. Professor Alois Riehl, of Berlin, was elected corresponding member of the section of philosophy.

PROFESSOR J. W. BAIRD, of the University of Illinois, has been appointed professor of psychology at Clark University.

PROFESSOR E. B. TITCHENER, of Cornell University, has been made Sage professor of psychology in the same university. The position is devoted to research.

PROFESSOR ROLAND B. DIXON, of Harvard University, has been elected vice-president of Section H—anthropology and psychology—of the American Association for the Advancement of Science.

THE JOURNAL OF PHILOSOPHY

PSYCHOLOGY AND SCIENTIFIC METHODS

A SUGGESTION ABOUT MYSTICISM

MUCH interest in the subject of religious mysticism has been shown in philosophic circles of late years. Most of the writings I have seen have treated the subject from the outside, for I know of no one who has spoken as having the direct authority of experience in favor of his views. I also am an outsider, and very likely what I say will prove the fact loudly enough to readers who possibly may stand within the pale. Nevertheless, since between outsiders one is as good as another, I will not leave my suggestion unexpressed.

The suggestion, stated very briefly, is that states of mystical intuition may be only very sudden and great extensions of the ordinary "field of consciousness." Concerning the causes of such extensions I have no suggestion to make; but the extension itself would, if my view be correct, consist in an immense spreading of the margin of the field, so that knowledge ordinarily transmarginal would become included, and the ordinary margin would grow more central. Fechner's "wave-scheme" will diagrammatize the alteration, as I conceive it, if we suppose that the wave of present awareness, steep above the horizontal line that represents the plane of the usual "threshold," slopes away below it very gradually in all directions. A fall of the threshold, however caused, would, under these circumstances, produce the state of things which we see on an unusually flat shore at the ebb of a spring-tide. Vast tracts usually covered are then revealed to view, but nothing rises more than a few inches above the water's bed, and great parts of the scene are submerged again, whenever a wave washes over them.

Some persons have naturally a very wide, other a very narrow, field of consciousness. The narrow field may be represented by an unusually steep form of the wave. When by any accident the threshold lowers, in persons of this type—I speak here from direct personal experience—so that the field widens and the relations of its center to matters usually subliminal come into view, the larger pano-

rama perceived fills the mind with exhilaration and sense of mental power. It is a refreshing experience; and—such is now my hypothesis—we only have to suppose it to occur in an exceptionally extensive form, to give us a mystical paroxysm, if such a term be allowed.

A few remarks about the field of consciousness may be needed to give more definiteness to my hypothesis. The field is composed at all times of a mass of present sensation, in a cloud of memories, emotions, concepts, etc. Yet these ingredients which have to be named separately, are not separate, as the conscious field contains them. Its form is that of a much-at-once, in the unity of which the sensations, memories, concepts, impulses, etc., coalesce and are dissolved. The present field as a whole came continuously out of its predecessor and will melt into its successor as continuously again, one sensation-mass passing into another sensation-mass and giving the character of a gradually changing *present* to the experience, while the memories and concepts carry time-coefficients which place whatever is present in a temporal perspective more or less vast.

When, now, the threshold falls, what comes into view is not the next mass of *sensation*; for sensation requires new physical stimulations to produce it, and no alteration of a purely mental threshold can create these. Only in case the physical stimuli were already at work subliminally, preparing the next sensation, would whatever sub-sensation was already prepared reveal itself when the threshold fell. But with the memories, concepts, and conational states, the case is different. Nobody knows exactly how far we are “marginally” conscious of these at ordinary times, or how far beyond the “margin” of our present thought trans-marginal consciousness of them may exist.¹ There is at any rate no definite bound set between what is central and what is marginal in consciousness, and the margin itself has no definite bound *a parte foris*. It is like the field of vision, which the slightest movement of the eye will extend, revealing objects that always stood there to be known. My hypothesis is that a movement of the threshold downwards will similarly bring a mass of subconscious memories, conceptions, emotional feelings, and perceptions of relation, etc., into view all at once; and that if this enlargement of the nimbus that surrounds the sensational present

¹ Transmarginal or subliminal, the terms are synonymous. Some psychologists deny the existence of such consciousness altogether (A. H. Pierce, for example, and Münsterberg apparently). Others, *e. g.*, Bergson, make it exist and carry the whole freight of our past. Others again (as Myers) would have it extend (in the “telepathic” mode of communication) from one person’s mind into another’s. For the purposes of my hypothesis I have to postulate its existence; and once postulating it, I prefer not to set any definite bounds to its extent.

is vast enough, while no one of the items it contains attracts our attention singly, we shall have the conditions fulfilled for a kind of consciousness in all essential respects like that termed mystical. It will be transient, if the change of threshold is transient. It will be of reality, enlargement, and illumination, possibly rapturously so. It will be of unification, for the present coalesces in it with ranges of the remote quite out of its reach under ordinary circumstances; and the sense of *relation* will be greatly enhanced. Its form will be intuitive or perceptual, not conceptual, for the remembered or conceived objects in the enlarged field are supposed not to attract the attention singly, but only to give the sense of a tremendous *muchness* suddenly revealed. If they attracted attention separately, we should have the ordinary steep-waved consciousness, and the mystical character would depart.

Such is my suggestion. Persons who *know* something of mystical experience will no doubt find in it much to criticize. If any such shall do so with definiteness, it will have amply served its purpose of helping our understanding of mystical states to become more precise.

The notion I have tried (at such expense of metaphor) to set forth was originally suggested to me by certain experiences of my own, which could only be described as very sudden and incomprehensible enlargements of the conscious field, bringing with them a curious sense of cognition of real fact. All have occurred within the past five years; three of them were similar in type; the fourth was unique.

In each of the three like cases, the experience broke in abruptly upon a perfectly commonplace situation and lasted perhaps less than two minutes. In one instance I was engaged in conversation, but I doubt whether the interlocutor noticed my abstraction. What happened each time was that I seemed all at once to be reminded of a past experience; and this reminiscence, ere I could conceive or name it distinctly, developed into something further that belonged with it, this in turn into something further still, and so on, until the process faded out, leaving me amazed at the sudden vision of increasing ranges of distant fact of which I could give no articulate account. The mode of consciousness was perceptual, not conceptual—the field expanding so fast that there seemed no time for conception or identification to get in its work. There was a strongly exciting sense that my knowledge of past (or present?) reality was enlarging pulse by pulse, but so rapidly that my intellectual processes could not keep up the pace. The *content* was thus entirely lost to retrospection—it sank into the limbo into which dreams vanish as we gradually awake. The feeling—I won't call it belief—that I

had had a sudden *opening*, had seen through a window, as it were, distant realities that incomprehensibly belonged with my own life, was so acute that I can not shake it off to-day.

This conviction of fact-revealed, together with the perceptual form of the experience and the inability to make articulate report, are all characters of mystical states. The point of difference is that in my case certain special directions only, in the field of reality, seemed to get suddenly uncovered, whereas in classical mystical experiences it appears rather as if the whole of reality were uncovered at once. *Uncovering* of some sort is the essence of the phenomenon, at any rate, and is what, in the language of the Fechnerian wave-metaphor, I have used the expression "fall of the threshold" to denote.

My fourth experience of uncovering had to do with dreams. I was suddenly intromitted into the cognizance of a pair of dreams that I could not remember myself to have had, yet they seemed somehow to connect with me. I despair of giving the reader any just idea of the bewildering confusion of mind into which I was thrown by this, the most intensely peculiar experience of my whole life. I wrote a full memorandum of it a couple of days after it happened, and appended some reflections. Even though it should cast no light on the conditions of mysticism, it seems as if this record might be worthy of publication, simply as a contribution to the descriptive literature of pathological mental states. I let it follow, therefore, as originally written, with only a few words altered to make the account more clear.

"San Francisco, Feb. 14th 1906.—The night before last, in my bed at Stanford University, I woke at about 7.30 A.M.; from a quiet dream of some sort, and whilst gathering my waking wits, seemed suddenly to get mixed up with reminiscences of a dream of an entirely different sort, which seemed to telescope, as it were, into the first one, a dream very elaborate, of lions, and tragic. I concluded this to have been a previous dream of the same sleep; but the apparent mingling of two dreams was something very queer, which I had never before experienced.

"On the following night (Feb. 12-13) I awoke suddenly from my first sleep, which appeared to have been very heavy, in the middle of a dream, in thinking of which I became suddenly confused by the contents of two other dreams that shuffled themselves abruptly in between the parts of the first dream, and of which I couldn't grasp the origin. Whence come *these dreams*? I asked. They were close to *me*, and fresh, as if I had just dreamed them; and yet they were far away *from the first dream*. The contents of

the three had absolutely no connection. One had a cockney atmosphere, it had happened to some one in London. The other two were American. One involved the trying on of a coat (was this the dream I seemed to wake from?) the other was a sort of nightmare and had to do with soldiers. Each had a wholly distinct emotional atmosphere that made its individuality discontinuous with that of the others. And yet, in a moment, as these three dreams alternately telescoped into and out of each other, and I seemed to myself to have been their common dreamer, they seemed quite as distinctly *not* to have been dreamed in succession, in that one sleep. *When, then?* Not on a previous night, either. *When, then?* and *which* was the one out of which I had just awakened? *I could no longer tell:* one was as close to me as the others, and yet they entirely repelled each other, and I seemed thus to belong to three different dream-systems at once, no one of which would connect itself either with the others or with my waking life. I began to feel curiously confused and *scared*, and tried to wake myself up wider, but I seemed already wide-awake. Presently cold shivers of dread ran over me: *am I getting into other people's dreams?* Is this a 'telepathic' experience? Or an invasion of double (or treble) personality? Or is it a thrombus in a cortical artery? and the beginning of a general mental 'confusion' and disorientation which is going on to develop who knows how far?

"Decidedly I was losing hold of my 'self,' and making acquaintance with a quality of mental distress that I had never known before, its nearest analogue being the sinking, giddy anxiety that one may have when, in the woods, one discovers that one is really 'lost.' Most human troubles look towards a terminus. Most fears point in a direction, and concentrate towards a climax. Most assaults of the evil one may be met by bracing oneself against something, one's principles, one's courage, one's will, one's pride. But in this experience all was diffusion from a centre, and foothold swept away, the brace itself disintegrating all the faster as one needed its support more direly. Meanwhile vivid perception (or remembrance) of the various dreams kept coming over me in alternation. *Whose? whose? WHOSE?* Unless I can *attach* them, I am swept out to sea with no horizon and no bond, getting *lost*. The idea aroused the 'creeps' again, and with it the fear of again falling asleep and renewing the process. It had begun the previous night, but then the confusion had only gone one step, and had seemed simply curious. *This* was the second step—where might I be after a third step had been taken? My teeth chattered at the thought.

"At the same time I found myself filled with a new pity towards persons passing into dementia with *Verwirrtheit*, or into invasions of secondary personality. We regard them as simply *curious*; but

what *they* want in the awful drift of their being out of its customary self, is any principle of steadiness to hold on to. We ought to assure them and reassure them that we will stand by them, and recognize the true self in them to the end. We ought to let them know that we are with *them* and not (as too often we must seem to them) a part of the world that but confirms and publishes their deliquescence.

"Evidently I was in full possession of my reflective wits; and whenever I thus objectively thought of the situation in which I was, my anxieties ceased. But there was a tendency to relapse into the dreams and reminiscences, and to relapse vividly; and then the confusion recommenced, along with the emotion of dread lest it should develop farther.

"Then I looked at my watch. Half past twelve! Midnight, therefore. And this gave me another reflective idea. Habitually, on going to bed, I fall into a very deep slumber from which I never naturally awaken until after two. I never awaken, therefore, from a midnight dream, as I did to-night, so of midnight dreams my ordinary consciousness retains no recollection. My sleep seemed terribly heavy as I woke to-night. Dream states carry dream memories—why may not the two succedaneous dreams (whichever two of the three *were* succedaneous) be memories of *twelve o'clock dreams of previous nights*, swept in, along with the just-fading dream, into the just-waking system of memory? Why, in short, may I not be tapping, in a way precluded by my ordinary habit of life, *the midnight stratum* of my past experiences?

"This idea gave great relief—I felt now as if I were in full possession of my *anima rationalis*. I turned on my light, resolving to read myself to sleep. But I didn't read, I felt drowsy instead, and, putting out the light, soon was in the arms of Morpheus.

"I woke again two or three times before daybreak with no dream-experiences, and finally, with a curious, but not alarming, confusion between two dreams, similar to that which I had had the previous morning, I awoke to the new day at seven.

"Nothing peculiar happened the following night, so the thing seems destined not to develop any further."²

² I print the rest of my memorandum in the shape of a note:—

"Several ideas suggest themselves that make the observation instructive.

"First, the general notion, now gaining ground in mental medicine, that certain mental maladies may be foreshadowed in dream-life, and that therefore the study of the latter may be profitable.

"Then the specific suggestion, that states of 'confusion,' loss of personality, *apraxia*, etc., so often taken to indicate cortical lesion or degeneration of dementic type, may be very superficial functional affections. In my own case the confusion was *foudroyante*—a state of consciousness unique and unparalleled in my 64 years of the world's experience; yet it alternated quickly with

The distressing confusion of mind in this experience was the exact opposite of mystical illumination, and equally unmystical was the definiteness of what was perceived. But the exaltation of the sense of relation was mystical (the perplexity all revolved about the fact that the three dreams *both did and did not belong in the most intimate way together*); and the sense that *reality was being uncovered* was mystical in the highest degree. To this day I feel that those extra dreams were dreamed in reality, but when, where, and by whom, I can not guess.

In the *Open Court* for December, 1909, Mr. Frederick Hall narrates a fit of ether-mysticism which agrees with my formula very well. When one of his doctors made a remark to the other, he chuckled, for he realized that these friends "believed they saw real things and causes, but they *didn't*, and I did. . . . I was where the causes *were* and to see them required no more mental ability than to recognize a color as blue. . . . The knowledge of how little [the doctors] actually did see, coupled with their evident feeling that they saw all there was, was funny to the last degree. . . . [They] knew as little of the real causes as does the child who, viewing a passing train and noting its revolving wheels, supposes that they, turning of themselves, give to coaches and locomotive their momentum. Or imagine a man seated in a boat, surrounded by dense fog, and out of the fog seeing a flat stone leap from the crest of one wave to another. *If he had always sat thus*, his explanations must be very crude as compared with those of a man whose eyes could pierce fog, and who saw upon the shore the boy skipping stones. In some such way the remarks of the two physicians seemed to me like the last two 'skips' of a stone thrown from my side. . . . All that was essential in the remark I knew before it was made. Thus to discover convincingly and for myself, that the things which are unseen are those of real importance, this was sufficiently stimulating."

It is evident that Mr. Hall's marginal field got enormously enlarged by the ether, yet so little defined as to its particulars that perfectly rational states, as this record shows. It seems, therefore, merely as if the threshold between the rational and the morbid state had, in my case, been temporarily lowered, and as if similar confusions might be very near the line of possibility in all of us.

"There are also the suggestions of a telepathic entrance into some one else's dreams, and of a doubling up of personality. In point of fact I don't know now 'who' had those three dreams, or which one 'I' first woke up from, so quickly did they substitute themselves back and forth for each other, discontinuously. Their discontinuity was the pivot of the situation. My sense of it was as 'vivid' and 'original' an experience as anything Hume could ask for. And yet they kept telescoping!

"Then there is the notion that by waking at certain hours we may tap distinct strata of ancient dream-memory."

what he perceived was mainly the thoroughgoing causal integration of its whole content. That this perception brought with it a tremendous feeling of importance and superiority is a matter of course.

I have treated the phenomenon under discussion as if it consisted in the uncovering of tracts of *consciousness*. Is the consciousness already there waiting to be uncovered? and is it a veridical revelation of reality? These are questions on which I do not touch. In the subjects of the experience the "emotion of conviction" is always strong, and sometimes absolute. The ordinary psychologist disposes of the phenomenon under the conveniently "scientific" head of *petit mal*, if not of "bosh" or "rubbish." But we know so little of the noetic value of abnormal mental states of any kind that in my own opinion we had better keep an open mind and collect facts sympathetically for a long time to come. We shall not *understand* these alterations of consciousness either in this generation or in the next.

WILLIAM JAMES.

HARVARD UNIVERSITY.

SOME NEGLECTED PARADOXES OF VISUAL SPACE. III

POWERFUL influences have been driving most philosophical discussions of space and time into the narrow and, in my opinion, errant grooves of geometry and psychologistical biology. Beginning with his space concepts, for instance, the geometer so manipulates them, intentionally in a pure deduction, that their ultimate meaning is paradox and paradox. Likewise the biologist: he sets out with sensations and perceptions of space and, trying to find them over again in the very same spatial universe where these experiences have grown up, ends perforce in a muddle. That something may have been gained by both investigators, nobody need doubt; but the meager and irregular returns of their investment of strenuousity encourage the philosopher to strike from another angle. The following remarks would do just this. They should be looked upon as an experiment, to be judged entirely by its fruits.

I am again going to look at space, neither as a geometer nor as a psychologist of the schools. I shall not deduce the implications of certain Euclidean or non-Euclidean concepts of extension, direction, position, magnitude, etc., nor shall I inquire into the upbuilding of space *qualia* into space concepts. I shall only accept the natural space-world—the world that all ordinary persons somehow or other have come to rely upon—and, secondly, the adaptive, self-changing, specializing nervous organism, as it is known in its broader outlines

and behavior to modern biology. And I shall then ask about two striking peculiarities of this organism's adaptation to this extended world in which it must find itself: first, about the correspondence of spatial form between the retinal image of a perceived thing and the thing perceived; then about the vastly more important reflex imitation. The constant purpose, in each case, will be to discover whether an organism would be more likely to develop as our own actually have in a world which stretches out essentially as we think our world does or in a world whose spaces are all forms of consciousness—or, as I prefer to put the Kantian thought, hyperchemistries. However otiose this purpose may seem to professional epistemologists, it can not but loom large to any biologist who, be it with Driesch and Wolff or with Pauly and Francée, looks ahead to the horizon of his science, where the philosopher's sky comes down to meet it. For, if organic differentiations, particularly those involved in the development of perceptions of and reactions to visual space, can not be explained on the Kantian hypothesis of hyperchemistry, then every biologist faces a momentous dilemma. Either he must cling to the idealistic hypothesis about space, following Driesch, and cast out, root and branch, every principle of ontogenetic and phylogenetic explanation which in any wise involves the notion of spatial adaptation to a genuinely spatial environment; or else, retaining this notion and its derivative explanations, he must winnow from his faith and his literature the reams of idealistic epistemology which, through Mach, Pearson, and many other scientists, he has borrowed from a century-old metaphysic. One need not be versed in any science in order to sense the wide, long consequences of accepting squarely either alternative. The better part of theoretical biology, and not a little of similar flights in many other fields, would have to be done over again, were the dilemma accepted.

I. *Retinal Image and Perceived Form*

One of the first tricks which poor little sophomores are taught, after falling into the hands of the psychologist, is to regard as a most unhappy accident the correspondence of form between the (miscalled) retinal image and the thing seen as the result of that image's presence. "What you see," says the teacher, "has no such immediate connection with the ether vibrations which strike the periphery of your optic tract. It is some kind of nerve current which you really come to know when it gets to your cortex and does something there." And then Thomas Brown is cited. "If," he has written in his *Lectures*, "this (the shape of the nervous expanse affected peripherally) alone were necessary, we should have square inches and half-inches and various other forms, rectilinear and curvi-

linear, of fragrance and sound." And, to drive the point home, Professor James's lucid foot-note ("Principles of Psychology," II., 144) has the last say. It represents the almost unanimous conviction of contemporary psychologists and philosophers so accurately that it must be quoted.

"In the matter of *spatial* feeling, . . . it looks at first sight as if the sensation might be a direct cognition of its own neural condition. Were this true, however, our sensation should be one of *multitude* rather than of continuous extent; for the condition is *number* of optical nerve-termini, and even this is only a remote condition and not an immediate condition. The immediate condition of the feeling is not the process in the retina, but the process in the brain; and the process in the brain may, for aught we know, be as unlike a triangle (the figure used in a previous illustration),—nay, it probably is so,—as it is unlike redness or rage. It is simply a *coincidence* that in the case of space one of the organic conditions . . . should lead to a representation in the mind of the subject observed similar to that which it produces in the psychological observer. In no other case is the coincidence found. Even should we admit that we cognize triangles in space because of our immediate cognition of the triangular shape of our excited group of nerve-tips, the matter would hardly be more transparent, for the mystery would still remain, why are we so much better cognizant of triangles on our finger-tips than on the nerve-tips of our back, on our eye than on our ear, and on any of these parts than in our brain?"

Straining to its highest tension my frail will to believe, I have been able to detect not the slightest plausibility in all this, probably because I suffer from congenital realism. Laboring under the infirmities of this disease, though, I fancy I discern there three or four contentions profoundly opposed, in spirit if not in word, to thorough-going realism. And, as I am here trying out such a realism on the stubborn facts of space, its objections to Professor James's note must find voice.

1. It is not true that, if a percept were somehow a mental copy of the pattern of ether waves at the retina, multitude should be the thing or character perceived. For, if we follow the usual hypothesis and say that each rod and cone yields a sensation of extension, clearly we must admit (1) that the space between rods and cones is visually non-existent and hence can not form a visible gap between the sensed spaces; and (2) that no primordial extension *quale*, such as any single rod or cone delivers, can possibly contain empirically an awareness of its own spatial limits, but must be absolutely boundless, when viewed from inside, as it were, or by itself. To do justice to this objection to Professor James's point I must refer the reader to two previous articles in this series (this JOURNAL, Vol. VI., Nos. 22 and 24). I would urge, as a result of these studies, that the continuous extent whose presence encourages Professor James and almost everybody else to discredit the retinal image is absolutely no evidence against the latter. For every totality of simul-

taneously given extensions is, one might say, by definition a space continuum just because it consists of *all* given spaces. To suppose that *all given* spaces could be given as separate space-points is not even a possible hypothesis, but a downright contradiction; inasmuch as a given separateness is a given externality, in short a given space intervening between given space-points. Though this may sound in some ears like dialectic, I am confident that it is nothing more harmful than accurate description and loyalty to definitions where loyalty is needed for the description's sake.

2. The number of nerve-termini is not the essential condition determining the form of the retinal image, though of course it is influential in various ways. Relative position is what counts. Indefinitely many different sets of nerve-termini can be the means of yielding the same perceived form. What would be the smallest group capable of producing, say, an empirical triangle, we do not know; the behavior of *minima visibilia* in human perception makes probable that fully a dozen termini must normally be involved, and maybe twice as many. I can conceive, though, of a retina so perfectly organized that six or seven rods would do the business, and without involving any structure or function radically different from those of the human. But this is beside the point; the crux is in distinguishing the retinal determinants of perceived form from those of perceived size. The former owe their efficiency to some kind of active cross-relation—call it synthesis, if you will, provided you do not invoke some spook, like the ego, to explain it. Though all direct evidence is lacking, there is a reasonable probability that either the horizontal cells or the immensely numerous lateral fibers in the retina make known visual forms; at all events, their presence and their position relative to the rods and cones suggest their connection with no other peculiarity of visual space. To be sure, the number of nerve-termini stimulated will generally influence the form perceived and, on the other hand, the perception of size always involves the formalizing or synthetic function. Indeed, on this second matter, I incline to go the extent of saying that all perception of number and size, excepting only the two limiting cases of a single *minimum visibile* and the total field of vision, is formalizing; that is, discrete points or masses can arise only as differentiations within a group. Even random dots on a sheet of paper can be numbered only in so far as the spaces between them are sensed *as* intervening, which is to say, *as* extension groups. But there is in all this absolutely nothing precluding or even resisting the notion that the number of nerve-termini affected only secondarily determines visual forms. If these very sketchy observations are enough to substantiate my point or even to make it entertainable, a serious objection drawn from introspec-

tion goes by the board. I refer to the fact that, in perception, forms do not vary with their size; thus, a triangle may double or quadruple its area without the slightest change of contour or geometrical integrity. Here the Kantian-Wundtian investigator sometimes thinks to find a powerful argument for two indispensable theories of idealistic psychology; (1) the "creative synthesis" and (2) the localization of this high function in the brain (usually the cortex). As a matter of fact, though, these questionable and ambiguous hypotheses can derive not the least support from that source except by ignoring histology and conceiving the retina, quite antiquely, as a sieve with pores or as a mere bundle of telegraph wires spread out at their ends and brought together as a cable in the optic nerve. But this brings me to the third objection.

3. "The immediate condition of the feeling," says Professor James, "is not the process in the retina, but the process in the brain"; and this, he adds, may no more resemble a triangle than redness does. His first point may be granted, at least in so far as the present topic is concerned; but please note that it has relevance to Professor James's argument only through the further assumption that the immediate condition, the brain process, does *not* consist, at least in part, of characters transmitted unchanged from the periphery. But it is precisely this assumption that constitutes the issue raised about the correspondence between retinal image and perceived form. To appeal to it is obviously to beg the whole question. Why should anybody suppose that the distribution and number of rods and cones stimulated do not peculiarly qualify the neural current—or whatever it is that gets to the brain—and that this current is so utterly different from the electric current that its features at the point of inception go lost altogether a few inches further up the conducting tract? The question has only two general answers. One is some metaphysical theory which makes every change of relation at a given center or node of relations modify all the characteristics of that center or node. The other—and the only one which any psychologist to-day will knowingly advance—consists of empirical evidences. So far as I have been able to understand these latter, however, they all are grounded upon the crudest histology and inaccurate descriptions of visual space.

To return to the independent variation of form-quality and size, this is evidence of "creative synthesis," in Wundt's sense, and of the central *locus* of this function only by the purest postulation; which is to say, only by assuming what you want to prove, namely, that some stratum of retinal neurons does not sense geometrical patterns. Maybe it does, and maybe again it doesn't; but you are not going to decide the question, for the biologist at least, by a mere say-so in

favor of one opinion or the other. To say that you can not imagine how the retina could accomplish the feat is to aid or injure neither opinion; for if you object to immediate retinal synthesis because you can not think out its details, you must protest equally against synthesis in the cortex or by an ego. But, in a general way, retinal form-sensing appears to me a much less obscure process than that of any other visual function. For instance, may it not be that the horizontal cells sense the spatiality of the initial disturbances in rod and cone cells in a manner essentially analogous to that in which a magnetic field represents an electric field? The horizontal cell lies at right angles to the rod-cone cell system, even as the lines of magnetic force lie with respect to the electric current and its field. If, now, the ether vibrations are at bottom only a kind of electric disturbance, as physicists almost unanimously hold to-day, then we picture the retinal process quite comprehensively by supposing, in accord with all psychologists, that the three accepted characteristics of the *forward drive* determine the peculiarities of the light and color, while the *lateral drive* gives the space quality.¹ Such a conception, I am sure, would greatly simplify our stock puzzles of visual perception: to name only two, it would at least make comprehensible the odd fact that, though we never sense color without extension, we do sense extension without color in extreme peripheral vision; and it would also be an adequate physical explanation of the still more curious fact that a peripheral stimulus which yields only a colorless extension when not moved across a retinal tract, develops a color *quale* upon the slightest lateral displacement.² But, above all else, it would serve our present desire by showing that visual space-forms behave exactly as magnetic field-patterns do, in so far as the latter do not *necessarily* vary with their size nor yet with the number of electric currents cutting across and determining them. Elementary experiments in the physical laboratory demonstrate this

¹ My use of the word "drive" implies no hypothesis of ether displacement. "Stress," "tension," or "potential energy" would do as well. Whether electromagnetic phenomena are genuine ether motions or something else is irrelevant to the present hypothesis; the two essential and, I believe, undisputed points are (1) the relative direction of electric and their accompanying magnetic forces, and (2) the correlation of the two forces (every electric current sets up a magnetic field, and every magnetic field, when moved, sets up an electric current).

² To clarify these and all other interpretations springing from the hypothesis is a hard undertaking which can not be entered upon here. All that I would do here is to suggest enough about the bearings of the hypothesis so that it will not seem a "long shot" or a momentary flash of scientific fancy. I hope, in the near future, to read off in its terms a large number of established and obscure psychological facts. Whether it will stand or not, it is the *kind* of interpretation wanted.

last fact; hence I need not repeat here in detail how, for instance, by adding new electric units in the proper manner to a given electromagnetic field (most easily, of course, to the exterior of the field rather than by interpolation), the intensity of the central (original) field grows, but its pattern of stress or tension lines remains substantially what it was at first. If, now, the magnetic field is the stimulus of the space-sensing neurons, its *intensity* determines the sensed *magnitude*, while its *pattern* determines the sensed *form*. And as the intensity may be increased either by increasing the number of electric units across the field or by increasing the electric force of the units already in the field, so too the sensed magnitude may be increased either by increasing the number of rods and cones stimulated and communicating laterally with a given horizontal cell or else by increasing the stimulus in the rods and cones already involved. This second case, you will observe, roughly covers the phenomena of irradiation and possibly many illusions of size, particularly pathological macropsia and micropsia.

Though I believe the above hypothesis gives the clue to an explanation of space vision, I do not argue it here. It may be quite wrong. I cite it merely to show the easy conceivability of putting all fundamental qualities of seen space in the peripheral sense organs. And, be it recalled, my motive in showing this much is to forestall an overhasty appeal to central synthesis or to *a priori* forms of experience. To attribute to such transcendent functions or entities the moulding of psychic complexes which indubitably *seem* to be given no less objectively than sunlight is—to do this, I say, before having tried to correlate those complexes with well-authenticated, observable differences in stimuli and in peripheral structure, may be pleasant metaphysics, but it is assuredly bad scientific method. A grosser violation of the law of parsimony there could scarcely be.

4. Genetic psychology has advanced so far, since Professor James's classic "*Principles*" first appeared, that his last objection to the correspondence between retinal image and perceived form probably is less generally approved than it once was. Professor James himself may, for aught I know, long since have stricken it from his platform. I shall consider it here, though, because it introduces us gradually to the supreme issue which the following study of reflex-imitation grazes, namely, the controversy over the prior right of psychology or of biology to found our theories of reality and conduct. "Grant," says the psychologist, "that the eye does cognize retinal patterns. The mystery is as deep as ever. Why, as Professor James puts it, are we so much better cognizant of triangles on our finger-tips than on our back, on our eye than on our ear? And why, as Thomas Brown puts it, do we not smell octagons and hear tetra-

hedrons?" These are provincial queries, difficulties which arise only if one refuses to look beyond the traditional confines of psychology for answer to problems within them. One glance at biology and its concepts of evolution makes nonsense of such doubts. No matter what or why or how evolution is, in any case it can readily account for the absence of square odors and curving sounds from human experience. Indeed, it makes them vastly more intelligible in their missing than in their appearance. The sense of touch is, by pretty general acceptance, the primordial one and, as will be pointed out more fully later, its earliest development seems to have been toward a space sense. From the naturalistic point of view, this was a first exigency, inasmuch as the sensitive organism lived in a really extended world to whose spatially marked differences it had to adjust itself. The organic medium of sensitivity of space had to develop at the point of contact with alien spaces, but nowhere else; hence the more or less distinct feelings of extent and position from all stimuli of the body's surface (including the alimentary canal) and the pretty uniform absence or exceeding vagueness of such feelings in connection with stimuli beginning anywhere inside one's skin. To the biologist, this cleavage suggests the thoroughly objective nature of space, though not necessarily a "copy theory" about our experiences of space. But—what concerns us much more deeply here—the common spatiality of peripheral sense-products, far from rendering more likely the same development of space *qualia* in all specialized sense organs, makes this outcome the least probable of all, under any evolutionary hypothesis whatsoever. We should expect one or two organs to grow toward the more complete knowing of space structures, while another attunes itself to one peculiarity of matter, another to some other cosmic character, and so on. Allow the right of such anticipation, and the correspondence between retinal image and perceived form shows up as no odd accident, but rather as a step toward more perfect representation of its environment by an organism; and the absence of a correspondence between the geometrical pattern of auditory nerve-termini and the harmonious sound they yield only confirms superfluously what we all know, to wit, that the basilar membrane, and its colleague neurons, are engaged in selecting and reacting to some cosmic peculiarity other than extension.

I do not believe many persons, even among those who deny the significance of the correspondence we have been considering, will hold out with Thomas Brown or Professor James against the biologists. It will be generally conceded that there is no mystery in a specialist knowing space as lay brethren know it not. But, unfortunately, the biologists' contention, granted in such trifling matters, is ignored in the greater issues. "Perhaps," says the psychologist,

"Darwin and his clan can force me with their principles to grant my eyes unique space-sensing powers. But by that they have not wrung from me a confession that the spaces I perceive exist apart from my nerves. If my friend, Smith, can turn his ophthalmoscope into my eye and detect there an image having a shape like the shape of the object I am at the same instant perceiving, that indicates only that, for the sake of the more accurate or the more useful *a priori* synthesis or mental creation, the spaceless vital force which is my self has so moulded itself—spacelessly, of course,—that one detail of its structure has one phenomenal quality somewhat like a quality concocted by my self in noumenal conjunction with *Ding an sich*." Whether in this Koenigsberg jargon or not, almost every psychologist, not excepting those who pursue the genetic method, is to-day championing this intrinsically idealistic doctrine, while the more philosophical are explicitly denying, with lengthy proofs, that perception is, in *any* sense whatever, a copying function. So long as they stay at home dissecting their own minds, these thinkers get along passably. But when they crave, as all of them do, sooner or later, to know how their minds came to be what they are, and in the remarkable bodies they inhabit, they unhesitatingly fall back upon various principles such as "adaptation," "socialization," "differentiation," "natural selection," and the like. So be it. How can they do this, though, yet clinging to a belief in an unextended ego living in an unextended world? If space is not real, substantially as the ordinary man thinks it is, but a hyperchemical product of ego and world; and if the latter "elements" no more resemble space than oxygen and hydrogen do water, what and why is "adaptation," what the utility of inventing space with all its wearying distances, its inaccessible heights, perilous abysses and most vexatious antinomies? Men like Driesch and Bergson, scenting this danger from afar, have sought to meet it with a general metaphysical biology, which, like most ventures metaphysical, exhibits astounding skill in picking out facts that fit and overlooking most others. It is the realist's privilege, when, on metaphysical ground, to favor himself in the same liberal spirit. Out of scores of homely facts, therefore, I shall pick but two, the retinal image and reflex imitation, both especially convenient; and I shall inquire, in the next paper, how a psychologist can at the same time be an idealist in his theory of perception and any kind of an evolutionist in his theory of the origin and shaping of the organs of perception.

WALTER B. PITKIN.

COLUMBIA UNIVERSITY.

THE TREATMENT OF "OPPOSITION" IN FORMAL LOGIC

THOUGH a number of good text-books and elementary treatises on formal logic have recently appeared, the subject of the "opposition of propositions" is still usually put before students in a form very similar to that in which Aristotle left it. But that form is conspicuously deficient in clearness, precision, and systematic completeness. It is as if the syllogism were treated merely in a vague and general way, with no rules more detailed than the *dictum de omni*, no distinctions of mood and figure, no attempt at a complete enumeration of valid moods. In other words, the logical principles justifying the so-called "square of opposition" are, in no text-book known to me, definitely and lucidly worked out. The consequence is that college students commonly have difficulty in seeing the *why* of the relations with respect to joint truth or joint falsity that hold good between contraries, contradictories, and sub-contraries; and many students, unable to reason through for themselves the logical necessities involved, merely stow away the "square" in their memories, upon the authority of book or lecturer—the one thing absolutely inexcusable in the study of formal logic. There is, however, a way (and, I think, only one way) of presenting the subject with system, precision, and complete self-evidence; and the logically adequate mode of presentation is also, experience leads me to believe, the pedagogically effective way, even with quite immature students. The matter is obvious enough, and the method in question is, no doubt, used by many teachers of logic; but it seems worth while to call attention to it in print, in the hope that it may come to be more generally used, both by teachers and by writers of text-books.

A. *The Number of Possible Relations between the Denotations of Any Two Terms.*—It is well known, and it is easy to demonstrate (though many text-books conceal the fact as if it were a dark secret), that there are five, and only five, conceivable relations of mutual inclusion or exclusion between two terms; and that any two terms whatever must, with respect to their areas of denotation, stand to each other in some one of these relations. In the concise phrasing of Venn: "Given one class as known and determined in respect of its extent, another class, also known and similarly determined, . . . can coincide with the former, can include it, be included by it, partially include and partially exclude it, or entirely exclude it. In every recognized sense of the word, these are distinct relations, and they seem to be the only such distinct relations which can possibly

exist."¹ To formulate this more fully: if *S* and *P* be two terms whose denotation is *not* known, it is possible that they may hold to one another any one of the following relations, but it is not possible that they hold none of these relations:

1. All *S* may be all *P*; *i. e.*, the two areas of denotation may be coextensive.
2. All *S* may be merely some (and not all) *P*.
3. Some *S* may be all *P*.
4. Some *S* may be merely some *P*, while some of it is not *P*.
5. No *S* may be any *P*.

These relations would be graphically exhibited, in the usual manner, as follows: (1) By a diagram in which circle *S* and circle *P* are coextensive; (2) by a diagram in which circle *S* is within *P* and of less extension; (3) by a diagram in which circle *P* is within circle *S* and of less extension; (4) by overlapping circles, and (5) by mutually exclusive circles. It is to be observed that these formulas and diagrams express absolutely unequivocal situations—so far, at least, as is possible when the only quantitative distinction to be taken into account is that between whole and part; further, that with respect to the real relations of any two terms, the situations given are reciprocally exclusive as well as jointly exhaustive. In other words, the actual denotations of any two terms not only must be related in one of these ways, but also, they can not be, in fact, related in more than one.

B. The Import of the Four Types of Categorical Propositions with Respect to the Denotative Relations of their Terms.—The ordinary categorical propositions are, with one exception, notoriously incapable of expressing unequivocally the relations of their terms with respect to mutual inclusion or exclusion. What this means is that a given proposition known to be true does not enable us to know which *one* of the possible relations of the subject and predicate—in one of which, and one only, those terms really stand—is the actual relation. One who affirms such an equivocal proposition affirms merely that the two terms in question are related in one or another of two or more enumerable ways, and that the terms are not related in certain other ways (implicitly) excluded from that enumeration. Consequently, to make explicit in a perfectly clear

¹ Venn, "Symbolic Logic," 1894, pp. 5 ff. Venn cites several earlier writers who have noted this fact and insisted upon its significance for the clear explication of the denotative import of ordinary propositions, and ascribes the earliest statement of it to Gergonne. Says Schröder ("Vorlesungen über die Algebra der Logik," 1891, Bd. II., 106): "These five relations were perceived by no one, from Aristotle's time down to the beginning of the nineteenth century (1816), when, so far as is known, they were first explicitly brought to light by Gergonne."

and systematic manner the denotative import of each of the four types of categorical proposition, it is necessary to enumerate, in the case of each, all of the real situations compatible with the truth of the proposition. In other words, to understand what, in extension, the *A* proposition means, we must set down every relation between *S* and *P* which, if real, would justify the affirmation of *A*. Proceeding to this enumeration, we get the following result:

The *A* proposition is compatible with the reality of either relation (1) or (2); *i. e.*, one who affirms *A* declares that either relation (1) or else relation (2) is the actual fact; that, however, only one of these is actual; and that no other relation (of the five) beyond these two is actual. The *I* proposition is compatible with either (1) or (2) or (3) or (4); *i. e.*, whoever affirms it, declares that one or another of these relations is actual; that, however, only one of them is actual; and that no other relation is actual. With *E*, only relation (5) is compatible. With *O*, relations (3), (4) and (5) are compatible. In all the equivocal cases, it should be clearly understood, the relations enumerated as compatible with the given proposition are not jointly affirmed, nor is any one specifically affirmed. What the proposition most definitely affirms is the unreality of all the relations *not* enumerated under it; with respect to those enumerated, it virtually bids us hold our judgment in suspense. If students are to be taught to regard propositions as giving them any information at all about the comparative denotations of subject and predicate, they should be taught (as, in text-books, they usually are not) precisely and comprehensively what that information in each case is. In short, the foregoing seems to me the only sound way of presenting the doctrine of the denotative import of propositions.

C. Application of the Foregoing Principles to the "Opposition of Propositions."—In the light of the principles just set forth, it is possible to formulate rules of self-evident necessity, covering the possibility of joint truth or joint falsity of any two propositions having the same matter but differing in form. To frame these rules, it is needful only to glance at the lists of real relations compatible with the truth of each type of proposition—remembering that, so far as the proposition shows, *any* one of the relations enumerated under it is equally likely to be the one real relation; that no relation not enumerated under a given proposition admits of the truth of that proposition; and that, since any two terms must be related in one or another of the five ways, no pair of propositions can be jointly affirmed (or denied) if that would imply, for any two terms, the unreality, with respect to them, of *all* five denotative relations. The rules, then, are obviously as follows (letting the term "case" stand for "possible real relation of mutual inclusion or exclusion between the given subject and predicate"):

I. Where all the cases compatible with a given proposition are also compatible with another proposition (having the same matter), the truth of the latter may be inferred from the truth of the former.

II. Where only *some* of the cases compatible with a given proposition are also compatible with another proposition, from the truth of the former we can not infer that the latter is true, but as little can we infer that it is not true, *i. e.*, it remains doubtful.

III. Where two propositions are compatible with no common cases, from the truth of either the falsity of the other may be inferred.

IV. Where two propositions are compatible with no common cases, but between them exhaust all five possible cases, from the falsity of either the truth of the other may be inferred.

Examining the several propositions with these rules in mind, we see, for example, that Rule I. covers the relation of *A* to *I*, since both cases enumerated under *A* (1 and 2) are also enumerated under *I*. Hence, if *A* is true, *I* is true. Rule III. covers the relation of *A*'s truth to both *E* and *O*, since *A* has no cases in common with either of them; hence, if *A* is true, *E* and *O* are false. Rule IV. covers the relation of either *A* or *I* to *O*, since, if the cases compatible with either *A* or *I* be added to those compatible with *O*, all five conceivable cases will appear in the enumeration. Hence, neither *A* and *O*, nor *I* and *O*, can both be false; if one of either pair is false, the other must be true. In like manner, all the results set forth in the books under the name of "opposition" can be worked out.

This may at first seem longer and more complicated than the usual way of setting forth the subject. Even if it were so, it would be a preferable way; for it has, what the customary mode of exposition seems to me to lack, the merit of completeness of demonstration, and that sort of clarity for the understanding which comes only with the sense of having looked a problem through and through, from foundation to top, and of having noted everything pertinent that there was to note about it. And, in fact, the matter is, for teaching purposes, extremely simple to present. It requires only the drawing of five circle-diagrams; the assignment of a conventional number to each diagram; and then the setting down, opposite each type of proposition—*A*, *I*, *E* and *O*—of the list of cases compatible with it. The rest *saute aux yeux* of any fairly intelligent student. Indeed, the three topics here dealt with—under sections *A*, *B* and *C*—may best of all be given students in the form of problems to be worked out by themselves. There are, after all, great compensations in the fact that some important principles and interesting chapters of formal logic are left out of most of the books in current use as college texts. For the ideal teaching of logic would assuredly dis-

pense with text-book expositions for all parts of the subject, and would invite students to repeat, and improve upon, the adventure of Aristotle—with only the aid (but the enormous aid) of clearly formulated statements of the next things to be looked for at each point—and, perhaps, for the duller wits, a little lifting over one or two *pontes asinorum*. No other object of study lends itself so perfectly to this pedagogical method.

Nothing that has been here said is meant to prejudice any of the ulterior questions of logical theory. Though I do, in fact, think it an error to maintain (as Mr. H. B. W. Joseph has most recently done) that “the predicate of a proposition is not thought in extension,” I do not suppose that those who hold that view would deny that propositions may, for elementary pedagogical purposes, be treated as having a denotative import with reference to both their terms. At all events, in much current teaching, and in the most widely used manuals, they *are* so treated. And so long as this is done, it seems desirable that all the facts about their denotative import, and the immediate inferences which are justified by those facts, should be set forth in a logically cogent and a logically complete manner.

A. O. LOVEJOY.

THE UNIVERSITY OF MISSOURI.

REVIEWS AND ABSTRACTS OF LITERATURE

La définition de l'être et de la nature des idées dans le Sophiste de Platon.

AUGUSTE DIÈS. Paris: Felix Alcan. 1909. Pp. a-c + vii + 140.

The scope of this admirably conducted inquiry is sufficiently indicated by the title. Like his countrymen, M. Piat and M. Brochard (*L'Année Philosophique*, 1907), M. Diès holds, as against the majority of German scholars, that the *Sophist* does not present a new view of reality, which sets it in opposition to the so-called “earlier” dialogues of Plato. He is, however, fully aware of the difficulties raised by the discussions of the *Sophist* and conscientiously sets them forth. It is clear that in this dialogue a certain shift is observable in the direction of Plato's interest, in that concrete reality is accorded a higher value than in his earlier thought. This observation led many scholars in former years—and there still remain a few of that persuasion—to regard the *Sophist* as an expression of the thought of Aristotle, since he too tended to think of the concrete as possessing the greater reality. But every student of Aristotle must soon become aware that the Stagirite was hopelessly divided, attaching supreme value now to the concrete, now to the abstract, and consequently failing to harmonize his system of thought. The same implicit contradiction is apparent in all the maturer works of Plato, the *Republic*, *Philebus*, and *Laws*, no less than the *Sophist*. In all these dialogues Plato

sought—ineffectually, to be sure, but none the less sincerely—to mediate the Ideas back to concrete reality; but the Ideas still remained for him, in the *Sophist* as truly as in the *Republic*, as the expression of supreme reality. Once this fact is noted and its significance apprehended, it is clear that Aristotle could not have written the *Sophist*; for in his *Logic*, which is his earliest systematic work, the dualism in Aristotle's thought is fully, even painfully, apparent.

It is impossible here to discuss at length the argument of M. Diès. He shows familiarity with the German literature of his subject, but singularly enough appears to have no knowledge of the strongest presentation of the essential unity of Plato's thought, which is his main thesis. I refer, of course, to Professor Shorey's "The Unity of Plato's Thought," Chicago, 1903. The proof-reading, especially of the Greek texts, as shown by two pages of *Errata* appended and still incomplete, appears to have been done after the book was printed. M. Diès would have done better in discussing Platonic terms to have inserted the Greek words consistently.

W. A. HEIDEL.

WESLEYAN UNIVERSITY.

Text-Book of School and Class Management: Theory and Practise.

FELIX ARNOLD. New York: The Macmillan Company. 1908. Pp. xxii + 409.

Education, it is asserted in the preface to this volume, is still in the age of lean kine, and management is one of the leanest. Recent books which have appeared show the inadequacy of the older treatments, and a complete text-book is still lacking. The present volume aims so far as possible to meet this lack.

For the practical aspects of the subject the author has depended upon "his own tested experience" and "that of progressive teachers and principals" whom he has had the good fortune to know. For the theoretical aspects he has consulted the "best authorities" (a very remarkable list—a list indicative of a vast amount of reading!) and "has sought first-hand information at every point." The chief obligation, it is stated, is to the works on "Mental Development" by Professor Baldwin. Management of a school refers "to its control by governing officials. It implies direction and support by school boards. It presupposes cooperation between principal and teachers. It necessitates contact between teacher and pupils, and pupils and principal." This forms the material of the discussion. The present volume deals with the subject of "cooperation between principal and teacher, and class management." Separate volumes will be devoted to a discussion of (1) organization, classification, the health of the child, school hygiene, and the school boards, (2) general method in instruction. Each volume of the series will be complete in itself. This first volume, "School and Class Management," treats the subject in remarkable detail. There are the two parts (1) Principal and Teacher, (2) Teacher and Child, developed through twelve chapters. After a discussion of the respective functions of the teacher and principal there is

considered the question of their cooperation in *Instruction, Discipline, Supervision*, under the headings general means, special means, approved and disapproved, individual *versus* uniform methods of instruction, misconceptions of cooperation. The teacher and child are considered in part two—and again in very great detail. The concluding chapters are entitled, The Nature of Conduct, the Sanctions of Conduct, the Kinds of Conduct, the General Development of Conduct, the Special Development of Conduct.

JOHN ANGUS MACVANNEL.

TEACHERS COLLEGE, COLUMBIA UNIVERSITY.

JOURNALS AND NEW BOOKS

REVUE DE PHILOSOPHIE. November, 1909. *Biologie scientifique et transformisme* (pp. 481–500): H. DRIESCH. – The principal problem of systematic biology (not biology of classification) is the scientific explanation of individual differences, accidental variation. Neither the Darwinian or Lamarckian theory, both of which attribute such variation to chance, affords a solution of the problem. The principle may, however, be explained on the basis of entelechy. *Le désir et la volonté selon Saint Thomas d'Aquin* (pp. 501–515): A. D. SERTILLANGES. – The tendency to become some person other than the self is desire or appetite. This fact implies a power and a receptivity: desire is based upon actual lack and potential abundance. Volition is an appetite, the object of which is *bonum in universali*. *La pédagogie nouvelle* (pp. 516–527): G. JEANJEAN. – The new pedagogy—i. e., pedology—is a complex of psychology and the old-fashioned pedagogy. The development of the science in America, England, and on the continent is noted. *A quoi servent les laboratoires de psychologie?* (pp. 528–539): L. M. BILLIA. – In spite of a certain value the psychology laboratory exhibits certain fundamental defects: (1) the study of consciousness as determined by physiological, physical, and chemical conditions results in the destruction of psychology as such and the apotheosis of the physical sciences; (2) the consideration of the limits of our powers of feeling, intellect, and volition leads us to forget free-will and the power of extending the possibilities of feeling, intellect, and volition; (3) the worker in the laboratory tends to treat of psychology as a curiosity, an object of pure experimental research rather than as a part of life. *L'objet de la métaphysique* (pp. 540–546): T. LAURET. – Metaphysics is merely to be distinguished, not separated, from the sciences, and it is to be viewed as the “first science.” Science, in the ordinary sense of the term, rests upon a metaphysical, extra-experimental basis; metaphysics, on the other hand, must have a scientific, experimental basis. *L'habitude* (pp. 547–554): G. SEMBEL. – The Aristotelian and Cartesian theories of habit are correct as far as they go, but the true nature of habit is exhibited by a combination of the theories. Inertia, inactivity, possibility, is an essential condition of habit, but in order that this quality may be utilized and directed an active principle is requi-

site. Habit serves (1) to attenuate consciousness and (2) to diminish effort. *Analyses et comptes rendus*: Hobbes, *Leviathan*: H. OLLION. G. F. Lipps, *Mythenbildung und Erkenntniss*. K. Joël, *Der freie Wille. Eine Entwicklung in Gesprächen*: E. GHERZI. G. Zuccante. *Socrate*: H. TROUCHE. A. Meyer, *Etude critique sur les relations d'Erasmus et de Luther*. R. Bagardjon, *Schopenhauer der Philosoph des Optimismus*: H. OLLION. H. Arnheim, *Kant's Lehre vom "Bewusstsein überhaupt" und ihre Weiterbildung bis auf die Gegenwart*: H. OLLION. *Notes bibliographiques. Recension des revues. Chronique. L'enseignement de la philosophie dans les universités.*

REVUE NEO-SCOLASTIQUE. November, 1909. *Pour lire en psychologue la vie des saints* (pp. 505-536): C. ALIBERT. - Holiness confers upon the saint a clearer and truer vision of the creatures and of their relation to their Creator. *La théorie des moyennes et son emploi dans les sciences d'observation* (pp. 537-569): J. LOTTIN. - An examination of the different classes of averages and an inquiry into the sphere of their application. *Le sentiment de l'effort. L'effort volitionnel* (pp. 570-581): L. VANHALST. - The object of volitional effort is to will a good and to resist an evil. It resolves or tends to resolve a state of indecision. It is always voluntary, but not always free. *Mélanges et documents: Les "Sententiæ" de Gandulphe de Bologne ne sont-elles qu'un résumé de celles de Pierre Lombard?* (pp. 582-599): J. DE GHELLINCK, S.J. - Gandulph's work is in part independent of, and in part directly taken from, Peter the Lombard's "Books of Sentences." *Le testament philosophique de M. Naville* (pp. 600-607): G. LEGRAND. - An analysis of Naville's last work: "Les systèmes de philosophie ou les philosophies affirmatives." *Le mouvement philosophique en Amérique* (pp. 607-619): J. B. CEULEMANS. - A historical sketch of the philosophical movement in this country, chiefly taken from van Becelaere's "La philosophie en Amérique." *L'idée organique de l'Université* (pp. 619-624). - A fragment of a speech delivered by Ladeuze in Louvain University on October 19th. *Comptes-rendus*. H. Dehove, *Essai critique sur le réalisme thomiste, comparé à l'idéalisme kantien*: P. SCHEUER, S.J. F. Klinke, S.J., *Der Mensch. Darstellung und Kritik des anthropologischen Problems in der Philosophie Wilhelm Wundts*: P. M. M. Führich, S.J., *Rechtssubjekt und Kirchenrecht*: P. HARMIGNIE. L. Davilé, *Leibniz historien*: D. R. A. Léon, *Les Eléments cartesiens de la doctrine spinoziste sur les rapports de la pensée et de son objet*: J. H. Morales et Religions: TH. VAN TICHELIN. G. Vorbrodt, *Beiträge zur religiösen Psychologie: Psychobiologie und Gefühl*: J. ENGERT. J. T. Beysens, *Allgemeine Zielkunde*: P. M. Mgr. Baudrillart, *Les Universités catholiques de France et de l'étranger*: L. NOËL. *Chronique philosophique. Sommaire idéologique des ouvrages et revues de Philosophie.*

ANNALEN DER NATURPHILOSOPHIE, Band VIII., Heft 4. November, 1909. *Das Geschäft als Wissenschaft* (pp. 399-412): O. NAGEL. - In commerce and industry general principles are arrived at by the same method as in experimental science. *Die Prinzipien der ener-*

getischen Psychologie (pp. 413-470): N. KRAINSKY. - The term energy is applied in characteristic ways to the "ego" and to the several phases of consciousness, and equivalence is asserted between the stimulus and its effects in sensation and imagination, without clarification of the problem what common meaning may lie under these two applications of the term energy, and how equivalence may be demonstrated. *Grund und Ursache* (pp. 471-476): W. H. FRANKL. - Two short notes. *Über Kometen als kosmische Analytiker* (pp. 477-482): V. GOLDSCHMIDT. - Comets set glowing the matter suspended in interplanetary space, revealing its varied composition. *Die Naturphilosophischen Anschauungen im altindischen Denken* (pp. 483-494): R. STUBE. - The doctrines of Kapila, a realist and dualist, and of Kanada, a materialist. *Über den analytischen Charakter des Existenz-theorems in der reinen Mathematik* (pp. 495-502): H. BERGMANN. - For logistical mathematics existence means merely absence of contradiction. *Neue Bücher* (pp. 503-506): W. O. HANS DRIESCH, *The Science and Philosophy of the Organism*. Kurt Lasswitz, *Seelen und Ziele. Beiträge zum Weltverständnis*. M. Apel, *Kommentar zu Kants "Prolegomena"*. K. Braeunig, *Mechanismus und vitalismus in der Biologie des neunzehnten Jahrhunderts*.

REVUE DE METAPHYSIQUE ET DE MORALE. November, 1909. *Sociologie religieuse et théorie de la connaissance* (pp. 733-758): E. DURKHEIM. - Our categories play a preponderant rôle in our thought, and as all our civilization is condensed in them, no object is more appropriate for philosophic study. *La philosophie de Jules Lagneau* (pp. 759-807): G. DWELSHAUVERS. - A systematic, objective study and a brief appreciation of Lagneau's philosophy. *La nature de la pensée logique* (pp. 808-823): K. B.-R. AARS. - An attempt to establish for scientific thought the distinction between cause and ground or reason. Four notions of cause are distinguished. *Correspondance inédite de Ch. Renouvier et de Ch. Secrétan (Suite)* (pp. 824-835). - The continuation of a personal correspondence interspersed with philosophic comments. *Etudes critiques. La Morale des Idées-Forces*: L. WEBER. *Le VI^e Congrès international de Psychologie. Tables des matières. Supplément*.

REVUE PHILOSOPHIQUE. December, 1909. *La prééminence de la main droite: étude de polarité religieuse* (pp. 553-580): R. HERTZ. - The differentiation of the sides of the body is a particular case and consequence of the dualism inherent in primitive thought. *Autour du problème de la connaissance* (pp. 581-604): A. CHIDE. - The author draws pluralistic consequences from our failure to solve adequately the epistemological problem. *Du caractère psychologique des idiotismes* (pp. 605-625): R. DE LA GRASSERIE. - English idioms are the result of materialistic concepts and successfully avoid the animisms implied by those of European languages. *Revue générale. Sociologie criminelle*: G. RICHARD. *Analyses et comptes rendus*. Boex-Borel, *Le pluralisme*: A. REY. Windeland, *Die Philosophie im Deutschen Geistesleben des XIX. Jahrhunderts*: J.-H. JUQUET. C. Henry, *Psychobiologie et énergétique*: A.

- REY. Alber, *De l'illusion*: TH. RIBOT. F. Tönnies, *Die Sitte*: G. L. DUPRAT. E. Ettinger, *Das Verbrecherproblem*: G. L. DUPRAT. Radulescu-Motru, *Pulterea sufleteasca*: G. ASLAN. *Revue des périodiques étrangers*.
- Carreño, Pedro Maria. *Filosofía del Derecho*. Tomo 1. *Ética y Derecho individual*. Bogota: Imprenta de La Luz. 1909. Pp. 239.
- Croce, Benedetto. *Problemi di estetica e contribuiti alla storia dell'estetica italiana*. Bari: Guis. Laterza e Figli. 1910. Pp. viii + 513.
- Haddon, A. C. *The Races of Man and their Distribution*. London: Milner & Co. Pp. x + 126.
- Hall, G. Stanley, and others. *Proceedings of the Child Conference for Research and Welfare, held at Clark University in connection with the celebration of its twentieth anniversary, Worcester, Massachusetts, July 6-10, 1909*. New York: G. E. Stechert & Co. Pp. xvi + 257. \$1.50.
- Lemaitre, Aug. *La vie mentale de l'adolescent, et ses anomalies*. Saint-Blaise: Foyer Solidariste. 1910. Pp. 240.
- Lorentz, H. A. *The Theory of Electrons and its Applications to the Phenomena of Light and Radiant Heat*. Leipzig: B. G. Teubner. London: David Nutt and Williams and Norgate. 1909. Pp. iv + 332.
- Ottolenghi, Raffaele. *Un Lontano Precursore di Dante*. Lugano: Casa editrice del Cænobium. 1910. Pp. 135.

NOTES AND NEWS

THE following summary of papers read before the Anthropological Society of Washington is from *Science* for January 28:

"At the 439th meeting, January 4, 1910, Dr. Aleš Hrdlička, of the National Museum, exhibited a cast of the lower jaw of *Homo heidelbergensis* donated recently to the National Museum by Professor Schoettensack, of Heidelberg University. This jaw, which is preserved at the university and has been described in detail by Professor Schoettensack, was found less than two years ago near the village of Mauer, 10 kilometers southeast of Heidelberg, under nearly 75 feet of loess and ancient river sand. It dates from the Upper Pliocene or the very beginning of the Quaternary period and represents the most ancient being known that can be regarded as man. To illustrate the remarkable characteristics of this jaw Dr. Hrdlička showed a number of mandibula of different anthropoid apes along with those of recent man. The paper was discussed by Messrs. Theodore Gill, G. M. Kober, D. S. Lamb, Daniel Folkmar and others.

The remainder of the evening was devoted to an address by Dr. W J McGee, on "Conservation in the Human Realm." The speaker said that the human realm may best be defined in terms of relation to the other great realms in nature; and these are most conveniently stated in the

order of increasing complexity, which may be considered also the order of sequence in cosmic development.

The initial realm is that pertaining to cosmic bodies and their interrelations; the fundamental principle comprises the actions and reactions of gravity, impact, etc., which together have been denoted molarity; the field is largely covered by astronomy, with a part of physics. The second realm pertains to atomic and certain molecular interrelations; its fundamental principle is affinity; and its field coincides fairly with chemistry. The third realm is that of organic activity; its principle is vitality, which directly and indirectly accelerated and multiplied the chemical differentiation of the earth-crust; its field is covered by a large part of biology, with cognate sciences. The fourth realm (which is closely allied to the preceding) pertains to those organisms so complete in themselves as to be self-active; its principle is motility; and its field is covered by zoology and allied branches of knowledge. The final realm is that in which motile organisms are so completely self-active as to react upon and dominate lower nature; its principle is mentality; and its field is anthropology in all of those aspects resting on a psychic basis. Now the entities proper to the several realms coexist and interact; and in general the entities of each higher realm dominate over all those of the lower realms. This is especially true of mentality, which employs motility and directs vitality to control affinity and morality, thereby making conquest over lower nature for human welfare. In the power of mentality human strength lies, while danger also lurks; for the power may be, and in the absence of constraint often is, used for the destruction rather than mere subjection of the materials and forces of nature. Viewed broadly, the exercise of control over the realms of lower nature pertains to the human realm no less than do the more passive attributes of mankind."

THE reviewer in *The Nation* (January 20) of "Transactions of the Asiatic Society of Japan," Vol. XXXVI, Parts II. and III., writes as follows:

"The gem in this collection of papers is Walter Dening's review of three volumes on the Confucian philosophy in Japan by Professor Inouye Tetsujiro, of the Imperial University. In these volumes, the result of eight years of labor, we have an exhaustive and trustworthy history of Japan's three great schools. No one can understand the Japan of to-day without some knowledge of the philosophy, which for above twelve centuries has moulded the mind of Japan, producing, besides other fruits, that high moral standard of everyday life with which foreigners accustomed to associate with Japanese gentlemen are so familiar. More immediately potent in furnishing the finest specimens of Japanese humanity, and particularly in equipping those minds which shaped the interior potency of the empire before Commodore Perry and which since have directed Japan's modern career, is the Oyomei philosophy. This was founded by the last of the great Chinese philosophers (1472-1529), who broke loose from the authority of the ancients and claimed the right to interpret nature and its laws in his own fashion. By the Oyomei system, the lack of idealism in the Japanese mind is corrected, as also its tendency

to a narrow practicality. No other such lucid exposition of Japanese philosophic thought exists."

THE Western Philosophical Association and the North Central Section of the American Psychological Association will hold meetings at the University of Iowa, Iowa City, on Friday and Saturday, March 25 and 26, 1910. Separate sessions will be held Friday afternoon and Saturday morning, and a joint session Saturday afternoon. Friday evening there will be an address by the President of the Western Philosophical Association, Professor Carl E. Seashore. Titles of psychological papers should be sent to W. D. Scott, 721 Colfax St., Evanston, Ill.; titles of philosophical papers to B. C. Ewer, 614 Clark St., Evanston, Ill. Papers should not exceed twenty minutes in length. One session of the Western Philosophical Association will be devoted, at least in part, to the question of the proper contents and method of a course in Introduction to Philosophy. It is expected that the general subject of the joint session will be the Practical Applications of Psychology, Legal, Commercial and Therapeutic.

THE firm of B. G. Teubner in Leipzig has undertaken the publication of the complete works of the mathematician Leonard Euler, under the editorial supervision of Professor Rudio, of Zurich, and Professors Krozer and Stöckel, of Karlsruhe. The edition will fill forty three quarto volumes; volume 1, algebra, edited by Professor Heinrich Weber is promised for the current year.

PROFESSOR HUGO MUNSTERBERG, of Harvard University, delivered, on January 21, 1910, the second of the series of lectures being given during the college year by the Omega chapter of the Sigma Xi Society, at the Ohio State University, Columbus, O. He spoke on "The Psychologist in the Courtroom."

A DINNER was given on January 18 in honor of Professor William James, on which occasion a portrait of Professor James was presented to the University by members of the division by the visiting committee. The painting, by Miss Ellen Emmet, is of three quarter length, and life size. It will hang for the present in Emerson Hall but will be placed eventually in the faculty room of University Hall.

PROFESSOR C. J. KEYSER, of Columbia University, delivered on January 14 at Princeton University a lecture on "Ways to Pass the Walls of the World; or Scientific Speculations regarding the Figure and the Dimensions of Space."

DR. A. L. SUTHERLAND, of the Government Hospital for the Insane at Washington, has been appointed instructor in psychology in the University of Illinois.

MR. T. CASE, Waynflete professor of moral and metaphysical philosophy, and president of Corpus Christi College, Oxford, has resigned his professorship.

DR. KARL GROOS, professor of philosophy and pedagogy at Giessen, has resigned his chair at the university.

THE JOURNAL OF PHILOSOPHY

PSYCHOLOGY AND SCIENTIFIC METHODS

PSYCHOLOGY IN ITS RELATIONS TO BIOLOGY

THERE was a time when I agreed heartily with those who say, "What difference whether psychology be considered a part of biology or an independent science, should we not in either case work as we are working?" But recently an examination of my experience as teacher has convinced me of the incorrectness of this view. I note that within the past ten years, as a direct result of a radical alteration in my conception of the nature of psychology, I have almost completely changed the materials of my courses in the subject. What formerly I accepted as subject-matter of psychology and presented as such to my students, I now consider matter of neurology and general physiology; and, conversely, what I now deem the proper and important materials of psychology, I then either relegated to some branch of philosophy or ignored. This fact has sufficed to convince me, as no amount of theoretical discussion would have done, that one's conception of the materials, aims, and methods of his science is of profound practical importance in connection with both teaching and research. I wish, therefore, in the interests of what I consider to be a profitable view of the relations of psychology to biology, to report the results of a narrowly limited inquiry into the conceptions of psychology held by American biologists, to make a confession of faith, and to offer certain criticisms of psychology.

The aforesaid inquiry into the status of psychology in the minds of biologists was conducted primarily that I might learn whether the view which seems to me the best working conception is commonly held. Had my investigation proved it to be the dominant conception, I should not be writing this article.

Inasmuch as in this inquiry I prized quality of judgment above the number of opinions recorded, I sought the views of only a few individuals. To each of twenty eminently able and successful American biologists, of whom about one half are known to be predominantly morphological in their interests and the remainder physiological, I addressed the following questions: (1) Do you consider

psychology a part of physiology? (2) If so, please define the term psychology so that I shall clearly understand what it includes.

At the time of writing I have received the replies of nineteen individuals. Of these replies four are non-committal, the writers frankly admitting that they have no reasonably satisfactory basis for an opinion; eight, with various qualifications, state that psychology is merely a part of physiology; and seven defend the view that it is an independent science, differing essentially in materials or methods, or both, from the biological sciences. Although it would add greatly to the interest and value of this discussion to publish the replies in full, I do not feel at liberty to do so, for the majority of my correspondents, in attempting to satisfy my request, felt keenly the limitations of their knowledge of psychology and expressed their views partly as a personal favor. In quoting from the opinions, I shall mention no names, but I wish to take this opportunity to express my appreciation of the kindness of my correspondents. I shall preface a general statement of the results of my inquiry with quotations from the replies to my questions. These quotations present the three types of conception of psychology which appear to be prevalent among the biologists of this country.

First Type of Conception.—"In my opinion," writes a biologist whose interests are medical, "psychology is a part of physiology. In reaching this conclusion, I assume that psychology is an expression of the activity of the brain, modified, perhaps, in some instances, by ductless glands. I take a purely material view and hold that, except as a mere matter of convenience, the term 'psychology' will in time disappear. As our knowledge of the functions of the central nervous system increases, we shall probably recognize a thought, a sentiment, a feeling, as being as much a matter of routine physiological action of the corresponding cells of the brain as a muscular action is."

This, I need not remind the reader, is a naked statement of mechanical materialism in psychology. It assumes that consciousness is a form of energy, and claims that it can be studied scientifically only as energy. At this point we are not concerned with comments or criticisms.

Second Type of Conception.—A view widely removed from the materialistic is clearly presented by two of my correspondents, the one a morphologist, the other a physiologist. "I have always supposed"—thus the morphologist—"that, when considered from the standpoint of introspection, it (psychology) is a part of metaphysics, but when treated experimentally it is a branch of physiology." And the physiologist, after stating that "the application of scientific method to consciousness can go only so far as to explain the workings of the nervous mechanism," continues, "to my mind, there

is beyond this (the above) a true and wholly distinct psychology—a study of the nature and properties of consciousness independent of the nervous mechanism. The methods of science are applicable to matter and energy, but there is no warrant that they are applicable also to the study of consciousness. Most of the older biologists felt that they are not, and that consciousness must eventually be approached by methods that are extra-scientific, and that have not yet been developed. Such a psychology as this is to be born.”

In each of these statements we have, it is to be noted, the recognition of a special branch of inquiry whose proper materials are psychological phenomena, and the denial of the possibility of applying the methods of natural science to these phenomena. Instead of contending, as do the materialists, that physiology can deal adequately with consciousness by studying neural processes, the advocates of this non-naturalistic psychology declare that, in spite of the fact that no such thing as consciousness exists for the natural sciences, we are compelled to admit the existence of psychical as contrasted with physical phenomena, and to grant that they may be studied in some way or other. Most interesting, in this conception of the nature and status of psychology, is the denial that a real science of psychology exists side by side with the physical and the biological sciences.

Third Type of Conception.—In order to present the third and last conception I have chosen, as in the previous instance, to quote from two of my correspondents who hold essentially differing varieties of the same conception. Both writers are physiologists. The one writes, “One has to recognize a fundamental distinction between the subject-matters of psychology and physiology. This is briefly that psychology deals with the subjective, physiology with the objective manifestations of living organisms. If psychology fails to gain insight into the nature of the phenomena of consciousness, *qua consciousness*, then I conceive that it has failed in its object. Its central object is the psychic, and it is interested in the correlated (objective) organic processes only in so far as these throw light on the conditions of psychical phenomena—on their mode of action—supposing them to have any influence on physical processes or on the nature of the organism, of which consciousness, apparently, is one characteristic property or activity.” And again, the other physiologist writes, “I am inclined to divide the processes in living things into two classes, and to distinguish two groups of sciences on that basis. Then I should say that physiology is the science which deals with material and energetic processes in living things, and psychology the science which deals with processes which are not material or energetic, that is, with the conscious processes.”

This conception thus expressed evidently demands the development of a science which differs from the biological sciences. But before further considering the three types of conception, I shall offer certain general conclusions to which I have been led by a study of the replies to my questions and by reflection concerning the substance of discussions which I have had with many biologists.

The first of these conclusions is that the majority of American biologists either consciously and avowedly, or without realization of the fact, lack that definite knowledge of psychology which alone could entitle them to an opinion concerning the nature of the subject or its right to existence. This fact is not at all surprising in view of the recency of the introduction of experimental method in the study of consciousness, and the psychologist's regret over the state of affairs well may change to satisfaction when he hears that almost all of my correspondents disclaimed fitness properly to answer my questions. To me, I must admit, this is the most encouraging result of my inquiry.

Secondly, I am forced to conclude that approximately half of our biologists, assuming that consciousness is a manifestation of energy, contend that there can be no real science of psychology apart from the physiology of the nervous system. The remainder hold that, although much that is commonly called psychology properly belongs to physiology, there is either an existent or a possible science of consciousness wholly independent of physiology. Finally, among the believers in an independent science of psychology there are those who hold that its methods are not those of the natural sciences, and those who believe that there now exists a flourishing science of consciousness whose methods are essentially the same as those employed by the physical and the biological sciences.

In the light of the above results of my investigation of opinion, I conclude that the establishment and promotion of psychology as a science among sciences places upon those who believe in its right to an independent existence the burden of convincing biologists, and natural scientists generally, of the logical and practical validity of their claim. This, I believe, can be accomplished best by works.

It is my contention that the three views of psychology presented in the quotations from my correspondents' replies—not to mention other views which do not happen to be popular with our biologists—are neither equally tenable from the logical standpoint nor equally profitable as working bases for the investigation of psychological phenomena, and I offer as my chief excuse for the publication of this paper the fact that I believe the rapid development of a real science of psychology depends largely upon the whole-hearted and enthusiastic acceptance of some form of the third type of conception.

I shall now present my chief reasons for this belief. There is nothing original in what I am about to write; I have accepted a certain conception of psychology which is prevalent among psychologists, and I take this opportunity to say so.

My notion of the relation of psychology to the biological sciences will appear in the answers which I have to give to the questions: (1) Is the material of psychology essentially different from that of the physical and biological sciences? (2) Are the methods of natural science applicable in the study of consciousness? (3) Are the aims or purposes of psychology the same as those of the physical and biological sciences? and (4) Is the scientific investigation of consciousness, as such, worth while?

Natural science means, I take it, the systematic study of phenomena for the purpose of describing them, correlating them with other phenomena, discovering their laws, and explaining them causally. Each special science deals with a limited group of phenomena, which may conveniently be studied as a group. The grouping, however, is entirely artificial, and we must suppose that with the progress of investigation the special sciences will tend to coalesce, so that finally we shall have a general world science which shall deal with all phenomena of energy—the organic as well as the inorganic. I should like to be permitted throughout this discussion to refer to this composite of the physical and the biological sciences as “*physics*” in order to contrast it with what I wish to call “*psychics*.” The pertinent question for us with respect to the general science of physics is, Would it include psychology? Many American scientists, perhaps most of them, would answer in the affirmative, and for this very reason it seems to me worth while to set forth my reasons for believing that however far physics be developed, psychology will ever remain logically independent of it.

Accepting the common-sense view of the world, science regards objects now from the objective, now from the subjective point of view. The objective point of regard or attitude toward things is characteristic of physics; it deals with objects as existent “out there” in space and time and as relatively independent of the observer. The subjective attitude is characteristic of psychics; it deals with objects as existent in the consciousness of the observer. At the same moment an orange or the activity of a dog may be material of physics and of psychics. The whole world is viewed by the naïve individual, as well as by the scientist, in these strikingly different ways. We may, if we like, refuse to accept the assumption of the physicist that his point of regard lends itself to scientific inquiry; and we may similarly deny that the psychological attitude toward objects furnishes a scientific approach to the world, but we

simply can not deny the existence of these two attitudes. Upon those who urge that the one or the other attitude should be ignored by scientists, or that the two should be fused and that things should be studied neither as independent existences nor as consciousness, must rest the duty of so directing the development of science as to provide a knowledge of the world which shall be more valuable than that provided by the physical and the psychical ways of viewing things. Logically it would appear that objects of investigation are neither wholly independent of nor wholly dependent upon the scientist, and that it is therefore profitable to approach them by as many paths—the physical and the psychical are only two of many possibilities—as we can discover. Above all else I am interested in the increase of our knowledge of phenomena—their characteristics, relations, etc.—and I believe that we shall progress most satisfactorily for the present by doing our best to apply the methods of exact science to objects as physically and as psychically existent. If later we discover that either or both of these ways of viewing phenomena are unprofitable we can then turn to other approaches to reality. History indicates that it is not well for the scientist to concentrate his attention upon the task of discovering directly how things really exist. Instead it pays him to be satisfied temporarily with partial views of his objects.

I have answered the first question—Is the material of psychology essentially different from that of the physical and biological sciences?—by saying that it is not, and I have contended that physics and psychics examine the same objects from different points of view and with different attitudes toward their materials. This leads us to inquire, Can objects considered as consciousness be studied by the methods of the natural sciences?

Physics, by observation of its objects under natural and experimentally controlled conditions, strives to gain a description of its materials which is quantitatively accurate, which is verifiable, which forms a basis for the prediction of events, and which explains phenomena by revealing their causal relations. The recognition of these several important points with respect to scientific method raises the following questions concerning the methods of psychology.

Does psychology observe under natural and experimental conditions? Certainly. For fifty years the application of experimentation in the study of consciousness has progressed steadily, and there is no proof that the limit of its usefulness has been reached.

Does it strive for quantitatively accurate descriptions of its objects? We must reply, that only such descriptions satisfy those experimental psychologists who have made the greatest contributions of fact to their science. It has been said that the psychical

object can not be measured, that one of its prominent characteristics is its restriction to qualitative, as contrasted with quantitative, investigation; but, inasmuch as we constantly refer to psychological objects as greater or less, it seems that the rareness of accurate measurements in psychology is due rather to the observer's lack of skill than to the nature of his objects. At present it is customary to characterize and stigmatize the data of the psychical sciences as crudely inexact in comparison with those of the physical sciences. Unquestionably this is the case, but I wish to insist that it need not be true, and, further, that the responsibility for this condition of the science rests upon psychologists. We need ingenuity, insight, and persistent effort in order to discover ways of describing our objects with exactitude.

Does psychology present verifiable accounts of its objects? I answer, in essentially the same way as do the natural sciences, but less satisfactorily because of the inexactness of description; for verifiability depends upon the degree of quantitative accuracy with which an event has been studied as to its immediate characteristics and its relations. In all those regions of psychology which have been investigated with a reasonable degree of thoroughness and accuracy we discover verifiability of observations. In this respect, then, psychics differs from physics in its present status, not in its possibilities.

But the most important question remains to be answered, Does psychology explain phenomena causally? Not a few students of the psychical sciences seem to think that all causal explanations must come from physics, and that psychology is necessarily teleological instead of causal. With this view I must disagree, for an examination of the aims of both physics and psychics reveals the fact that there are two mediate goals: the accurate description of phenomena, and their explanation in causal terms. I contend that causation is not limited to the physical sciences, but that from the psychological point of view, as well as from the physical, we observe a series of phenomena in which definite sequences are discoverable, and in terms of this apparently necessary arrangement of our objects we explain them. In physics this uniform relation of phenomena is called physical causation; in psychics it is called psychical causation. It is just as important scientifically from the one point of view as from the other. Comparative psychologists especially need to realize that they are not compelled to turn to physiology for explanations of their phenomena.

To sum up this rather dogmatic discussion of scientific method in psychology, I may say that I can discover no essential difference in the methods of the two groups of sciences which I have chosen

to designate as physics and psychics. Both are observational, experimental, quantitative, causal in their explanations; both are in process of development, but in degree of development the psychical sciences are inferior to the physical sciences. Certain of the reasons for this state of affairs I shall attempt to indicate later in this paper.

The last two of the four questions concerning the relation of psychology to the biological sciences must be answered summarily.

Above I have stated that the aim of natural science is to give accurate descriptions of its objects, to correlate its phenomena, to discover their laws, and to explain everything causally. This, it seems to me, is the aim also of psychology. In fact this is the common aim of all the physical and psychical sciences.

Is the scientific investigation of consciousness, as such, worth while? Can we justify our attempts to observe objects from the psychological point of view? This is the kind of question no real scientist stops to ask after he has once committed himself to the search for truth in some division of science. For he knows full well that our outlook is too limited to enable us to answer such queries wisely. No one of us can justify his researches in the eyes of all men, and fortunately none of us feels it necessary to do so. The study of consciousness is worth while, if we can achieve the goal of science.

The current American psychology of to-day is a dismal mixture of physiology and psychology. No wonder biologists are confused respecting the nature and status of the science; no wonder they question its right to the name science. To me it now appears of first importance that we should deal with psychological objects thoroughly and in a rigorously scientific manner instead of devoting most of our time to premature attempts to correlate physiological and psychological phenomena. Even more distasteful to the natural scientist than the purest of speculative philosophy are these attempts of psychologists to picture the neural processes which parallel, or condition (according to the individual's conception of the relation of body and mind), psychological phenomena. Vague imaginings, mostly, are these "physiological explanations" of consciousness. I could quote *ad nauseam* from standard text-books of psychology in support of my contention that most of us know neither physiology nor psychology well enough to correlate satisfactorily the results of these sciences. I am deeply interested in physiological psychology, as well as in physiology and psychology, but I maintain that at present it is more important for science to advance our knowledge of bodily and mental processes than to speculate concerning their relations or to try to explain one set of phenomena in terms of the other.

For psychology and psychologists there are certain urgently important and intensely practical, albeit unpleasant, facts which should be mentioned in connection with this discussion. I refer to the status of psychology in America, and to the reasons for the low esteem in which it is held by our physical scientists. Most scientists, whether they believe in a science of consciousness or not, admit that the present status of the subject is extremely unsatisfactory. As compared with even the newest of the physical sciences it appears crude, vague, inexact, unscientific. It is reasonable, therefore, that those of us who are professionally interested in the subject should seek to discover the causes of this state of affairs.

My study of the situation has led me to the conclusion that there are four preeminently important reasons for the sad plight of psychology.¹ These are: (1) The lack of a generally and unquestioningly accepted body of presuppositions or postulates to serve as a working basis; (2) The lack of strong and research-impelling faith in the value of the aims of psychology and in the possibility of attaining these ends by available scientific methods; (3) The too-prevalent lack among empirical psychologists of thorough training in scientific as contrasted with philosophical method, and (4) The prevalence of poor teaching, and especially of the presentation of psychology as a collection of bizarre phenomena or as a philosophical discipline instead of as a science similar to the physical sciences in aims and methods. I shall briefly consider each of these four facts—for I am forced to admit that they are facts—with the hope that the frank recognition of undesirable conditions may be the first step toward improvement.

As to presuppositions, it is safe to say that few, if any, sciences are in worse plight than psychology. Progress in physics would cease should the investigator question the independent existence of his objects. Indeed, it takes but a superficial survey of the sciences to convince one that no science can flourish until it has definitely accepted a body of presuppositions, and until it has ceased to question them so far as its practical problems are concerned. We recognize that it is impossible to prove the truth of certain of the physicist's most important assumptions, but we do not on that account contend that his descriptions and explanations of the world of objects and events are valueless.

Psychology can not work without assumptions or presuppositions, and it can not progress rapidly and steadily until a certain group of presuppositions has been definitely and heartily accepted

¹It is noteworthy that psychology has a much better status in Europe than in America.

by the great mass of its workers. It is not sufficient that an investigator here and there should adopt a working basis and then turn all his attention to the problems of his science. There must be union as a source of strength to the science. The study of the animal mind at this time stands forth as an instructive example of the effects of wrangling over assumptions instead of accepting the best that can be found, and then straightway going to work. Especially pertinent at this point is a paragraph from a class report which was submitted to me recently by a student in an introductory course in comparative psychology. It reads, "A peculiarity of 'animal psychology' is that its expositors are still quarreling about its presuppositions. In most sciences the speculative bases are so widely accepted that workers in them, hearing no din of controversy, suppose those bases to be not speculative at all. For that reason expositors of other sciences may doubt the scientific status of 'animal psychology.' But it will be as scientific as any of the sciences, if ever its workers unite upon a criterion of the presence of consciousness. For the distinguishing mark of a science lies not in the selection of first principles, but in the care, and caution, and precision with which they are applied." I sincerely hope that my teachings are at least partly responsible for this opinion, for I believe that it is the correct view, and I heartily wish that it were held by all psychologists.

The sad truth is that to-day psychology means very different things even to psychologists themselves. Already I have pointed out the fact that our biologists look upon the subject as a part of physiology, as a branch of metaphysics, as a possible science in which the methods of natural science are not applicable, or, as a genuine science of the subjective. Scarcely less divergent are the views of those who are really working in psychology. What can be expected of a subject thus hampered? Surely we may not hope for rapid and consistent progress until we have united whole-heartedly upon a working basis and a definition of the aims of our science.

Only less important than agreement as to presuppositions is the attitude of the psychologist toward his work. As a group we lack that strength of faith in our aims, methods, and ability which alone makes for success in research. We lack enthusiasm; we are divided; we waver in our aims; we mistrust our methods as well as our assumptions; we question the value of every step forward, and, as an inevitable result, our subject lags at the very threshold to the kingdom of the sciences. In a startling and illuminating way the biologists believe in their aims and methods. Those who fail because of lack of faith and enthusiasm are the exceptions in this domain. Of the physicists and the chemists the same is true. And of the value

of this attitude toward one's work what further evidence is needed than the achievements of the physical and biological sciences.

To no small extent, in my opinion, our lack of faith and enthusiasm is due to the third of the conditions mentioned above, namely, our inadequate training for the tasks which we set ourselves. Psychologists generally have not been rigorously trained in the methods of the natural sciences; yet, these methods—definite, precise, exacting—are now recognized by the masters among psychologists as the methods of psychology. Teachers and investigators, no less than students of the subject, come to their tasks—often to the research laboratory of experimental psychology—with keen interest in speculative philosophy and not infrequently with theoretical knowledge of scientific method, but of the practises of the exact sciences many of them know nothing from experience. A host of those of us who are known as psychologists simply do not know how to observe or to experiment with objects either physically or psychologically.² I hold that it is absurdly inconsistent for us to expect psychology to develop scientifically so long as the majority of her workers are trained in metaphysics instead of in physics or psychics. Doubtless I should hasten to add that I respect both the methods and the results of speculative philosophy, and that I object merely to the use of the subject as a substitute for science of the naturalistic sort. I am convinced that philosophy does not give the training which the experimental psychologist needs. Surely it is well worth while for us to ponder the fact that every psychologist would give more for a single research student well trained in the physical and biological sciences than for a dozen skilled and able speculative philosophers.

Above I have insisted upon training in physics or biology as a preparation for work in psychology, but I should with equal willingness accept training in any science or sciences of the psychological group were they as highly developed on the side of method as are the physical sciences. The time may come when psychology itself will furnish as satisfactory training in scientific method as can now be gained in the physical sciences. But until that time has come, we should avail ourselves freely of the advantages which the physicists have won and generously place at our disposal.

Finally, I wish to call attention to the fact that the prevalent teaching of psychology is not such as to build up a conception of the

² Although the greater part of my own contributions to science have been physiological, I feel that I am entitled by my experience in teaching psychology to include myself among the students of consciousness. Were it not for the fact that during the past nine years I have given one or more introductory courses in general psychology, as well as an elementary course in comparative psychology each year, I should not offer any criticisms of the subject.

subject as a science or to develop a strictly scientific attitude toward it. Because of diversity in point of view and vagueness and uncertainty as to aims and methods in the minds of those of us who teach it, psychology is, as a rule, presented to elementary students quite unsystematically and unscientifically. Talk with almost any one who has taken only an introductory course in psychology in a college or normal school and the fact will appear that the subject means to the individual either a curious hodge-podge of more or less bizarre and mysterious phenomena or a study of the brain and certain of its functions! Whether it is worse to consider the subject as the study of hypnotism, thought transference, spiritualistic phenomena, delusions, illusions, and dreams, or as the study of brain processes, I leave it to any one who is interested to decide. For my part, I am content to do everything in my power to replace both of these conceptions of the subject by the one to the exposition of which this paper is devoted. It is indeed a serious admission, that of psychology as the systematic and persistent attempt to describe and explain the facts of consciousness the average student has no notion. There is something radically wrong, for even an elementary course should give each student a definite idea of the chief characteristics of the materials of psychology, of its aims, of its methods, and of its principal achievements.

ROBERT M. YERKES.

HARVARD UNIVERSITY.

LITERATURE AND THE "NEW" PHILOSOPHY

I HAPPENED the other day, after reading Professor James's admirable volume, "A Pluralistic Universe," to pick up a copy of "Hamlet." Now it is one of the miraculous properties of that protean play, that, read it when you will, you instantly become convinced that it was expressly written to shed light on whatever problem has most recently chanced to occupy your mind. And so, on this occasion, it was not strange that before I had finished the first act, I was aware that the prophetic soul of Shakespeare, dreaming on things to come, had forecast in the opening scenes of the drama, in vividly symbolic form, the situation in philosophy at the close of the first decade of the twentieth century.

I shall not pause, in imparting my discovery, to prove that the metaphysic taught at the University of Wittenberg was an effete form of transcendental idealism, or to suggest that the gentle Horatio was a rationalist of the "viciously intellectual" type. I institute no analogies between this little group of Danish ghost-raisers and

our modern societies of psychical research. I even refrain from comparing the spirit of Hamlet's father to that of the late Frederic Myers (though it would obviously be difficult to prove that Shakespeare did not have any or all of these parallels in mind). I pass over these perhaps doubtful points to come to one that, subversive of all tradition though it be, nobody could possibly miss: to the fact, namely, that Hamlet himself was a "radical empiricist." No one, to be sure, calls him so in the course of the play. (I wish some one had. His retort would have been distinctly worth recording.) But Shakespeare places the fact itself beyond cavil, for when the muffled accents of the ghost make themselves heard from beneath the platform, Horatio, whose world affords no place for wonders such as this, breaks forth:

O day and night, but this is wondrous strange!

—words to which Hamlet flashes back the instant answer:

And therefore as a stranger give it welcome!
There are more things in heaven and earth, Horatio,
Than are dreamt of in your philosophy.

This is, indeed, Elsinore, on a night in the dim past. It is the utterance of Hamlet to Horatio. Yet, alter but a word, as it were, and centuries have slipped noiselessly by. We are in Cambridge, Massachusetts. It is the voice of the author of "A Pluralistic Universe" chiding some "thin" and "tender-minded" monist:

There are more things in heaven and earth,—

etc.

But the full force of this startling parallel can not strike us until we notice (what the casual reader may be counted on to miss¹) that Hamlet is censuring only very incidentally the personal metaphysical conceptions of Horatio; he is arraigning, rather, philosophy itself. This midnight visitation of his father's spirit is an experience which his own previous theories of life will not assimilate. Under the pressure of this sudden enlargement of vision, the poet in Hamlet (for he is both poet and philosopher) rises superior to the thinker, and as he turns on his trembling companion, every fiber in his being seems to say: "O Horatio, Horatio, life is not the paltry thing that that thin-haired old recluse at Wittenberg, with his dusty tomes and still dustier syllogisms, would have had us think! Ah no!—it is filled with things more terrible than ever entered his conception.

¹ The pronoun "your" in the phrase, "Than are dreamt of in your philosophy," causes the trouble, it being used, as so often in Elizabethan writings, in much the way in which we might now say, "It takes your American to squander money."

It is beset at every step with fresh perils. It is packed with infinite variety, shattering to bits our puny human formulæ, luring us on with thoughts beyond the reaches of our souls." Some such utterance as this we read on Hamlet's countenance as he turns upon Horatio; with some such utterance of silent protest, poetry has, from the beginning, turned upon philosophy. When, then, in the year nineteen hundred and nine, I behold philosophy again before the bar, and hear words of indictment which are the very echo of Hamlet's to Horatio, I can not but wonder whether the spirit of poetry, unseen perhaps and unsuspected, may not again be near; whether, when the clouds that now obscure the sky have lifted, we may not behold the stars of philosophy and poetry in unwonted but auspicious conjunction.

Surely such a conjunction should be in the course of nature, for, often as it is forgotten, the goal of poet and philosopher is the same. Each, in his own way, seeks to unveil the secret of the world. "What is the nature of reality?" asks the philosopher. "What is this thing called life," is the (often unconscious) question of the poet, "life, to which man is bound by such strange chains of destiny?" And the answers to each question have been many. Yet, as we gaze back at the history of those answers, we note a difference so radical and seemingly so final that he who seeks to dwell on it or lend it significance may expect a request, polite or impatient, as the case may be, to cease insisting on a point so obvious, with a further hint that the distinction which he makes is merely the inherent difference in method of two quite separate functions of the human spirit. This is, to be sure, partly true. Yet certain signs in the philosophic firmament bid us pause with the question, whether, after all, the difference is as ultimate, or its significance as obvious, as has been assumed. Meanwhile, it is time to mention what that difference is.

Philosophy, almost from the first (for perhaps some of those old Ionians were wiser than their sons), has sought a scheme or pattern to which it can be shown that the universe conforms. The philosopher is like a mighty geometer endeavoring to construct a diagram which, when superimposed on life, will fit it perfectly. Or, again, he is like a map-maker. Soaring aloft, he seeks a bird's-eye view of the country below, that he may see things in their true relations, and so construct, with the nicest accuracy, a chart of the region over which he gazes. Not so the poet. He, too, may rise above the world to expand his soul with a sight of life's remoter reaches, a glimpse of its mighty outlines. But he rises only that he may again descend. By an imperative demand of his nature he must know how the hearts are beating in those cities, how the birds are singing in the woods, how the storms are tossing the sailors on the sea.

"The cattle rising from the grass
His thought must follow where they pass;
The penitent with anguish bow'd
His thought must follow through the crowd.
Yes! all this eddying, motley throng
That sparkles in the sun along,
Girl, statesman, merchant, soldier bold,
Master and servant, young and old,
Grave, gay, child, parent, husband, wife,
He follows home, and lives their life."

This necessity may drive the poet² so far even as to make him feel (and this is what is called realism in literature) that if he can but report truly, in all its manifold detail, the life about a single doorway in some secluded hilltown of New England, he may have done as much toward attaining a comprehensive knowledge of the country as he who, from a loftier vantage point, has beheld the whole land in perspective, traced every curve and angle of the coast from Maine to California. The poet, in other words, must know not merely the form and configuration of reality; he must know, too, its fiber and tissue. The stuff out of which the vast tapestry of life is woven, the color and quality of every thread—these are not less to him than the pattern after which it is fashioned or the design with which it is adorned. The texture of every block of granite, the veining of every marble shaft—these, not less than the type of architecture, classic or gothic, that governs their assembling. The flesh and blood of life, not less than the skeleton. The fragrance and color of the flower, not less than its delicate outline. The lights and shadows on the mountains, not less than the contour they cut against the sky.

And is not the poet right, absolutely right, in insisting that these things make up a part of reality? Assuredly, if the analogies of ordinary experience count for anything, the "meaning" of life can not be the whole of life.

A battle is fought. Does its whole reality lie in the "cause," reduced to abstract propositions, for which each of the opposing forces is contending? Is the roll of the musketry nothing, the flash of glittering blades, the spurting of bright blood, the flags wreathed in smoke, the cursings of the captains, the prayers of the dying? A ship sets out from port. Does the reality of its voyage consist solely in the will or purpose of its owners? Is every incident of its

² I hope it is superfluous to note that I am using the word "poet," throughout this paper, in its widest, which is also its derivative, sense—with no special reference to the artisan in verse. (The term is so much more pregnant and suggestive than phrases like "literary man" or "man of letters"! "Poetry," Matthew Arnold has well said, "is simply the most beautiful, impressive, and widely effective mode of saying things.")

passage to be explained in terms of the chart in its cabin or the warehouse across the sea to which its cargo is consigned? How of the white sails and the green waves, of the wreck descried far off at sunset, or the icebergs drifting by by moonlight; of the storm, the crowding of the sailors, the quick launching of boats, the beating heart of the stowaway in the hold, the captain still on the rail when the vessel sinks? Surely it can not be wholly otherwise with the voyage of life.

But these are mere metaphors, it will be urged. Perhaps so. Yet it is well to bear in mind that it is of such elements as these that the literatures of every race and every age assure us life is made. It can not behoove philosophy lightly to set such evidence aside. The tragedy and comedy of existence, its irony and romance, its pathos and humor—these may not, they plainly do not, make up the whole of life, but it is hard to escape the conviction that there is about them something ultimate. Why else should they lend themselves so readily to designs of beauty?

If any one fails to feel wherein there is something ultimate in these things, appeal may be made to an experience, which, I believe, is well-nigh universal. Who, in reading poetry, has not suddenly come on one of those "inevitable" lines or passages that send the blood tingling through the veins? You draw a deep breath and exclaim: "This is life; this is reality!" "Yes," you feel, "however high reality may reach above this, however deep it may pierce beneath, however distantly it may stretch to the right hand or to the left, here, at least, it goes no farther *in*."

I might give examples. But in these things one man can not choose for another, nor can one tell how far the effectiveness of a passage depends on a context which one's own memory unconsciously supplies. For my part I have always felt this quality—and how often one feels it in simple poetry where the mere thought is nothing!—in these two lines of Arnold's, verses whose music seems to have caught the very shiver of the early morn:

And 't was when night was bordering hard on dawn,
When air is chilliest, and the stars sunk low,

or in that single haunting line:

And the night waxes, and the shadows fall.

I feel it in the cry of Wordsworth's forsaken Margaret:

My apprehensions come in crowds;
I dread the rustling of the grass;
The very shadows of the clouds
Have power to shake me as they pass:

I question things and do not find
One that will answer to my mind;
And all the world appears unkind.

For him who remembers the tragic life and death of Swift, it is present, with terrible intensity, in those four words, "Only a woman's hair"; while no one, surely, can fail to feel it in superlative degree—commingled, here, however, with something widely different—in the Biblical phrase, "And God shall wipe away all tears from their eyes," or in the last words of Hamlet: "The rest is silence."

But life itself, it will be said, even more potently than poetry, gives us these same emotions. If it does, so much the better. But every one can not say so, and hence it is the function of the poet to quicken the senses of those who, having eyes and ears, neither see nor hear. When he succeeds, we feel that his words have imprisoned, once for all, the very essence of the object he is depicting, of the emotion he is presenting. And this is just what I meant by saying that the poet puts us in possession of the tissue and fiber of reality. Any one understands what is meant by calling Shakespeare's "King Lear" philosophic, or Dante's "Divine Comedy," or the "Prometheus Bound" of Æschylus. These productions, whatever else they have, possess something of that range and scope, that all-inclusiveness, which we associate naturally with the very word philosophy. But call a song of Burns' philosophic and you excite either perplexity or mere contempt. "How ignorant the fellow is," thinks the person you address, "of the most elementary definitions!" Yet, if philosophy be, indeed, a quest after reality, nothing can be more certain than that the songs of Burns are among the most philosophic writings in any language. The difference lies in this: that their power is intensity rather than range; they do not give us the whole, but at a single point they do pierce through and touch the heart of life.

"But you are hopelessly beside the mark," it will be urged in answer to all I have been saying, "if you imagine that philosophy, too, is not interested in the warp and woof of life. Have philosophers forgotten to talk of substance and essence? Does not this one tell you the world is made of mind? Does not that one tell you it is made of matter?" Precisely;—and sometimes with such discrimination that the matter might be substituted for the mind, or the mind for the matter, and none would be the wiser. It is a curious fact that even the most antithetical varieties of philosophical *substance* have a strange family resemblance (not unlike that which has been noted among skeletons), so that one must take care to keep them

clearly labeled or they are liable to get confused. But in the ordinary world of real substances, of stocks and stones and Cheshire cats, could such a mere interchange of names ever deceive even the most ignorant? No; there a rose by any other name would smell as sweet, and Romeo, though no longer Romeo, would be as dear to Juliet. It is not the poet, your true worshipper of words, who is oftenest the dupe of words. For that man, rather, who, caring little for things verbal, indulges in the easy excess of abstract and technical language, is reserved the righteous nemesis of mistaking names for things. To talk much of "substance" argues no necessary intimacy with the reality itself. In illustration of which fact, I have sometimes, in my more depraved moments, pictured the philosopher to myself under the figure of a little tailor into whose shop the universe has wandered in search of ready-made coat and trousers. The little tailor, bent solely on providing a perfect "fit," leaves quite out of account the question of "the goods" themselves, whether they be gray or scarlet, tweed or calico. The universe, perceiving that the little tailor's mind has been affected, arises and departs. But he, quite unconscious that his customer has gone, does not relax his search, and long afterward we catch glimpses of him, through the window, still absorbed in the quest (and coming, perhaps, all unawares, ever nearer and nearer the attainment) of that highly ideal entity, the substance of a perfect fit.

But leaving these low and libelous comparisons, let us return to what we were saying. It is a fact of no less philosophical than philosophical import that no human words (so far as I know) have ever conveyed a sense of the fabric of which life is made save words packed with the flavor and memories of the *sensible* world. Sensation, Professor James tells us, philosophers have shown a tendency to despise. No poet ever despised sensation. A painter might as well despise color, or a sculptor clay. It has been asserted, until the phrase has become mere cant, that the poet is the idealist. In one sense, this is, of course, forever true. But he is also, it is high time to insist, an incorrigible realist, wedded in indissoluble union, to the sounds and scents and colors of the outer world. Many a romantic writer has tried to break those bonds. Behold Shelley, most ethereal of poets, striving to leave the world of sense behind as he mounts upward into the "intense inane," and see how, in spite of himself, he carries that world with him:

The breath whose might I have invoked in song
Descends on me; my spirit's bark is driven
Far from the shore, far from the trembling throng
Whose sails were never to the tempest given;
The massy earth and spherèd skies are riven!

I am borne darkly, fearfully, afar;
 Whilst burning through the inmost veil of Heaven,
 The soul of Adonais, like a star,
 Beacons from the abode where the Eternal are.

Well may the world of sense say of such poets, in Emerson's phrase:

They reckon ill who leave me out;
 When me they fly, I am the wings.

But now, to come to the conclusion at which I have all along been aiming, if I have read these recent books of Professor James's aright, their very pith and upshot is a call to philosophy to open its eyes to just this world of sense from which the poet has so long been gathering such fruitful harvests; a call to philosophy to come back from these far excursions over the surface of life and to discover life's third dimension; to abandon these quests after the North Pole of the universe, leading as they do over a white monotony of snow and ice, and to find the gold-mine in its own cellar, the sunshine in its own attic, or, better yet, the human hearts between the two.

I account it, therefore, much more than a coincidence that the two men Professor James has singled out for especial praise, Fechner and Bergson, are men having a plainly poetic element in their natures. I know little of the philosophy of either at first hand, but what is said in "A Pluralistic Universe" is in itself sufficiently conclusive. The spirit and atmosphere of these men, quite as much as their theories, appeal to Professor James. After quoting Fechner's description of a spring walk (a description parts of which Cardinal Newman might have written), he remarks: "Where there is no vision the people perish. . . . Fechner had vision, and that is why one can read him over and over again, and each time bring away a fresh sense of reality."³ More than one critic would accept that last phrase as an excellent criterion of literary quality. Much the same, also, might be affirmed of this on Bergson: ". . . open Bergson, and new horizons loom on every page you read. It is like the breath of the morning and the song of birds."⁴

And if these things are said of Fechner and Bergson, what shall be said of Professor James himself? Damning as the indictment may sound to those whose most precious possession is an intellect chaste and unspotted from contact with lower functions of the soul, there is, for the truthful man, no escape from the conclusion that Professor James, too, looks at the world in the poetic way. His writings have, at their best, exactly that clarifying and energizing power which is the sure mark of poetic, or, if you will, literary, en-

³ "A Pluralistic Universe," p. 165.

⁴ *Ibid.*, p. 265.

dowment. His philosophy is to Professor James a vision. But he who has a vision, and has, too (it is important to add), power to impart that vision to the world, is, in so far, a poet. These books are that rare and admirable thing among productions of their kind—examples of their own doctrine. They have a third dimension, fiber, tissue, concreteness, thickness (the last, fortunately, not in the sense in which some other philosophic works possess it). They persuade by something larger than their logic.

But I am making it more and more certain that I shall be misunderstood. If any one imagines that I am pleading for an obliteration of the distinction between philosophy and poetry, he wildly misinterprets me, and I, in my endeavor to drive home my point, am punished, with peculiar justice, for treating an intricate subject in all too simple outline. No; the spheres of poetry and philosophy, their methods and missions, are distinct. I recommend to no metaphysician the composition of lullabies or epics. But this does not mean that philosophy and literature may not form alliances, offensive or defensive, or even mingle their forces in fighting the battles of the spirit. Far otherwise. And far otherwise, especially, at the present moment! For if this new "empiricism" is, indeed, to be the philosophy of the immediate future, if logic is to be plucked down from the metaphysical throne, and the concrete at last to be proclaimed the real, then, in consistency, two paths and only two lie open. (1) Philosophy may resign her ancient place as one of the great *voices* of the world and descend into the arena of practical activity. This would be heroic; but it would also be, would it not (if so mild an expression may be pardoned), slightly suicidal? For in that case, though she might be bestowing on the world something better than philosophy, she could hardly be said, unless words have lost their meaning, to be preserving her own identity. But (2) if philosophy wishes still to speak, she must turn toward the one organ which, as its history shows, has had some success in giving lasting expression to the multifariousness of life. From science this new philosophy has received her impetus, and from science she will continue to draw, in liberal measure, both facts and inspiration; but in seeking a voice for her discoveries, she must learn of literature, for poetry, from the first, has been the voice of the infinite variety of the world.

Unless she follows one of these two courses, the new philosophy will be left, not merely in an impotent, but in a ridiculous, position. For the man who, in solemn tones, utters the affecting creed, "I believe in the concrete," is by no means, as he may suppose, extending the conquests of metaphysics some leagues farther into the realm of chaos and old night; he is performing, on the other hand, the much

commoner and more benevolent act of adding to the gayety of nations. The old irony of things has got him! He stands convicted out of his own mouth!—for of all the thin, pale ghosts of abstraction that ever paraded the philosophical platform, “the concrete” is assuredly the thinnest and the palest. Let him, then, who has placed his faith in any such bloodless hallucination of the mind, fear lest, in an hour of disillusionment, he encounter, like Hamlet, a more dreadful spectre, whose presence shall wrest from him, in words not unlike Hamlet’s own, the confession:

There are more things in heaven and earth, Horatio,
Than are dreamt of in *my* philosophy.

HAROLD C. GODDARD.

SWARTHMORE COLLEGE.

A NOTE FROM PROFESSOR A. O. LOVEJOY

COLUMBIA, MISSOURI, February 19, 1910.

TO THE EDITOR OF THE JOURNAL OF PHILOSOPHY.

Sir: May I ask for a few lines of additional space to note an *erratum* in a paper of mine in the issue of the JOURNAL for February 17 (Vol. VII., pp. 101–105) a slip in writing which escaped me in too hasty proof-reading, and for which my own oversight is entirely responsible? As all logicians who may have read the paper must have noted, the phrase at the beginning of Rule IV., p. 104, should be deleted, and the Rule should read as follows: “IV. When two propositions between them exhaust all five possible cases, from the falsity of either, the truth of the other may be inferred.” This, of course, is true *whether or not* the two propositions be compatible with any common cases.

ARTHUR O. LOVEJOY.

REVIEWS AND ABSTRACTS OF LITERATURE

Religion and the Modern Mind and Other Essays in Modernism. FRANK CARLTON DOAN. Boston: Sherman, French & Company. 1909. Pp. ix + 201.

This volume is intended as a contribution to religion. Its interest to the philosophical reader lies in its relation to pragmatism. Many have asked of late, “What is the religious import of the new philosophy?” We have before us now a work which may be briefly characterized as the gospel of humanism, on the basis of the pragmatic philosophy. It is not to be supposed that this new gospel is expected to appeal to all men. It is intended for what the author calls the “modern mind.” The “modern mind,” says our author, “is by no means the average mind. . . . By

modern I mean the rare and sincerely open mind, the man conscious of himself in relation to a full modern culture, unbounded by historic forms and terms. . . . The man I call modern, whether for good or ill, is a man without a conscious history; he is without any religious traditions" (pp. 22-25). This new religion of humanity is a declaration of independence. Independence not only of the rationalistic theology of the past, but also of the religious history of the race. The method by which the new religious attitude is to be acquired may be seen from a few quotations. "Well, then, what does the modern mind *want* God to be? What are man's lasting wants, his eternal needs? That's the question. Then, dare to convert these eternal wants into resolute pulls upon being's sources! Enter the free region of the Unknowable and stake out your claims! Assert your right to find in God what your human life most profoundly needs! Stake your life upon the trustworthiness of the eternal! Hold fast to that! Demand what you need of that! Believe in that! And, as God lives, that will come true in the end! This is the method" (p. 34). We have heard before of the "will to believe." We are called upon now to take the small step from this epistemological will to the ontological will, the will to create. To be sure we are told that the universe is not absolutely plastic to our desire, but "Doubt it not! There is a region of being—what the philosophers call the Unknowable—where the facts are undetermined, where your poor human 'say so' counts tremendously! It is the region of 'Man' and 'God,' the habitation of the 'God-Man' of the modern mind."

"The modern man needs a new prophet who shall reveal the mystic humanity of God; a prophet of the universal human life and righteousness of God. He will bring close to man a God whose humane spirit has lived and grown through practically infinite time and over practically infinite space; a spirit which age after age in constant hopefulness and patience has guided the very stars to serve the spirits of men; a God-Man who through the ages has developed a hopefulness which can nevermore give up its experiment of love among men, so long as one solitary soul continues to live in right affectionate relation with this invisibly human life; a great moral companion living and growing with and through the human life; an infinitely human God with all of a man's mysterious powers and sympathies. . . . This is the religion of the modern man, conscious of his deepest needs and powers: a confident belief in the final purity, dignity, and goodness, the actual presence of all *his* passions in a living God. Man, an infinite god: God, an infinite man. This is the religion, I tell you! How long, O Man-God, must men of the modern mind await thy prophet?" (p. 51).

We are exhorted to acquire this new religion by trying what our author calls, "an experiment in divinity." "The point is, to strip your manhood most scrupulously, most painfully bare of all its filthy parts, to lay aside your beastialities and liberate your manhoods, to expose the naked, cold-as-steel soul of you to the eternal tempering energy of the world's fire-dust; then by reacting to transpierce the universe's self with this pure and strong manhood you bear, and call the resulting experience

God, God-Man, Man-God, or by what name soever God may will. That experience is your religion's sole deep concern. That experience is you; it is God. Perhaps this will appeal, I say, to men of iron constitution. God grant this." In one place the author very happily denominates his religion of humanity as a "mysticism of the will." In spite of the emancipation from the religion of the past most of the ideas of the new religion sound quite familiar, though often inverted. Traditional religion has taught that in God we live and move and have our being; the new religion teaches that God lives and moves and has his being in us. The old said God made us, the new exhorts us to make God. The old said God made man in his own image, the new says let man make God in his own image. The old regarded God as infinite and perfect, the new regards him as finite and imperfect. Psychologists have noted that when one puts his head between his feet and looks at the landscape inverted he sees the colors of nature with a new and pristine vividness. No doubt there are temperaments in which the religious consciousness is similarly vivified by inversion. To certain temperaments no doubt this volume will present a powerful and ennobling appeal. Most minds, however, seem to require at least an illusion of objectivity in the object of their worship. The religious nature of few men can be satisfied by a conscious product of the "creative virtue of a religious enthusiasm." The author characterized the religions of the past as "vague" and "vacuous." To the present writer it would seem that these adjectives might apply no less to the new.

In an appendix are republished the two articles, "An Outline of Cosmic Humanism" and "The Cosmic Character," which appeared in numbers 3 and 12, Vol. VI., of this JOURNAL.

F. C. FRENCH.

UNIVERSITY OF NEBRASKA.

Wellesley College Studies in Psychology. No. 1. *A Study in Memorizing Various Materials by the Reconstruction Method.* ELEANOR A. MCC. GAMBLE. Lancaster, Pa., and Baltimore, Md.: The Review Publishing Co. Pp. v + 210.

The latest monograph supplement of the *Psychological Review* by Professor Eleanor A. McC. Gamble is an account of a series of experiments on herself and a number of other subjects in memorizing smells, colors, and nonsense syllables. The experiments were conducted mainly at the psychological laboratory of Wellesley College during a period of seven years ending in December, 1908. The author of the monograph was the chief subject as well as the chief experimenter.

The memory tests were made by the reconstruction method, which is as follows: A number of objects are presented in succession; the subject is then required to rearrange these objects in the same order in which they were presented. The mode of procedure in the experiments with smells, which formed the most novel part of the investigation, was to place the scents in bottles of uniform size and shape which were handed to the blindfolded subject, one at a time, at intervals of about five seconds; the

subject removed the stoppers and smelled the contents. After the presentation of a series was completed, the subject was again handed the first bottles as a starter, required to take up the others and, guided by smell alone, to arrange them on the table in the same order in which they had been first presented to her. If the subject failed to reproduce the series in the right order, the bottles were again presented as at first and she tried again. This was repeated until the series was correctly reproduced.

These experiments were of a rather rough nature, as the author takes pains to assert. The experiments with smells were unavoidably so, and those with colors and syllables were not made of a more rigorous character in order that the results derived from them might be comparable with those from the smell experiments. No exact time was observed between each presentation of a stimulus, and none between the completion of a presentation series and the beginning of reconstruction. The experiments were conducted through a long period of time, under various circumstances, with subjects of unequal training. The author believes, and justly, that the great number of experiments and the uniformity of the results lends significance to the work. Within the limits imposed by the character of the investigation an immense amount of painstaking was evidently expended. The monumental labor of the chief subject and experimenter, the author of the monograph, deserves hearty commendation.

As many as 129 different scents were used at one stage of the investigation, but these were reduced during the last two years to 83. One hundred and thirty-six different colors were used, consisting of two-inch squares cut from the Milton Bradley kindergarten papers. The nonsense syllables were constructed in accordance with the precautions that have been worked out by various investigators.

The most striking result obtained from these experiments was the small number of repetitions necessary for a perfect reconstruction of a series as compared with the number of repetitions necessary for the perfect recitation of a series of nonsense syllables by the method of complete memorizing. In these experiments, it should be remembered, the subject was required to memorize the order in which the members of a series were presented, but not the members themselves. The principal subject was able to reconstruct series of 41 and 81 smells with an average repetition not exceeding 2.8. When the subject's practise was at its maximum, series of 30 smells were perfectly reconstructed with an average of 2.2 repetitions. A less degree of perfection, called by the author "correct reconstruction," meaning reconstruction after hesitation and fumbling, was attained with 1.8 repetitions. With series of from 13 to 16 members at the outset of the color experiments, the average number of repetitions for perfect reconstruction was 2.1. The serial order of nonsense syllables slowly presented was just as easy to learn as the order of smells and colors. The effect of practise was to reduce the number of necessary repetitions to the same number for longer and longer series.

These results are in striking contrast to those obtained by Ebbing-

haus by his method. He was able to recite series of 12 syllables (read rapidly) only after from 14 to 16 repetitions, series of 16 only after 30 and series of 36 only after 55. The number of repetitions increased with surprising rapidity as the length of the series increased. The limit of the length of the series Ebbinghaus could memorize was sharply defined. He found that when the number of series members exceeded even by a little the maximal number which one could just master after a single presentation, the number of members retained was less than when the series was shorter. Our author found, on the contrary, by her method of memorizing, that the number of repetitions necessary to memorize did not increase with surprising rapidity as the series length increased, but increased with surprising slowness. The subjects were generally able to remember after one presentation of a long series rather more than after one presentation of a shorter series. And, finally, there was no sharp limit to the length of the series which a subject could reproduce after a single presentation.

The fewer repetitions necessary by the reconstruction method than by the methods of Ebbinghaus and of Müller and Schumann are ascribed by the author to the leisurely recall and the slow method of presentation in the reconstruction method. As a consequence of this slowness, there is a lessening of the conflict between incipient associations—associations do not cross and interfere with one another—and there is a development of a memorizing technique which can not be gained with rapid repetition. Highly interesting introspective observations are given by the author of her own technique, which does not consist of mnemonic devices but of better apprehensions, grouping, and associating stereotyped imagery with non-verbal material. With her acquired technique she was able to memorize 81 nonsense syllables by the method of complete memorizing in less time than she had done it by the reconstruction method—in three quarters of an hour, the syllables being presented and recited at approximately one second intervals. It had taken about an hour and a quarter by the reconstruction method.

The author offers some valuable suggestions on the conduct of the memory and concludes with the observations that practise is probably transferable only within very narrow limits, that one's brute retentiveness can not be improved by training, but that a very great difference can surely be made by training in what one can do with one's brute retentiveness along specific lines.

ABRAM LIPSKY.

NEW YORK.

JOURNALS AND NEW BOOKS

THE INTERNATIONAL JOURNAL OF ETHICS. January, 1910. *The Ethical Aspect of the New Theology* (pp. 129-140): J. H. MUIRHEAD. - The New Theology rightly emphasizes the divine immanence but in the interest of morality must also recognize the divine transcendence. This suggests that the basis of theology must be in the thought of God as a unity of ideals at once beyond and active in human life. *The Present Task of Ethical Theory* (pp. 141-151): JAMES H. TUFTS. - In view of the present increasing development of scientific method and its successful application to the problems of life and society and also of the increase in social organization of all kinds, ethics should consider the reconstruction of such concepts as those of reason, the self, freedom, happiness, the state, our notions of which have been worked out under conditions quite different from those of to-day. *The Philosophical Attitude* (pp. 152-167): W. R. SORLEY. - The philosopher must consider both the nature of reality and the meaning of value, hence he must attain a point of view from which their relations are intelligible and this involves something more than loyalty to facts: it needs equal loyalty to ideals of worth. *Christian Morals and the Competitive System* (pp. 168-184): THORSTEIN VEBLEN. - The Christian principles of humility and mutual aid arose out of the servile conditions of late Roman times, the latter a reversion to primitive savage culture. The competitive principle is based on the economic conditions of petty trade following the revival of industry. These latter conditions being temporary, the ancient racial bias embodied in the Christian principle of brotherhood should gain ground at the expense of the pecuniary morals of the competitive system. *Pauperism: Facts and Theories* (pp. 185-198): THOMAS JONES. - A discussion of the majority and minority reports of the Poor Law Commission in Great Britain and an approval of the preventive policy recommended in the latter. *Ethics and Language* (pp. 199-216): C. W. SUPER. - A study of certain ethical concepts as embodied in language and illustrated in its history. *Book Reviews*: W. M. Urban, *Valuation: Its Nature and Laws*: HELEN WODEHOUSE. J. MacCunn, *Six Radical Thinkers*: E. BARKER. W. Bennett, *The Ethical Aspects of Evolution*: HENRY STURT. Paul Sourian, *Les Conditions du Bonheur*: S. WATERLOW. Charles H. Cooley, *Social Organization*: C. A. ELLWOOD. Graham Wallas, *Human Nature in Politics*: W. J. ROBERTS. Eduard Bernstein, *Evolutionary Socialism*: W. J. ROBERTS. A. C. Bradley, *Oxford Lectures on Poetry*: F. M. STAWELL. Georges Pellissier, *Voltaire Philosophe*: S. WATERLOW. William James, *The Meaning of Truth*: E. B. MCGILVARY. G. S. Brett, *The Philosophy of Gassendi*: HUGH A. REYBURN. Rudolph Otto, *Life and Ministry of Jesus*: NATHANIEL SCHMIDT.

Arnold, Felix. *Attention and Interest*. New York: The Macmillan Company. 1910. Pp. 272.

Bacon, Roger. *Opera hactenus inedita*. Fasc. I., *De Viciis Contractis* in *Studio Theologie*, *Fragmenta quæ supersunt nunc primum*, edidit

- Robert Steele, Oxford : Clarendon Press. Pp. viii, 56 ; Fasc. II., Liber Primus Communium Naturalium Fratris Rogeri, Partes Prima et Secunda, edidit Robert Steele. Oxford: Clarendon Press. Pp. iv, 137.
- Baldwin, James Mark. Darwin and the Humanities. Baltimore: Review Publishing Co. 1909. Pp. x + 118.
- Bergman, Hugo. Das Philosophische Werk Bernard Bolzanos, nebst einem Anhang : Bolzano's Beiträge zur philosophischen Grundlegung der Mathematik. Halle: Niemeyer. 1909. Pp. xiv + 230.
- Bury, R. G. The Symposium of Plato, with Introduction, Critical Notes and Commentary. Cambridge: Heffer & Sons. London: Simpkin, Marshall. 1909. Pp. lxxi + 179.
- Cook, Helen Dodd. Die Taktile Schätzung von ausgefüllten und leeren Strecken. Leipzig: Wilhelm Englemann. 1910. Pp. 130.
- King, Irving. The Development of Religion. New York: The Macmillan Company. 1910. Pp. xxiii + 371. \$1.75.
- Loeb, Jacques. Die Bedeutung der Tropismen für die Psychologie. Leipzig: Barth. 1909. Pp. 51.
- Mendousse, P. L'ame de l'adolescent. Paris: Félix Alcan. 1909. Pp. v + 315.
- Ribera, Julian. La supersticion pedagogica. 2 Vols. Madrid: Imprenta Iberica—E. Maestre. 1910. Pp. 236, 262.
- Ribot, Th. Problemes de Psychologie Affective. Paris: Alcan. 1910. Pp. 172.
- Savage, George H. The Harveian Oration on Experimental Psychology and Hypnotism. London: Henry Frowde. Oxford University Press. 1909. Pp. 44. 1s.
- Schinz, Albert. Jean-Jacques Rousseau, a forerunner of Pragmatism. Reprinted from the Monist, October, 1909. Chicago: The Open Court Publishing Company. 1909. Pp. iii + 39.
- Steenbergen, Albert. Henri Bergsons Intuitive Philosophie. Jena: Engen Diederichs. 1909. Pp. 110.

NOTES AND NEWS

PROFESSOR MORRIS JASTROW, JR., professor of semetic languages in the University of Pennsylvania, has begun a course of six lectures on "The Religion of Babylonia and Assyria," to be delivered in the Adams Chapel of the Union Theological Seminary, 700 Park Avenue, New York, under the auspices of the American Committee for Lectures on the History of Religion. Professor Jastrow's program is as follows : At 4:30, Friday, February 25, "Culture and Religion"; Tuesday, March 1, "The Pantheon"; Friday, March 4, "Divination"; Tuesday, March 8, "Astrology"; Friday, March 11, "Temples and Cults"; Tuesday, March 15, "Life after Death"; Ethics.

PROFESSOR JOSEPH JASTROW, of the department of psychology of the University of Wisconsin, has accepted the general editorship of a new series of psychological manuals for the general reader, to be known as the "Conduct and Mind Series." His own contribution to the series will be a work on "Character and Temperament." The introduction to an English edition of Professor Gross's "Criminal Psychology," about to be issued as the first number of a series of translations of important foreign works on the subject by the American Institute of Criminology, will be written by Dr. Jastrow. He left the university the second week of February to spend the second half year as lecturer at Columbia University.

SEVEN lectures on Contemporary Philosophic Thought, by members of the Department of Philosophy of Columbia University, will be given in Earl Hall at 4:10 P.M. as follows: March 1, "Bergson," Dr. Pitkin; March 8, "Maeterlinck," Professor Dewey; March 15, "Poincaré," Dr. Brown; March 22, "William James," Professor Miller; March 29, "George Santayana," Dr. Bush; April 5, "Josiah Royce," Professor Montague; April 12, "Eucken," Professor Lord.

PROFESSOR J. MARK BALDWIN has withdrawn from his editorial connection with the *Psychological Review* and affiliated publications. Professor Baldwin's services in promoting the publication of psychological studies in this country have been exceptionally great. His resignation is learned with sincere regret.

THE French Academy of Moral and Political Sciences has elected Professor William James, of Harvard University, a foreign member of the society, in the room of the late M. de Martens, of St. Petersburg. Professor James has been a corresponding member of the academy since 1898.

JAMES S. REID, professor of ancient history in the University of Cambridge, England, will give two courses at Columbia University, one on Roman Philosophy, with special reference to the *De Finibus* of Cicero, Mondays and Thursdays at 3:10, beginning on March 3, and one, for a limited number of students, on Greek Stoicism, Fridays, 3-5, beginning March 4. Professor Reid will lecture under the auspices of the department of classical philosophy.

PROFESSOR ETIENNE EMILE BOUTROUX, of Paris, will give a course of lectures at Harvard, and will give also four public addresses at Cambridge upon the "Essence of Religion" and the "Movement of Contemporaneous Philosophy."

DR. BERNARD BOSANQUET, formerly professor of moral philosophy in St. Andrews University, has been asked by the Senatus of Edinburgh University to become the Gifford lecturer for the usual period of three years, from October, 1911.

THE JOURNAL OF PHILOSOPHY

PSYCHOLOGY AND SCIENTIFIC METHODS

"A PLURALISTIC UNIVERSE" AND THE LOGIC OF IRRATIONALISM¹

THE eight lectures which comprise this book may be regarded as constituting something more than a prolegomenon to that system of pluralistic metaphysics which the readers of Professor James have so long been expecting. To the present writer the work appears to fall into two distinct parts: the first consisting of a convincing arraignment of the monistic conclusions and aprioristic methods of Hegel and his modern followers together with an exposition and defense of such pluralistic conclusions and empirical methods as those of Fechner, while the second consists of a very unconvincing exposition and defense of Bergson's critique of intellectualistic logic. I shall in this review consider the two parts of the book separately, attempting a sympathetic summary, largely in the author's own words of the first part, and a general criticism of the second part.

The introductory lecture is itself an admirable example of that free and unstilted method of philosophizing the propriety of which its author is at pains to defend. It contains an unconventional survey of present-day tendencies in philosophy, together with careful definitions of the various philosophical doctrines which the lectures will discuss. Empiricism is defined as "the habit of explaining wholes by parts," and rationalism as the opposite "habit of explaining parts by wholes." Aside from this division of method philosophical systems may be divided into the spiritualistic and the materialistic. The materialistic standpoint is passed over as being unlikely to interest the auditors of the lectures and the author proceeds to divide spiritualism into theism which "makes a duality of man and God and leaves man an outsider" and pantheism which expresses "the vision of God as the indwelling divine rather than the external creator, and of human life as part and parcel of that deep reality" (p. 30). Finally this pantheistic view is subdivided into a

¹"A Pluralistic Universe," by William James. New York: Longmans, Green and Co., 1909.

monistic or absolutistic and a pluralistic or empirical species. According to absolutism the substance of things "becomes fully divine only in the form of totality and is not its real self in any form but the *all*-form, while the pluralistic view is willing to believe that there may ultimately never be an *all*-form at all, that the substance of reality may never get totally collected, . . . and that a distributive form of reality, the *each*-form, is logically as acceptable and empirically as probable as the all-form commonly acquiesced in as so obviously the self-evident thing. The contrast between these two forms of a reality which we will agree to suppose substantially spiritual is practically the topic of this course of lectures" (p. 34).

The second lecture is mainly a criticism of absolute idealism as propounded by Bradley and Royce. The "foreignness" of the absolute is the first great objection which the author urges against it. "Mr. Bradley's absolute is neither intelligence nor will, neither a self nor a collection of selves, neither truthful, good nor beautiful as we understand these terms. It is in short a metaphysical monster. . . . It is us, and all other appearances, but none of us *as such*, for in it we are all 'transmuted' and its own as-suchness is of another denomination altogether" (pp. 46-47). In this and similar criticisms, the author hardly takes sufficient account of Mr. Bradley's contention that while the absolute is not truthful, beautiful, etc., as such, it does possess the positive and precious elements in each of these forms of experience, and omits in its own synthesis of perfections only the negative and imperfect elements with which these ideals are tainted in our finite experience. A peculiar aggravation of the foreignness of the absolute lies for Professor James in its timelessness. "It repels our sympathy because it has no history. *As such* the absolute neither acts nor suffers, nor loves nor hates; it has no needs, desires, or aspirations, no failures or successes, friends or enemies, victories or defeats" (pp. 47-48). Pluralism, in exorcising the absolute, exorcises the great de-realer of the only life we are at home in, and thus redeems the nature of reality from essential foreignness" (pp. 49-50). The tendency of the absolutists to fly to extremes and to propound false dilemmas to their adversaries is also criticized in this chapter. The absolutists charge pluralists with defending a world in which the facts exist independently of one another, and then proceed to interpret the term independence in such an extreme sense as to bar out all continuity and relation between the several facts. Having shown up to their own satisfaction the absurdity of such a conception, they draw the conclusion that the only alternative is a world in which there is no independent existence at all, each element being regarded a mere appearance or manifestation of one fundamental and all-embracing unity. Lotze's criticism of

interaction is cited by the author as a sample of this type of fallacy. To say that when two things appear to interact, they must be regarded as in reality two aspects of one thing, does not afford more than a merely verbal solution of the difficulty. Royce's attack on realism on the ground that if the object known could exist independently of the knower it could never enter into relation with the knower and could therefore never be an object of knowledge, is cited as a second case of the tendency of the intellectualist to fly to extremes. "Professor Taylor is so *naïf* in this habit of thinking only in extremes that he charges the pluralists with cutting the ground from under their own feet in not consistently following it themselves. What pluralists say is that a universe really connected loosely, after the pattern of our daily experience, is possible, and that for certain reasons it is the hypothesis to be preferred. What Professor Taylor thinks they naturally must or should say is that any other sort of universe is logically impossible, and that a totality of things inter-related like the world of the monists is not a hypothesis that can be seriously thought out at all. Meanwhile no sensible pluralist either flies or wants to fly to this dogmatic extreme" (p. 76). Professor James uses the term "vicious intellectualism" to characterize this general defect of absolutistic reasoning. "*The treating of a name as excluding from the fact named what the name's definition fails positively to include is what I call 'vicious intellectualism'*" (p. 60).

Lecture III. is a comprehensive and illuminating study of "that strange and powerful genius Hegel who has done more to strengthen idealistic pantheism in thoughtful circles than all other influences put together. . . . In no philosophy is the fact that a philosopher's vision and the technique he uses in proof of it are two different things more palpably evident than in Hegel" (p. 85). "Pluralistic empiricism knows that everything is in an environment, a surrounding world of other things and that if you leave it to work there it will inevitably meet with friction and opposition from its neighbors. . . . But Hegel saw this undesirable characteristic of the world we live in in a non-empirical light. Let the *mental idea* of the thing work in your thought all alone, he fancied, and just the same consequences will follow. It will be negated by the opposite ideas that clog it, and can survive only by entering, along with them, into some kind of treaty. This treaty will be an instance of the so-called 'higher synthesis' of everything with its negative; and Hegel's originality lay in transporting the process from the sphere of percepts to that of concepts and treating it as the universal method by which every kind of life, logical, physical or psychological, is mediated. . . . Concepts were not in his eyes the static self-contained things that previous logicians had supposed, but were

germinative and passed beyond themselves into each other by what he called their immanent dialectic. . . . This view of concepts is Hegel's revolutionary performance; . . . What he did with the category of negation was his most original stroke" (pp. 90, 91, 92, 93). After thus stating his general interpretation of the Hegelian philosophy, Professor James proceeds to illustrate it in detail, and to show how the true and valuable parts of the system are due to Hegel's vision of experience as a continuum in which the elements are perpetually flowing into one another, while the false and barren parts are due to his mistaken attempt to translate this perceptual vision into an artificial dialectic of concepts.

At the end of this chapter the author returns to his attack upon the monistic theory of the absolute, but from a somewhat different point of view from that of his previous attacks. He now criticizes the conception not so much on the basis of the false methods by which it is inferred, but on the ground of its inadequacy to satisfy the very demands of human experience from which it originated. Professor James concedes to the absolutists that their theory satisfies the craving for mental peace. It allows us to believe that ultimately and somehow all's right with the world. This belief is a source of comfort when we wish to take a moral holiday, to relax our own efforts to better the scheme of things. If we are assured that our weaknesses of omission and even of commission are together with all other forms of evil certain of being transmuted into good in that higher synthesis which is more real than all else, why may we not rest from our struggles confident that the world is guaranteed against any real loss? Professor James might have added that even this point of the doctrine is of questionable value in that it justifies not an occasional but a perpetual moral holiday. For it is not only on Sundays in church, but also on week days in the stock market, that we may salve our consciences with the comfortable conviction that the absolute performs continuously his function of transmuting our seeming evils into real good.

But passing from this point in favor of the absolute, Professor James brings against it three specific objections. First there is the familiar difficulty involved in the existence of evil. "Grant that the spectacle or world romance offered to itself by the absolute is in the absolute's eyes perfect. Why would not the world be more perfect by having the affair remain in just those terms, and by not having any finite spectators to come in and add to what was perfect already their innumerable imperfect manners of seeing the same spectacle? . . . Why, the absolute's total vision of things being so rational, was it necessary to comminute it into all these coexisting inferior fragmentary visions" (pp. 118-119). And again "The *ideally*

perfect whole is certainly the whole of which the *parts also are perfect*. . . . The absolute is defined as the ideally perfect whole, yet most of its parts, if not all, are admittedly imperfect. Evidently the conception lacks internal consistency and yields us a problem rather than a solution" (p. 124). The pluralist has no theoretical problem of evil. He accepts its existence as an ultimate datum and seeks to change it. Believing in a finite God who is striving to remove the evil that he did not make, he strives with him and can allow himself no moral holidays because he knows that God needs his help and needs it all the time.

A second objection that is here brought against the absolutists is the sterility of their conception in helping us to interpret or understand the world in which we live, "*the absolute is useless for deductive purposes*. . . . Whatever the details of experience may prove to be, after the fact of them, the absolute will adopt them" (p. 126). The third objection urged against the absolute is that in its capacity of all-knower it must contemplate perpetually all that is trivial, all that is silly, and all that is only negatively true. It must, for example, know "that this table is not a chair, not a rhinoceros and not a logarithm. . . . The rubbish in its mind would thus appear easily to outweigh in amount the more desirable material. One would expect it fairly to burst with such an obesity, plethora, and superfætation of useless information" (p. 128). To the reviewer this objection appears unfair, because it fails to credit the absolute with a sense of proportion or perspective. The presence of unimportant thoughts is only repugnant when they hold an important place in the mind of the thinker, and distract the attention from what is more important. With our limited scope of consciousness we can not afford any time or energy when we are thinking of the positive characters of a chair for the reflection that it is not a logarithm nor a rhinoceros. Then again we should remember that the seeming barrenness of negative propositions is due to their being considered in isolation from their positive correlates. The negative characters of things exist only as consequences of their positive characters. It is uninforming to know merely that the moon is not where the sun is, but when we supplement this with a knowledge of the place where the moon is the negative knowledge combines with the positive in a perception of distance relation of sun and moon. The complete view of the negative qualities of the things in the world would amount to nothing more than the view of their positive relations to one another. Put formally, we can say that the proposition *A* is not *B* is only a back-handed and partial expression for the fuller truth that *A* is *C*.

But Professor James is content to claim for these various objections not that they refute completely the absolutistic theory, but that

they at least legitimize as a plausible hypothesis the rival pluralistic belief in a "strung-along unfinished world in time . . . a world in which *reality* MAY exist in distributive form, in the shape not of an all but of a set of eaches, . . . that are at any rate real enough to have made themselves at least, *appear* to every one, whereas this absolute has as yet appeared immediately to only a few mystics, and indeed to them very ambiguously" (p. 129).

In the fourth lecture Professor James considers the philosophy of Fechner as a system which resembles that of absolute idealism on the single point of holding, that the many human consciousnesses are somehow combined in the unity of a superhuman consciousness, but which differs from absolute idealism on all other points. The most important of these differences are:

1. The cosmic mind of Fechner unifies and supplements its finite elements without diminishing or transmuting their reality as individual beings. We are constituent parts of the higher mind, but are not in any sense its unreal appearances. The Fechnerian earth-soul and the other still more inclusive souls are mightier than we, but not more truly real.

2. For the meager abstract outline of a single absolute mind which modern idealists present, Fechner substitutes the splendid hierarchy of superhuman minds whose probable natures are concretely portrayed in rich and plausible detail.

3. For the *a priori* intellectualistic dialectical methods by which Hegel and his modern followers seek to prove their view, Fechner substitutes the empirical methods of induction and analogy.

With sympathetic insight, Professor James gives to us a biographical sketch of Fechner, an account of his general standpoint and many illustrations of his specific conclusions and the specific methods by which he attained them. One gains an impression of Fechner as the ideal type of philosopher: one who combines the enthusiasm and soaring imagination of a poet with the information and the intellectual conscience of a man of science. To the followers of Hegel the comparison of the two men should prove odiously effective. What the author characterizes as the "thinness" of Hegel and more particularly of his modern disciples, is set over against the "thickness" of Fechner. By "thinness" the author means not only what he has previously described as vicious intellectualism, but also the habit of substituting the verbal refinements and subtleties of a dialectical epistemology for the concrete and empirical problems which should press on the philosopher for settlement. From thin methods result thin conclusions—conclusions that are meager, abstract, and formal, lacking in concreteness and detail. Fechner's speculations are, on the other hand, thick in method and in conclusion, which is to say

that they are conducted by empirical and inductive methods, and attain to a corresponding concreteness of result. Of course what Professor James praises in Fechner as "thickness" will be contemptuously characterized by the Hegelians as "picture-thinking" and "mythology"; while his attempt to enlist in the service of philosophy the common or garden categories of mere physical science will be regarded as an offense against the dignities of the profession. But as if anticipating such objections Professor James reminds us that the categories and the methods used by his hero are the only ones that have proved adequate to produce universally accepted bodies of doctrine. And it would be a pity if the dignity of philosophy were incompatible with the employment of the only reliable means of attaining truth.

At the beginning of this review I described Professor James's book as an exposition and defense of two positions, the first comprising a refutation of the conclusions and methods of absolutism together with a vindication of the conclusions and methods of pluralism, the second comprising an examination and acceptance of Bergson's critique of the intellectualistic logic. With the chapter on Fechner the evidence supporting the first of these two positions is pretty much all in. It is true that here and there throughout the remainder of the book, and more especially in the concluding chapter, the author reiterates and supplements his earlier arguments. But the principal theme of the last four chapters is the defense of the new Bergsonian logic. To the reviewer the two parts of the book seem to involve distinct issues. Certainly one might easily agree with the author's conclusions as set forth in the first part and radically disagree with those of the last part.

Lecture V., on the "Compounding of Consciousness," is a kind of introduction to the new topic. Professor James begins by confessing to a curious feeling of sympathy with certain phases of the absolutist doctrine which as seen from the point of view of mere logic can not be defended. The question which particularly troubles our author and which has, as he tells us, troubled him for years, is that of the identity or non-identity of a collective experience with the sum of its seemingly constitutive distributive experiences. They can not logically be identical, as the absolutist claims, because each experience has its *esse* in its *sentiri*, and the experience of a whole is not the sum of the experiences of its parts. But if, on the other hand, we regard them as non-identical, as Professor James himself had advocated in his "Psychology," "the whole philosophic position thus produced is almost intolerable. Loyal to the logical kind of rationalism, it is disloyal to every other kind. It makes the universe discontinuous. These fields of experience that replace each other so

punctually, each knowing the same matter but in ever-widening contexts, from simplest feeling up to absolute knowledge, *can* they have no *being* in common when their cognitive function is so manifestly common? If you reply that their common object is of itself enough to make the many witnesses continuous, the same implacable logic follows you—how *can* one and the same object appear so variously. Its diverse appearances break it into a plurality; and our world of objects then falls into discontinuous pieces quite as much as did our world of subjects. The resultant irrationality is quite intolerable” (pp. 205–206). Here then is the dilemma which Professor James feels so poignantly that, after having, as he tells us, “struggled with the problem for years, covering hundreds of sheets of paper with notes and memoranda” (p. 207), he is now willing to abandon the old logic and adopt a Bergsonian irrationalism from the standpoint of which any merely intellectualistic contradiction can be accepted with the understanding that logical concepts and their relations are but the imperfect means or instruments by which we try to control the intrinsically illogical flux which constitutes the ultimate reality of life. As the validity of this dilemma is crucial for most of the conclusions that are stated in the latter half of the book, it behooves us to examine it with some care. Professor James himself states one possible way out, but only to reject it as useless. If the old hypothesis of souls were revived it might, he tells us, be possible to regard different souls as synthesizing differently the same mental states. But, he adds, it would be vain to have recourse to this hypothesis, for “You see no deeper into the fact that a hundred sensations get compounded or known together by thinking that a ‘soul’ does the compounding than you see into a man’s living eighty years by thinking of him as an octogenarian. . . . Souls have worn out both themselves and their welcome, that is the plain truth” (pp. 209–210). And we may acquiesce in this verdict against the soul at least so far as concerns its power to help us in this problem. Let us then return to the author’s main problem: *How is it possible to reconcile the conviction of common sense that the same things can be at once both distributively and collectively known, with the logical conviction that the experience of things as parts can not be identical with the experience of things as a whole?* By way of criticism I wish to demonstrate two theses (1) that there is a conception of experience that makes these supposedly incompatible demands perfectly compatible and logically compatible; (2) that even if this were not so Professor James’s condemnation of logic, as an imperfect instrument for attaining truth, would not be justified. First with regard to (1): If the object experienced is not identical with the act of experiencing it, *i. e.*, if we conceive experience realistically as

a cognitive reference to an object other than the reference, there is no more contradiction in thinking of many witnesses of the same object than in thinking of many people pointing at the same object. It is only the idealist who is compelled to admit that there are as many objects as there are witnesses. For him the witnessing or act of experience constitutes the object witnessed; its *esse* is *percipi*. And if the world is objectively one system of facts then he is compelled to hold that there is only one real self or witness—the absolute—of whom we finite selves are the mere appearances. Now let us extend this principle to the case in which the different witnesses are supposed to witness the same object but in different aspects. The child learning to read sees only the letters or perhaps the words; his teacher sees the letters and the words which the child sees, but he sees also the sentence which the child does not see. The same things are perceived by each witness, but one sees them in their collective aspect or context while the other sees them only distributively. From the realistic point of view there is no contradiction, no puzzle, no mystery in this situation. To say that the same thing can have many aspects and many relations means merely that many qualities can be actualized or exemplified or coexistent in the same space and time, and that relations that are different as respects one of their terms are not different as respects the other. The same table can be both wooden and round. The same number can be both half of thirty and three times five. The same word can consist of the letters *d*, *o*, *g* and also be the name for a familiar animal. And as a thing is capable of having different qualities and relations without prejudice to its numerical identity, so also it is capable of being known to one witness in some of its aspects and to another witness in other of its aspects. I perceive the table to be heavy and round, you perceive it to be old and valuable. Do we therefore perceive numerically different tables? Or, if human beings perceive only fragments of the world and a superhuman being perceives not only the fragments but the way they fit together, the collective aspect of them, the meaning of the whole which they constitute—would this imply that we must either abandon logic or else abandon common-sense and admit that there are two wholly separate worlds? Surely this proposed dilemma is absurd except on the single assumption that the thing experienced is the experience of that thing. If this assumption were true then it would indeed follow that things experienced collectively, as by an absolute, could have nothing in common with things experienced distributively, as by us. For the *experience of a whole* is not numerically identical with the *experience of its parts*. The experience of a table as merely round and hard is not identical with the experience of it as old and valuable.

And what except this idealistic assumption can Professor James have in mind when he says "If you reply that their common *object* is of itself enough to make the many witnesses continuous, the same implacable logic follows you—how *can* one and the same object appear so variously? Its diverse appearances break it into a plurality; and our world of objects then falls into discontinuous pieces quite as much as did our world of subjects. The resultant irrationality is really intolerable" (p. 206). One further point in this connection: Not only is it possible from the realistic standpoint for many witnesses to view the same objects in their different aspects, but it is also possible for the point of view of one witness to be as such an object of knowledge for another witness. When I see a play or read a novel I not only view the same objects that are viewed by the fictitious persons, but their several view-points are themselves experienced by me as elements of the situation. Any conscious subject can be himself the object for any other conscious subject. There is then nothing logically self-contradictory in the absolutistic conception of a supreme witness for whom the whole world of objects together with the finite witnesses of those objects is viewed as a single unified system of experience and facts. Of course such a situation would not necessarily imply the dependence of these facts upon the will of the all-seeing witness, nor would it imply that our finite selves were in any sense unreal or our points of view in any sense false. To put the whole matter briefly the dilemma involved in the problem of 'how mental states can be compounded' is a mere bogey of the subjectivistic imagination. From the realistic standpoint it has no existence; and yet it is on the supposed validity of this dilemma that Professor James bases his revolutionary proposal to abandon logic and its principle of contradiction as inadequate to formulate the irrational flux of reality. The whole procedure is the more surprising because, if I mistake not, Professor James's recent articles on the nature of consciousness have been definitely realistic in tone. In his article "Does Consciousness Exist?" I understood Professor James to advocate that form of realism which had elsewhere been termed the relational theory of consciousness—the theory that consciousness does not exist as a substance or as a series of qualities but only as a special kind of togetherness or external relation into which the independently existing facts are brought by means of their causal connection with the nervous system. From such a point of view "being known" or "being experienced" would only mean "being in a certain relation to an organism" and it would seem as easy for the same facts to have membership in different systems (to be, for example, respectively, collectively, and distributively experienced) as for the same object

to be pushed from behind and pulled from in front. But in that part of "The Pluralistic Universe" now under discussion I can find no trace of its author's recently published realistic theory of consciousness but only the old noxious assumption that a cognitive experient is essentially incapable of experiencing anything beyond his own states and processes.

And now a word as to the second of the two theses offered by the reviewer in protest against the author's proposal to abandon the intellectualistic logic. Suppose that all of the above criticism is invalid. Suppose that Professor James is right in believing that the puzzle of how to reconcile with logic the evident community of the each-form and the all-form of the same subject-matter is insoluble. Would he even on this assumption be justified in regarding reality as irrational? Zeno, the Eleatic, was confronted by precisely the same type of situation as that which confronts Professor James. For Zeno too felt that he had discovered an antinomy between sense-experience on the one side and the intellect with its demand for non-contradiction on the other. Motion was self-contradictory, but motion was the all-pervasive fact of the world of sense. Zeno chose the intellectualistic horn of the supposed dilemma. Motion and consequently the whole world of experience was pronounced an unreality, a mere appearance, a product of *Mâya*, a case of non-being. Pure abstract being as the only thing not tainted with self-contradiction was alone real. Zeno's answer to the problem is unsatisfactory because facts, when viewed from the practical standpoint, do not exhibit any appreciable discomfiture when some philosopher classifies them as subjective, nor are their puzzling or paradoxical characters in any way theoretically clarified or explained by degrading them to the status of mere appearance. It is as difficult for the mystic to reconcile the existence of evil with the existence of an omnipotent God when evil is called a tragic illusion as when it is called a fact; it is as difficult for Zeno to explain how Achilles can catch a tortoise in a world of non-being as in a world of being; it is as difficult for Kant to explain the puzzles involved in the infinity of space and time when these are called subjective as when they are called objective; it is as difficult for Bradley to explain the presence of the relational paradoxes in a world of appearance as in a world of reality. From Zeno to Bradley the attempts to solve the world's puzzles by calling the world names—such as "non-being" or "appearance"—is fatuous and leads nowhere. When Zeno found what seemed to him to be a hopeless conflict between logic and experience he felt that he was confronted with the dilemma of condemning one or the other to the realm of unreality, and he preferred to condemn experience. But

he overlooked the third possibility. He might have confessed that his use of logic must have been wrong, that what appeared to be the irrationality of motion might in reality be simply *his* failure to discover its rationality. Professor James feels himself in the same dilemma and, like Zeno, he impales himself on one of the horns—only it is the opposite horn to the one appropriated by the Eleatic. He prefers irrationalism to acosmism; Zeno prefers acosmism to irrationalism. James is as oblivious as Zeno to the third possibility—the possibility that what appears to him to be the irrationality of the collective-distributive identity may in reality be simply his failure to discover its rationality. It is as arrogant for a Bergsonian as for an Eleatic to insist that the world must be either unreal or irrational, simply because of a failure to solve one of the world's problems. And not only are the two answers equally arrogant, but they are equally irrelevant. We have seen that it is in no sense a relevant answer to the question—How is it logically possible for Achilles to catch the tortoise? to say—He catches him in a realm of non-being. Is it not equally irrelevant to answer the question, How is it logically possible for the same thing to be viewed under different aspects by saying? It is not logically possible, but only illogically *so*. Any problem of this kind is a question of giving a consistent and intelligible analysis of a situation—it is a question of how we can fit logic to fact. If we can't make the fit, so much the worse for us. We can grin and bear it or we can try again, but we certainly should not flatter ourselves that we have solved a problem by taking the position that it has no solution—even if we dignify that position by calling it Bergsonianism or anti-intellectualism. But to deny the adequacy of logic to cope with experience and to regard this denial as itself clarifying the situation is just such an irrelevancy. To defend irrationalism or anti-intellectualism as a solvent of intellectual problems is simply to say "I won't play." Indeed, on coming to this latter part of the book I felt as if I were observing a great chess-player who, having met move after move of his opponent with unfailing success, becomes suddenly and needlessly puzzled by some trivial attack and in a pet of discouragement kicks over the table, spills the pieces, and then declares that he has won the game. Professor James has found the old logic quite good enough to formulate his attack on absolutism and his vindication of pluralism and one wonders how he can feel that his action in throwing it over is necessary, justifiable, relevant, or helpful.

After stating at such length the reasons against adopting irrationalism, I have little space left to follow out in detail Professor James's use of the new method. The general view presented in lectures VI. and VII. seems to me to be somewhat as follows: Real-

ity is essentially a flux of pure experience in which nothing is absolute, determinate, or static. The *élan vital* or driving principle of this flux evolves thought as a secondary or subsidiary activity, the function of which is to depict the qualities of the flux in terms that are suited to control it. The way in which thought performs its seemingly difficult function is to extract from the flux the qualities which modify it, and perpetuate them in static form as concepts. By observing the relations which subsist between these concepts we can anticipate and control the course of life. But these concepts, useful as they are, will be essentially incapable of presenting the dynamic aspect of the flux. You can photograph a moving body in any or all of its successive positions, but you can never photograph the movement itself. A system of concepts will fall short of adequately representing the living flux of reality in the same way and for the same reason that a series of photographs fall short of adequately portraying a moving body, or a series of cross sections of portraying a developing embryo. The only way to get an insight into life is to live. Intuition, and immediate experience, are alone able to provide the element of continuity which is so characteristic of the real. From this point of view we should expect to find the intellect baffled in the attempt to conceptualize such problems as those of Zeno relating to space, time, and motion. And on the same basis with the Zenonian problems is the especial *bête noire* of our author—the problem of how one and the same system can have the each-form of distributive plurality and the all-form of collective unity. What is logically self-contradictory is intuitively and experientially intelligible. And the interpenetration of each member of a system with all the other members is repugnant to logic only because logic is not adapted to express the synechistic essence of the living real.

To this Bergsonian² view of the thought-function I will mention but one objection. In ascribing to thought a power of extracting from reality certain of its elements, it commits precisely the same fault and falls into the same confusion that can be charged to the vicious intellectualism of Bradley and Hegel. The confusion consists in ascribing to objects of thought the properties of thought-symbols. And the fault consists in regarding the activity of thought as in some way constitutive or reconstitutive of its own objects. When I make the judgment *A* is *B*, I do not tear out the attributes *A* and *B* from the living unity of experienced reality and then try to piece them together again by the use of the word *is*. I simply

² It should be clearly understood that, both here and elsewhere, the position which I am criticizing as Bergsonian is simply the position which, as I understand it, Professor James ascribes to Bergson.

recognize that there are two qualities *A* and *B* and that these qualities coexist in the same object or coinhere in the same substance. Considered as written or oral symbols *A* and *B* are manipulated by me. They are separated and then united. But the objective qualities that they denote are in no sense changed or queered by the process. They are simply apprehended as standing in a certain relation. As Locke remarked, Man did not have to wait for Aristotle's definition in order to become a rational animal. The attributes of rationality, animality, and humanity coexisted in one object and to make the judgment "Man is a rational animal" is simply to call attention in terms of symbols understood by your neighbors to the fact that you have apprehended or recognized that relation. *A judgment about an object is not an event in the life of that object, but only in the life of the person making the judgment.* And yet from Kant down there has been current the perfectly imbecile doctrine that in conception we tear the immediately experienced reality into separate pieces and in judgment we put the pieces together. Bradley recognizes that we can't get the pieces together satisfactorily, and on the strength of this inability of thought to repair by its judgments the disrupting work of its concepts, postulates an absolute whose business it is to restore in an inconceivable manner the unity that our conceptual experience has shattered into fragments of appearance. Now Bergson, as represented by James, ascribes to thought the same preposterous activity of disrupting the continuity of the given, but instead of declaring reality to be superrational and postulating an absolute he declares reality to be subrational and postulates an *élan vital*. It seems to me extraordinarily perverse to suppose that a flux or a movement or anything else becomes especially static or discrete or in any way different from what it is simply by being made an object of thought and having judgments made about it. And yet if we confuse the properties of the objects thought of with the properties of the thought-symbols, it is easy to see how the step could be taken. The conceptual symbol for motion is static, and if in order to think of motion I must identify it with its symbol, why then of course I have falsified it and may expect to find my logic helpless to do justice to its character. But when I conceive of motion it is *motion* that I conceive of, and not a misrepresentative and static substitute for it. When I attend to some aspect or element of the experienced flux, I have a concept of it, and this does not imply that I have torn it out of its context and swallowed it, but only that I am pointing to it, just as it is, in its context. To "think" is only to *attend selectively* to the various elements, aspects, and relations of the given reality, and to record in symbols that which I have observed. To say that the intellect falsifies a reality that is continuous

and mobile because it breaks it up into cross-sections that are discrete and static, is as wrong as to say that the eye can only see space as a system of colored points. The eye has no difficulty in seeing space as continuous and the intellect has no difficulty in apprehending change. When we are confronted with a situation that appears to involve a paradox or an antinomy, such for example as Achilles catching a tortoise or, if Professor James prefers, the collective unity of distributively distinct elements, we should recognize that the trouble is due not to the situation being unreal (Zeno), nor to the staticizing misrepresentation of the intellect (Bergson), but rather to our own private inability to apprehend certain relational aspects of the facts before us.

These then are the considerations which I would urge in criticism of our author's attempt to ally his own new metaphysics of pluralism with the new logic of Bergson. But whether the logic of irrationalism be logically valid or not, it seems to me beyond dispute that such a logic has no necessary identity with the metaphysics of pluralism. Each doctrine can stand or fall independently of the other. Indeed, as far as I can see, this whole business of anti-intellectualism is no more incongruous with monism than with pluralism. Aside from Schopenhauer there have been various mystics who have not been averse to associating the most extravagant forms of monism with a hearty contempt for the logic of self-consistency.

And as a last word to this much-belated review, I should like to express very timidly the hope that when Professor James publishes his final system of pluralistic metaphysics he will, purely out of kindness to those of his admirers and disciples who still have the intellectualistic taint, consent to segregate all new and fancy logics made in France, in an appendix, where those who want them can find them, but where they will not intrude to dampen the enthusiasm of those who don't.

W. P. MONTAGUE.

COLUMBIA UNIVERSITY.

TO RECONSIDER THE ASSOCIATION OF IDEAS

I

ARISTOTLE described the association of ideas as by contiguity and resemblance. He also stated that the law of the process is the law of habit. "Mental movements," he says, "follow one another, this one after that, by habituation."

Modern psychology, beginning with Hume, accepted his description of the process and rediscovered his explanation. And the

psychology of association is now of two kinds, that which occupies itself with describing the process, and that which occupies itself with expounding the law. Of the latter James's book is an example. He shows clearly, as is well known, how association by contiguity and by similarity are both examples of the redintegration of an experience following the law of habit. Association by contiguity is obviously so: if I think of a football I think also of a field and thus complete an experience. Association by similarity, less obviously: if I think of a football, and realize its rotundity, I am thinking of rotundity, which calls up the contiguous features of a former experience, and so I am thinking of the moon.

All this is what Aristotle pointed to in what he said about habit. Thus the cycle of development has been to start from Aristotle's description of the process, and to arrive at his explanation of it.

II

Aristotle and his followers explain why association proceeds as it does, but neither he nor they explain why it proceeds. Nor do they describe the point at which the process begins. Whereupon does a similar or contiguous experience begin to be recalled? And why does habitude in the brain make its past performances conscious? Is not the similarity of to-day's experience to yesterday's the very basis upon which I remain unconscious of yesterday's? And is not habit what allows brain processes to become unconscious? And if these statements are true how can a point of similarity begin the recall of a former experience, or habit explain its coming into the mind?

III

The truth is that while we have apprehended the nature of the process, we have accepted from Aristotle exactly the wrong names. It is at a point of contrast that association begins, and it is upon the interruption of habit that a former experience revives in the mind. Similarity of experiences is a condition of thought, but an important difference is its cause.

Hence a revision of terms might be made in the psychology of association. Where one says association by similarity he might say dissociation through contrast. Where he says association by contiguity, he might say dissociation because of discontinuity, or some such words. And where another says partial redintegration because of habit, he might say the separating out or the recall of a past experience when habit is upset. Memory, he should say, is interrupted assimilation. At least he should say these things if he means to show and explain when and why association, or thought, occurs. If he wishes simply to show that it occurs, and also that it occurs in

one way rather than another, Aristotle's terminology will do. He said nothing false about association, but he did not explain its occurrence.

Perhaps the reason for this was that Aristotle was a system-maker, and if thought, or any other thing, happened to be predictable from or assumed in his highest principles, it would not occur to him to give it a natural explanation. Which is itself an example of the failure to think, or to dissociate ideas, because of the perfect operation of habit.

IV

It is possible, therefore, that the cycle of development in theories of association will not close with Aristotle's statement about habit, but will extend as far back as Plato. For Plato was not habituated to any system of philosophy, and it could occur to him that anything needed explaining. He suggests a good explanation of the occurrence of thought in the seventh book of "The Republic."

"I mean to say," he says, "that objects of sense are of two kinds; some of them do not excite thought because the sense is an adequate judge of them; while in the case of other objects there is a mistrust of the senses which only stimulates inquiry. . . .

"Exciting objects are those which give opposite sensations; as when the sense coming upon the object, and this not only at a distance, but near, gives no more vivid idea of any particular object than of its opposite. An illustration will make my meaning clearer; here are three fingers—a little finger, a second finger, and a middle finger. . . .

"Each of them equally appears a finger, whether seen in the middle or at the extremity, whether white or black, or thick or thin—that makes no difference; a finger is a finger all the same. And in all these cases the question, What is a finger? is not presented to the ordinary mind; for the sight never intimates to the soul that a finger is other than a finger. . . .

"And therefore, I said, there is nothing here which excites or quickens intelligence."

Plato is credited with interrupting the course of true science. But his was the most scientific approach that the ancients made to psychology. It failed to stimulate Aristotle, and was lost. But it may well be remembered because it was an attempt at a causal explanation of what lesser scientists have taken for granted.

If my finger to-day is similar enough to my finger yesterday, in quality and function, no association or recall occurs—albeit similarity and contiguity, habit and redintegration, are present respectively in the objects and the brain. But when a difference occurs, a discontinuity, a failure of function, a break in the cerebral repetition, when,

for instance, an unexpected thumb appears—then the finger yesterday becomes an associated idea. As Plato observed, it is when we are shocked that intelligence is quickened.

V

A return to Plato in this matter affects logic and philosophy. Logic assumes that the world appears infinitely various until thought discovers identities in it, reducing it to order, and finally (at least in hope) to unity. But in evolution and life, on the contrary, the world appears first a mere succession of identical experiences, a nearly perfect order, and only with the development of the organism do difference and disorder appear. And although it becomes the business of the nervous system to find and coordinate working similarities in this increasing chaos, the fact remains that the differences increase so long as the organism develops. The aspiration of the intellect, therefore, need not be to hoard up identities, and perfect a system—a program which is within the attainment of a mollusc, and of any one who wishes to abstract sufficiently from his perceptions. A wiser aspiration would be to awake clearly to the greatest multitude of differences, know them as differences, and yet retain, through the discernment of similarities important to life and pleasure, an equilibrium of body and character.

MAX EASTMAN.

COLUMBIA UNIVERSITY.

EGOISM, ALTRUISM, CATHOLISM. A NOTE ON ETHICAL TERMINOLOGY

THE careful reader of the "Data of Ethics" must be struck with the fallacies involved in Spencer's use of the term altruism, or as he puts it more emphatically, "pure altruism," under which term he classes the Hebrew and Christian ideals embodied in such maxims as "Thou shalt love thy neighbor as thyself." The fallacy is partly due no doubt to Spencer's somewhat biased attitude toward the ethical doctrines in question, and partly to his too customary superficial and mechanical thinking, but the error is made easy by an evident gap in our ethical terminology, to which we desire to call attention. We have the two traditional terms, *egoism* and *altruism*, which may be roughly but clearly defined as denoting the self-regarding and the other-regarding impulses, respectively; but we have no accepted term for the balance or adjustment between these two sets of impulses which constitutes righteousness. For this concept we propose the term *catholism*, and suggest briefly some reasons for its adoption.

The chief reason for the adoption of some fixed term for the concept in question is the tendency to fallacy caused by the lack of the term. Altruism is constantly used to denote not the group of other-regarding impulses as distinct from the self-regarding and opposed to them, but the ideal attitude, or righteousness. This is plainly due to the fact that the egoistic impulses are racially complete while the altruistic impulses are of later origin and less fully developed, and that unrighteousness in general results from a deficiency in the altruistic element; thus altruism has come to be identified with righteousness—*altruistic* has come to mean *good*, and *egoistic*, *bad*. The truth is of course that righteousness and good are always, as Spencer indicates, the result of conciliation between the two sets of impulses. In fact, if we could conceive of an organic world in which the altruistic impulses had preceded the egoistic in order of evolution, then in such a world altruistic would naturally have become the synonym for bad and egoistic for good! It is this idea of conciliation which Spencer desires to make clear in his chapters on egoism and altruism; unfortunately in his eagerness to find the conciliation in question he runs blindly over it as it exists in the maxims which he denominates "pure altruism."

Altruism is, in fact, of almost infinite variety; in itself it is neither moral nor immoral, but merely a part of the material out of which morality is built. It is a mere truism to say that altruistic motives may sometimes lead to immoral conduct: thus, for the love a man bears his wife he may rob his employer, or speculate with the money of widows and orphans; or he may even be tempted to actual violence or murder. The fact is that the conflict and adjustment of the interests of *some* others and *other* others, may at times be more striking and difficult to me than the conflict between *my* interests and those of others. The very weakness of altruism is that its honors may be claimed on the ground of having served the interests of any "others"; while the conduct involved may be hardly distinguishable from selfishness.

There are two conceivable types of immoral altruism: first the type that disregards the interests of the actor himself; doubtless such altruism exists in certain rare cases, usually in connection with deep religious feeling and conviction. It is conceivable, as Paulsen and Spencer hint, that a time might come in the development of the race, when this form of altruism would be a real peril. Even admitting the theoretical possibility of this, it is probably far enough removed from our day so that we need make no efforts to avert it. This type for the present is harmful only as affording a straw figure for the attacks of those who incline to look with disfavor on Christian ethics and allied doctrines. The other type of immoral altruism has al-

ready been indicated above, as the attitude in which the actor ignores the interests of those remote from him and considers only his immediate friends and kindred.

The ideal attitude of will is that which impartially considers all *claims*; not all persons in the universe, be it noted, as Spencer so often seems to assume, but all persons who are affected by the conduct in question. The fair calculus for estimating the balance of interests is never a mere counting of individuals, or even of those affected, but demands always a quantitative and qualitative estimating of the interests of those who will be touched by the action under consideration.

The two most essential points in avoiding the current fallacies regarding the relation between egoism, altruism, and the right, are, first, that the right always considers self as well as others; no rule of conduct has ever been accepted by moral or religious leaders which ignores this point, as is seen by careful consideration of such formulas as the Golden Rule, the Hebrew commandment, "Love thy neighbor as thyself," and other traditional phrases. Second, all interests must be considered in proportion to the degree to which they are affected. This is the point that Spencer entirely ignores in the *Data*, and for which he substitutes a mere numerical ratio; somewhat thus: the Self ($= 1$) is to all, as 1 is to an infinite number; therefore the rule, loving one's neighbor as oneself is practically equivalent to loving the neighbor and not loving oneself at all. The utter fallacy of this—which any practical man feels by a sort of intuition—becomes apparent when we quantify the units in the proportion; in many cases, probably in the majority of our minor acts, the real interest of Self is greater than the total of all the interests of others concerned.

Two words besides altruism should be considered as suitable terms for the idea under discussion. The first is utilitarianism, which was undoubtedly intended to cover this concept. Two serious objections would forbid its adoption: its origin and history have bound it inseparably to the peculiar doctrines of Bentham and Mill; and the term itself does not denote the essential element in the concept, which is not happiness or utility or value, but the recognition and adjustment of all interests concerned. The other term is the adjective universalistic; the first objection is the lack of a suitable noun without conflict with the established use of the word universalism as denoting a religious denomination. Besides, the term universalistic does not imply any idea other than the mere inclusion of all, without any regard to proportionate interests.

The term we would suggest is *catholism*, with the adjective *catholicistic*; these words avoid confusion with the religious terms

catholic and catholicism. The term catholicism is a fitting third in the series of which the first and second are egoism and altruism. Etymologically it denotes the concept exactly: a consideration of the claims of *all* concerned, and in due proportion. It has not been appropriated for any other use which could conflict with the proposed denotation; indeed, so far as the writer knows, the word is not found in the dictionaries. It is also reasonably short, and in accord with the analogy of the language.

EDWARD O. SISSON.

UNIVERSITY OF WASHINGTON,
SEATTLE, WASHINGTON.

ANALOGY AND SCIENTIFIC METHOD IN PHILOSOPHY

ANALOGY is important in philosophy: first as forerunning analysis (certainly not as substitute for analysis). Second, as ballasting judgment, and lending proportion to an argument. Third, as offering common ground of approach into regions where the attack of "pure thought" is bound to vary with the thinker, both in point of beginning and in method. If philosophy is to have the weight of science in our present life, it is more necessary to gain a body of agreement than to adopt the form and clothing of exactitude. And if it be true, as I believe, that without the free use of analogy we shall scarcely come to understand one another's meaning, much less to reach agreement on any given problem, it may be that the first step toward giving philosophy in fact the character of a science is to forego the use of scientific forms as an exclusive or even primary mode of presenting our thoughts to the world and to each other. We may or may not abandon the scientific ideal; but we must recognize the peculiar and supreme difficulty of philosophy—the absence of that aid which physical nature gives all other sciences in the work of outlining their concepts. Analogy, with all its obvious dangers, less dangerous because obvious, is the only substitute for this invaluable fixative.

WILLIAM ERNEST HOCKING.

YALE UNIVERSITY.

REVIEWS AND ABSTRACTS OF LITERATURE

The Classical Moralists. BENJAMIN RAND. Boston: Houghton, Mifflin Co. 1909. Pp. xix + 797. \$3.

The nature and purpose of Dr. Rand's new compilation can best be stated in the words of his preface. "The book is virtually a history of ethics, based not upon the ordinary description of systems, but upon selections from the original sources and upon translations of the authors themselves. It is sought, so far as is practicable, to present by means of

the case method the most distinctive and constructive features in the ethical systems of the successive moralists. The evolution of ethical thought is thereby revealed, stripped of its controversial material, from Socrates to Martineau. Such a work, it is hoped, will prove indispensable as a text-book of required reading, alike for the historical and for the systematic study of ethics in the universities."

Any criticism of a work of this kind must concern itself either with its general plan or with the details of its execution. As to the latter, although there will always be differences of opinion over what to include and exclude, Dr. Rand's judgment must commend itself in the main to every one. Three quarters of the space are devoted to modern writers, but this is just, in view of the accessibility of good classical translations and of the variety of modern theories, though one may well blame the originals themselves for not imitating the brevity of the ancients. Perhaps the greatest gap in the documents will be found in the interesting transition from medieval to modern ethics. Hobbes would not present such a violent break with the past were he read in the light of the later scholastics. Even Hooker, champion of the law that he is, paints a state of nature in colors whose gloom rivals that of Hobbes himself, and in general his influence upon the seventeenth-century thought was great enough to deserve notice. Again, it might have been well to introduce such a representation of the transition period as Charron with his practical and independent "*de la Sagesse*," a book far worthier of study than Wollaston's "*Religion of Nature*," part of which is included. So, too, a great service would have been rendered by the inclusion of Gay's "*Introduction*" to Law's translation of Archbishop King's "*Origin of Evil*," a work both scarce and valuable as the beginning of the associational school of morals. But these are minor points in eight hundred pages of excellently selected material.

As to the value of this kind of book opinions might differ more seriously. That it has value is unquestionable, as the writing of this review evidences, but whether it is the most valuable kind of book for class use is a further question. To my mind, it is too meager for historical purposes and too complete for systematic use. Courses in the history of ethics are usually advanced courses in which the students need the complete works of the men studied rather than samples, however good. On the other hand, introductory courses in systematic ethics have no need for the confusing variety given in this survey of the entire history of ethics. If any historical material be given them, it should be in the form of larger portions of the few fundamental types of ethical theory, say Mill, Spencer, Kant, Plato, Aristotle. Any further reference to history distracts from the real subject-matter of the study. The source book method has the defect of our recent free elective systems, too much of everything and not enough of anything. The studying of forty-five authors is not educative. That such a book is interesting and useful for supplementary reference is doubtless true, but that it can form the basis for study seems more than doubtful in spite of its unusual excellence of execution.

NORMAN WILDE.

Habit-Formation and the Science of Teaching. STUART H. ROWE. New York: Longmans, Green and Co. 1909. Pp. xvii + 308.

The author thinks that most educational psychologists make the intricacies of educational processes glaringly apparent, but the applications remote or trivial. He accordingly wishes to simplify the psychology of habit and to point out definitely the applications to genuine school-life problems. He indeed seeks chiefly to organize the usage of good teachers. As yet, according to the author, no school habit of discipline or drill has been investigated scientifically from the standpoint of its formation. This book hence has the distinction of being the first to develop a methodology of habit as a different task altogether from the traditional methodology of imparting ideas. As there is in no field of educational effort a scientifically established method for securing the habits sought, even though one may have defined with psychological insight those desired, one must throughout show the relation of habit to education, and must render also practical assistance to those whose business it is to inculcate or teach habits as well as or even more than to impart ideas.

With this in mind the general plan is to elaborate the modes of selecting, making, and breaking habits, the vital phases of their formation or obliteration as the case may be, and their relation to permanent incentives, to subject-matter and to discipline.

Effective organization of experience is the function of the teacher. Naturally the automatic ways of organizing experience depend upon one's native equipment of a wide or narrow range of instinctive organizing impulses, as well as upon those modified or combined or selected ways acquired through more or less chance equipment. Teaching should change such conditions by intelligently guiding the processes of acquiring each specific habit with a definite aim. Concrete situations must be under control if we would effectively inculcate habits. Automatic learning should also help purposive, if genuine habits are naturally developed rather than grafted on artificially to the child's life. Having always first analyzed the habit elements in a given subject-matter, the automatisms required should be systematically worked for. The distinction should also be kept clearly in mind that idea-learning *per se* and habit-gaining are accomplished by distinctly different methods, multiplicity of association being the basis for the one and invariability in repetition the basis for the other. Practically courses of study should be so planned that ideas as ideas, idea-habits as thought dispositions, and pure automatisms may be distinguished and pointedly aimed for in the operations instituted. Often indeed complicated habit-getting implies the automatic acquisition of the ideal part of the situation, and should be more stressed than it has been, for this reason also, in educational theory. Derivatives, as habits are, from instincts or former habits, the author enumerates twenty-five instincts upon which these habits should be formed by the teacher, and suggests an elaborate (and somewhat over-schematized) classification of feelings which must furnish the initiative or incentive for inaugurating the habit-forming activity.

The next division of the book represents an attempt to emphasize the kind of practise and of repetition most effective in habit-getting, and also in habit-breaking, the removal of certain habits being one of the most important functions of the teacher. Next habits are shown to be in a unique way disciplinary in function and to demand protracted treatment or direction, no recitation period being sufficient to implant securely the reaction desired.

The book as a whole lends itself to favorable and to adverse criticism, and both features invite comment. Adversely, the treatment is administered in such broken doses, the pages are so chopped up into the regulation-length paragraphs with black-line headings, some padded, coated, spun out, sectioned, or outlined into itemized briefs that one, reading the book at a sitting for some newly stated educational doctrine, has continually and persistently to fight off the deadening effect of these approved (?) text-book methods of exposition. With this, or perhaps because of this method, idea-getting seems to have been presented as an unwarrantably isolated process, barren and mystical. The author apparently assumes that the bare and barren idea-impartation is a sacred part of school ideals and destined to go on forever, and that his own ideal of habit-acquisition unrelated, indeed opposed, to the former process, will nicely supplement it; and further, that upon these two procedures we may scientifically rest our methodology. This is surely not a criticism of the heart of Herbartian intellectualistic pedagogics. Furthermore, the formal steps of habit-making, just as the five (or more or less) formal steps of the neo-Herbartians for their intellectualizing operations would merely supplement these with other no less formal steps.

Again, the author's suggestion that we divide the course of study into habit-forming and idea-information subjects would defeat other ideals now about to become influential in teaching. Still again, even with this contribution to the methodology of habit, we have no experimental data graphically given which would make concrete and irrefutable the school's possible success, *e. g.*, in cases of habit-breaking. Habit situations are themselves so complex, that extended studies of habits vital or destructive to educational development, which may serve as models and references, are still needed. Otherwise the exhortation to follow certain rules and maxims can not be obeyed intelligently and systematically.

On the other hand, in commendation of the book, we may certainly say that it will fortunately stimulate all readers to a more definite reexamination of the course of study. It creates the wholesome demand that we for our own method at least be psychologically discriminating in the examination of the educational possibilities of the subject-matter in hand. It will also tend to offset the now undue emphasis put upon the bizarre occurrences of the recitation period, and will emphasize forcibly the essential carrying power of the habit elements in education, particularly as they call for protracted, unswerving, and delicately skillful direction. The treatise helps us to conceive teaching as an art based upon reliable first principles. There are further about the book a tone of genuineness

and an apparent sense of sympathy and of familiarity with the actual school situations and their limitations, not always in evidence in such psychological studies. In short, the author has broadened and considerably enriched the educational connotation of habit, and has incontestably helped to make concrete some hitherto very vague and entirely inarticulate functions of teaching. He has furthermore opened up a suggestive and unworked experimental field which should be inviting to many investigators who wish to make contributions where they will be effective practically. The book stands as another useful and needed topic reference work for those who have before given less effectively than desired their courses in the psychology of the typical educative processes.

The bibliography at the end is comprehensive and adds to the usefulness of the book.

CHAS. HUGHES JOHNSTON.

UNIVERSITY OF MICHIGAN.

JOURNALS AND NEW BOOKS

THE AMERICAN JOURNAL OF PSYCHOLOGY. Vol. XXI, No. 1. January, 1910. *Intelligence and Imitation in Birds; A Criterion of Imitation* (pp. 1-71): JAMES P. PORTER. — An additional series of experiments on the intelligence of the English sparrow and cowbird, including experiments with the junco, white-throated sparrow, field sparrow, bluebirds, white-crowned sparrows, tree, fox and song sparrows, blue jays, orioles, and crows. Many of the birds showed signs of imitation. The best fighters seemed to learn a given task earliest. The writer makes the suggestion that intelligent imitation is in a new class and should be kept apart from words which seem to imply reasoning on the part of the animal mind. *The Oedipus-Complex as an Explanation of Hamlet's Mystery: A Study in Motive* (pp. 72-113): ERNEST JONES. — A psycho-analytic study of Hamlet. The repugnance of his task causing a peculiar mental state, at the same time he being unconscious of this repugnance. His actions are classified as *specific aboulia* and attempts to blind himself with self-deception. Certain psycho-neurotic symptoms are discussed and applied to Hamlet. *Spontaneous Constructions and Primitive Activities of Children, Analogous to Those of Primitive Man* (pp. 114-150): R. A. ACHER. — A questionnaire study. A collection of data on children's activities and attitude toward blocks, sand, earth, stones, snow, strings, bodily shape, clothing and striking, showing that a child may not have the activities of primitive man yet he desires and needs them. Bibliography. *The Measurement of Attention by Professor Wirth's Methods* (pp. 151-156): R. L. GEISSLER. — A reply to Professor Wirth's criticism of the interpretation of the author previously made of his methods in measuring attention. Maintains that Wirth has failed to solve his problem. His values invalidated by complicating factors. Impossible for him to overcome certain difficulties because of his experimental

method. *Minor Studies from the Psychological Laboratory of Vassar College. The Sources of the Affective Reaction to Fallacies* (pp. 157-161): ANNA H. TAYLOR and M. F. WASHBURN. - An introspective report of about one hundred women students of the impression produced upon them by a set of logical fallacies. *Some Tests by the Association Method of Mental Diagnoses* (pp. 162-167): HAZEL M. LEACH and M. F. WASHBURN. - A word referring to an object not seen gives a long reaction. *Psychological Literature. Reviews:* Sigmund Freud, Brillé's translation, *Selected Papers on Hysteria and Other Psychoneuroses*. Paul Sollier, *Le Doute*. Otto Lipman and William Stern, *Zeitschrift für angewante Psychologie und psychologische Sammelnsforschung*. Ernesto Lugaro, translation, *Modern Problems in Psychiatry*. Alfred Binet, *L'Année Psychologique*. W. W. Wundt, *Alte und neue Gehirn-Probleme*. N. Vaschide, *Essai sur la Psychologie de la Main*. Anne Manning Robbins, *Both Sides of the Veil*. William James, *A Pluralistic Universe*. William James, *The Meaning of Truth*. Hugo Münsterberg, *Psychology and the Teacher*. W. v. Bechterew, *Die Funktionen der Nerven-centra*. Georges Remacle, *La Philosophie de S. S. Laurie*. Otto Lipmann, *Grundriss der Psychologie für Juristen*. Kate Gordon, *Esthetics*. C. E. Seashore, *Elementary Experiments in Psychology*. D. P. Rhodes, *The Philosophy of Change*. Eleanor A. Gamble, *A Study in Memorizing*. Dr. Pierre Kahn, *La Cyclothymie*. Dr. Busse, *Die Weltanschauung der grossen Philosophen der Neuzeit*. William A. White, *Outline of Psychiatry*. Henry Rutgers Marshall, *Consciousness*. George Betts, *The Distribution and Functions of Mental Imagery*. M. E. Haggerty, *Imitation in Monkeys*. Adam Leroy Jones, *Logic*. Th. Ribot, *Problemes de Psychologie affective*: FRANCIS JONES. E. A. Kirkpatrick, *Genetic Psychology*: OTTO PERLER. S. Alrutz, *Die Kitzel- und Juckempfindungen*: P. E. WINTER. G. L. Walton, *Those Nerves*. *Index*.

Ach, Narziss. Ueber den Willensakt und das Temperament. Eine experimentelle Untersuchung. Leipzig: Quelle und Meyer. 1910. Pp. 324.

Bode, Boyd Henry. An Outline of Logic. New York: Henry Holt & Co. 1910. Pp. 324.

Clements, Joseph. The Metaphysics of the Nature and the Conception of the Soul, its Habitat. Boston: The Roxburgh Publishing Co. Pp. 112.

De Cyon, Elie. Dieu et Science, Essais de Psychologie des Sciences. Paris: Félix Alcan. 1910. Pp. xvi + 444.

D'Undine, Jean. L'art et le geste. Paris: Félix Alcan. 1910. Pp. xv + 284.

Hibben, John Grier. The Philosophy of Enlightenment. New York: Charles Scribner's Sons. 1910. Pp. xii + 311.

Hicks, R. D. Stoic and Epicurean. New York: Charles Scribner's Sons. 1910. xix + 412.

Naville, Ernest. Les Systèmes de philosophie ou les philosophies affirmatives. Paris: Félix Alcan. 1909. Pp. 400.

- Novocow, J. *La Critique du Darwinisme Social*. Paris: Félix Alcan. 1910. Pp. 407.
- Piat, Clodius. *La Morale du Bonheur*. Paris: Félix Alcan. 1910. Pp. vii + 263.
- Sollier, Paul. *Le Doute*. Paris: Félix Alcan. 1910. Pp. viii + 407.
- Schinz, Albert. *Anti-Pragmatism*. Boston: Small, Maynard, & Co. Pp. xx + 279.
- Shargha, Ikbal Kishen. *Examination of Professor William James' Psychology*. Allahabad: Ram Narain Lal. 1909. Pp. 118.
- Von Aster, E. *Immanuel Kant*. Leipzig: Quelle und Meyer. 1909. Pp. 136.
- Volkman, Paul. *Erkenntnistheoretische Grundzüge der Naturwissenschaften, und ihre Beziehungen zum Giestesleben der Gegenwart*. Leipzig: B. G. Teubner. 1910. Pp. xxiii + 454.
- Windelband, Wilhelm. *Lehrbuch der Geschichte der Philosophie, fünfte durchgesehene Auflage*. Tübingen: J. C. B. Mohr. 1910. Pp. viii + 589.

NOTES AND NEWS

“Ein philosophischer Begriff gebratner Gans entspricht:
Dass sie von selber Aepfel fräss', gesehen hab' ich's nicht;
Doch jeder freut des Inhalts sich, wenn man sie bringt zum Schmauss:
Das, was man hat hineingetan, nimmt wieder man heraus.”—*Fechner*.
Quoted in *Indogermanische Forschungen*. XXV., p. 392.

At the meeting of the Aristotelian Society on February 7, Mr. A. D. Lindsay read a paper on “Kant's Account of Causation.” The abstract is from the *Athenæum* for February 26.

“Any discussion of the meaning and value of Kant's account of causation in ‘The Critique of Pure Reason’ is profitably preceded by examining first what Kant himself thought that he had proved. This can be discovered in two important passages in ‘The Critique of Judgment’ and in Kant's discussion of the third antinomy of pure reason. The first passages show that Kant distinguished clearly between the *a priority* of the general law of causation and the empirical character of particular laws; the second, that the distinction of phenomena and things-in-themselves implies mainly a necessary reference of the understanding to perception. Applying these two principles to Kant's account of causation, we find that Kant, beginning with the distinction between succession in apprehension and apprehension of succession, shows that the fact of objective change involves that change is determined by the character of what precedes it. Thus we have a general rule that like causes produce like effects, which applies to all that we perceive in so far as like elements can be discriminated in it. Further, this principle does not explain change, but takes for granted perceived continuous change. Any theory of causation which

implies that this reference to perception could be transcended is found to be contradictory, but that reference involves that causation is correlate to spontaneity. The application of the principle demands that the elements of experience are partly isolable and disparate, partly homogeneous and continuous; but as this is implied in any perception of change, the principle of causation is valid for all experience, without thereby enabling us to anticipate any empirical causal laws, and without being incompatible with spontaneity."

ARTHUR LIONEL SMITH, M.A., Fellow and Tutor of Balliol College, has begun at Columbia University a series of twelve lecture conferences for students of law and political science on English political writers of the seventeenth and eighteenth centuries and the development of "English Political Theory from Hobbes to Burke." The titles of the lectures are as follows: Hobbes and the Sovereignty, Hobbes and Church and State, Milton and the Religious Ideal, Harrington and the Division of the Powers, Filmer and Divine Right and Passive Obedience, Sidney and the Social Contract and Natural Rights, Locke and Individualism and the Right of Revolution, Bolingbroke and the Use of History in Politics, Defoe and Party Government—Hume and the Science of Politics, Hamilton on Federalism and on Democracy, Burke and the Body Politic.

PROFESSOR JAMES HAYDEN TUFTS, of the University of Chicago, began on March 9 a series of ten lectures at Johns Hopkins University on "Modern Problems of Metaphysics and the Theory of Knowledge." The titles of the lectures are as follows: The Persistent Task of Philosophy and the Present Situation, The Fundamental Ways of Viewing the World and Life, The Meaning of Truth, The Dualism of Fact and Idea, The Problem of Transcendence, Knowledge and Reality, Consciousness and the Self, The Relation of Consciousness to Reality, The Eternal and the Changing, Religious Illustrations of the Dualism of Fact.

VOLUME VI., of the Cambridge Modern History, which deals with the eighteenth century, contains an admirable account of Hobbes and the "English Political Philosophy in the Seventeenth and Eighteenth Centuries," by Mr. A. L. Smith.

DR. HUGO MÜNSTERBERG, professor of psychology at Harvard University, has been appointed exchange professor to lecture at Berlin in 1910-11.

THE JOURNAL OF PHILOSOPHY

PSYCHOLOGY AND SCIENTIFIC METHODS

VALID KNOWLEDGE AND THE "SUBJECTIVITY OF EXPERIENCE"

EXPERIENCE" seems to be in a perilous condition at present, philosophically speaking. When it is an affair of opposing apriorism or that phase of idealism which subsists by setting up "pure thought" and endowing it with various synthetic functions, many, if not most, contemporary writers profess an ardent attachment to experience. When the problem of the relation of knowledge and things is uppermost, many of the same writers express the most profound distrust of experience. When the logical origin of knowledge is under discussion, experience is a term broad enough to cover whatever is perceived and is inferred from the perceived, as well as all kinds of doing and suffering which affect what we know and yet are not themselves "known," *i. e.*, are not explicit objects of awareness. When epistemology comes to the front, experience dwindles down to the narrowest sensible content of presentation. That the idealist should accept the latter or Humian notion of experience is natural—he needs it in his business. But, somewhat surprisingly, most realists carry the same brand of experience in stock. The motive is not so clear as in the case of the idealist, but one surmises that the reason is the same as that of the objective idealist, only the other way around.

The objective idealist points to the contrast of the limitations of experience and the *ideal* of knowledge implied in limited experience as proof of the necessity of absorption of our knowing in a complete consciousness. The realist points to the contrast between our meager flickering awareness of objects and the extensive and enduring world of *actually* known objects as proof of the independence of the object of knowledge from momentary awareness—with which he, a good intellectualist, has, like the idealist, identified experience. And since the *ideal* of knowledge and the world of *actual* knowledge are quite different and yet are correlated, idealist

and realist, by standing upon the ground of the limited and subjective character of experience, keep each other going.

This last paragraph is, however, a diversion from the point of my paper which is to raise a doubt as to whether experience can have the relation it is conceded to have to the *production* of valid knowledge and yet be simply "subjective" in character. This doubt is here raised for the especial benefit of the realist. Experience can not, we are told, be an ultimate criterion, method or "universe of discourse"¹ in philosophy, without leading to a thoroughly subjectivistic philosophy—because experience is subjective. So be it. Then upon what grounds does realism itself rest? Is it a purely dialectical doctrine, one achieved through the elaboration—I will not say manipulation—of the *concept* of knowledge and allied concepts? Or, since presumably it is not a supernatural revelation, is it a "necessary truth," or an *a priori* intuition? Or does it rest upon empirical grounds and hope for empirical verification? And if so, what is its relation as a valid theory of knowledge to the experiences upon which it rests and to which it looks for confirmation?

Since the realist will not claim that his knowledge of the relation of knowledge to its object exhausts the genus "valid knowledge," the question may profitably be generalized: What is the relation of any case of valid knowledge *qua* valid, to experience? In considering this question, the reader may define "valid knowledge" in general in any way he pleases, for my question is not about the relation of the concept of valid knowledge to the concept of experience: the realist has already told us that there is no relation save that of indifference. My question is not as to implication or connotation, but is denotative in reference. What relation is there between what exists as a valid knowledge and what exists as empirical events? Even if it be admitted that the connotation of the term "valid knowledge" is "object known *as if* there were no knowing experience, no antecedents and (above all) no consequences in experience"; there still remains the question denotatively or existentially all-important: What is the evidence that any given case is an object so known?

The peculiarity to which I invite the realist's attention is that the method of guaranteeing a given object to be present as if there were no experience is itself a method of experience—a peculiar fact in any case, but excessively peculiar when the experience taken to warrant the belief that experience is ceasing from pernicious activity is defined in advance as subjective. To be a realist and to be immune from error in particular cases of knowing are not synonyms—which

¹ This excellent way of characterizing experience is Bush's; see this JOURNAL, Vol. VI., p. 175. *The Existential Universe of Discourse*.

is to say that to know what valid knowledge is is not necessarily to know what *a* valid knowledge is. Moreover, something is necessary to determine a case of valid knowledge besides the bare presence of the valid object. If this something else be not conditions and consequences in experience, what is it? Since, as the realist tells us, the object of knowledge is there anyway, what determines its presence as an object of valid knowledge must be something besides itself, or its fellow, or any collocation of its fellows, they being all in the same predicament as itself. And, alack and alas, that this something else required to secure and to guarantee the presence of an object as a valid object should be experience—which is subjective. If experience could be used only to account for error, what a convenience! That, being subjective, it has nothing to do with the valid object and yet is necessary to warrant it *as* valid, what an inconvenience!

For note what is required of this same subjective experience. It must catapult upon the scene an object, while (by a sort of rebound) it modestly withdraws far behind the scene. But this is not enough: The fact that invalid objects are accepted as valid proves that “experience” is frequently most perniciously active when it seems to have withdrawn its influence. Hence, in cases of genuinely scientific knowing, experience must affix to the object some *special* sign witnessing that this object is free from its own influence. This performance, on the assumption that experience is subjective, is as if suspected beef-packers substituted for the government inspection label a certificate that the meat was sound because they had done nothing to it—except produce it. But this is not all. Only certain modes of experience are efficacious in hitting upon the valid object; and the possibility of science, that is, directed search for (instead of their accidental finding) valid objects, depends upon ability to discover and confirm those modes of experience that are benign. Is it not extraordinary that experience—if it be inherently subjective—should possess this Manichæan cleavage within itself?

The fact that scientific method consists of preference for certain selected modes of experience as the likeliest way to secure valid objects is worthy of special attention. During the seventeenth century, the problem of the attainment of valid knowledge-objects became acute. Intellectualistic philosophers, rationalists and sensationalists alike, set to work to find some mark inhering in the valid object which should guarantee its validity. Some sought it in the sublimity or the clearness, or the universality of the content; others sought it in the object’s simplicity, or brute irreducibility, or sensuousness. Experimental scientists said, in effect, that there was no trait or quality of the knowledge-object *per se* which marked its genuineness; that the status of genuineness is determined by the

way inquiry is conducted and by the way the thing looked upon as valid behaves in the carrying forward of inquiry. This doctrine, uniformly accepted, so far as I know, in the natural (if not the mathematical) sciences was summed up in the doctrine that knowledge depends upon experience and valid knowledge upon certain types of experience. Now if to *be* a valid knowledge means (1) to be got at through conditions and acts of doubt, suspense, observation, suggestion, experimental manipulation, hypothesis-formation and elaboration, application of mathematical calculations, and (2) to be capable of fruitful use in suggesting and regulating further inquiries, then surely it is a moderate statement to say that *some* experiences bear such an intimate relation to valid knowledge-objects that it taxes credulity to regard experience as inherently subjective.

The realist may reply that it is not denied that empirical conditions (or even consequences) are necessary to the appearance and recognition of the valid object. What we object to, he will say, is the implication that the conditions of the discovery of a valid object are conditions of its validity; we object to confusing conditions of genesis with conditions of validity. The reply is familiar, but not relevant. The realist's attention is invited to the highly intimate and pervasive connections that exist between empirical conditions of genesis and consequence and the valid status of an object; he is urged to tell what he means, in the light of this intimate connection, by calling the conditions of genesis and bearing "subjective," and how it is that the "subjective" can be responsible not only for generating the manifestation of the valid object, but also for stamping it as valid. The continuity of "experience" and of "validity" is at once so unbroken and so important as to render incredible the notion that genesis and consequence are in one realm—the subjective—and validity in another, the objective. In view of the facts of scientific procedure, it hardly seems excessive to say that, in one regard, validity of status is a kind of experience. If it can be made out that experience is subjective, we should not think we had achieved anything with a distinction of genesis and validity; we should say that because the generator is only subjective we can only laugh at the naïve audacity of its claim to generate a valid object. To dispose of the difficulty by drawing a hard and fast line between genesis and validity—or between psychological and logical—is to suppose that giving names to the terms of a problem solves the problem of which they are the named terms.

Scientific method carries us a step further as to this point also. In all the natural sciences, it has been found that the best way of defining the nature of an object is by following its career, its becoming and its behavior. Strange indeed would be the logical situa-

tion if in all specific cases of scientific conception we employed terms of generation and efficiency in order to secure valuable conceptions, but when we came to the conception of knowing itself found a unique exception—a complete irrelevance of genesis and content.

The realist professes to offer a valid conception of the nature of valid knowledge. He either arrives at this conception by a dialectic procedure or he follows the same methods that investigators employ in other fields. If the latter, the definition of valid knowledge as “knowledge as if experience were not there” is itself established by certain experiences. Is he not then a little ungrateful in his treatment of experience? Ungrateful or not, must he not admit that his process is either dialectical, or analogous to the procedure of scientific inquiries? If the latter, how can he frame his conception of valid knowledge save by generalization of denotative or existential cases of valid knowledge? If to be *a* valid knowledge means to stand in a particular empirical context, can valid knowledge be conceived except as an indicated type of empirical position and function?

To be more specific: Does a definition of valid knowledge have any *meaning*—to say nothing of validity—save as based upon the specific detectable traits of those instances of knowledge enterprises *that have turned out valid in contrast with those which have turned out invalid*? Does an epistemological definition of valid knowledge, in distinction from a logical definition, have *any* meaning at all? In short, is the realist a realist or is he merely an anti-idealist?

Without prejudice to the question of realism *vs.* idealism, another question is of much more import for the future of philosophy: Is the theory of knowledge to be epistemological or logical? Is it to be concerned with the nature of knowledge and of truth in general, that is, with conceptions which are totally irrelevant to the methods and tests by which particular knowledges are effected and particular truths tested? Or is the theory of knowledge to be a generalized statement of particular instances of knowing, and the theory of truth a generalized statement of particular instances of “trues”?

Because the empiricist believes *this* question is immeasurably more pregnant than the issue (*within* a pretended theory of knowledge in general) of idealism *versus* realism, he catches it from both sides. On account of the same belief, he takes his drubbings with equanimity, for he is convinced that the presuppositions which create the problem of knowledge in general are mere historic survivals, and that the future is with the question of the differences

between a good knowledge and a bad knowledge, not with the problem of knowledge *ueberhaupt*.

JOHN DEWEY.

COLUMBIA UNIVERSITY.

WHAT SOCIAL OBJECTS MUST PSYCHOLOGY PRESUPPOSE?¹

THERE is a persistent tendency among present-day psychologists to use consciousness as the older rationalistic psychology used the soul. It is spoken of as something that appears at a certain point, it is a something into which the object of knowledge in some sense enters from without. It is conceived to have certain functions—in the place of faculties. It is as completely separated from the physical body by the doctrine of parallelism as the metaphysical body was separated from the metaphysical soul by their opposite qualities.

Functional psychology has set itself the program of assimilating the purposive character of conscious processes—or of consciousness as it is termed—to the evolutionary conception of adaptation, but instead of making consciousness in human individuals a particular expression of a great process, as is demanded of a philosophy of nature, it comes in generally as a new and peculiar factor which even demands a new formula of evolution for its explanation; it involves a new evolution superinduced upon the old.

In spite of much philosophizing, consciousness is identified in current psychological practise with the field which is open to introspection, and the object of knowledge is placed within this field, and related to the physical world—spoken of as an external field of reality—by a parallelistic series. This psychological practise tends to accept the conceptual objects of science, the atoms, molecules, ether vortex rings, ions, and electrons, as the substantial realities of the physical world, and, by implication at least, to relegate the sensuous content of objects of direct physical experience to this separate field of consciousness. The old-fashioned idealist has then only to point out the thought structure of these hypothetical objects of science to sweep triumphantly, with one stroke of his wand, the whole world of nature within this limited field of the consciousness open to introspection. Whereupon the solipsistic spook arises again to reduce one's world to a nutshell.

The way out of these crude psychological conceptions, in my mind, lies in the recognition that psychical consciousness is a particular phase in development of reality, not an islanded phase of

¹ Given at the meeting of the Psychological Association in Boston, December 31, 1909.

reality connected with the rest of it by a one to one relationship of parallel series. This point of view I have elsewhere developed somewhat obscurely and ineffectually, I am afraid.²

What I wish to call to your attention in the few moments at my disposal, is another phase of this situation which is itself psychological in its character;³ the presupposition of selves as already in existence before the peculiar phase of consciousness can arise, which psychology studies.

Most of us admit the reality of the objects of direct physical experience until we are too deeply entangled in our psychological analyses of cognition. Unless we subject ourselves to the third degree of criticism, the parallelism of which we speak lies between the processes of brain tissues which can be seen and smelt and handled and the states of consciousness which are conditioned by them. While this admission guarantees the physical bodies of our fellows as equally real, the self is relegated to the restricted field of introspected consciousness and enjoys not the reality of a so-called external object, but only that of a combination of states of consciousness. Into the existence of those states of consciousness in another, we are solemnly told we can only inferentially enter by a process of analogy from the relations of our own introspected states and the movements of our bodies to the movements of other bodies and the hypothetical conscious states that should accompany them. If we approach the self from within, our analysis recognizes, to be sure, its close relationship to, if not its identity with, the organization of consciousness, especially as seen in conation, in apperception, in voluntary attention, in conduct, but what can be isolated as self-consciousness as such reduces to a peculiar feeling of intimacy in certain conscious states, and the self gathers, for some unexplained reason, about a core of certain vague and seemingly unimportant organic sensations—a feeling of contraction in the brow, or in the throat, or goes out to the muscular innervations all over the body which are not involved directly in what we are doing or perceiving. And yet when we proceed introspectively the whole field of consciousness is ascribed to this self, for it is only in so far as we are self-conscious that we can introspect at all.

But what I wish to emphasize is that the other selves disappear as given realities even when we are willing to admit the real objects of physical experience. The self arises within the introspected field. It has no existence outside that introspected field, and other selves

² "The Definition of the Psychological," University of Chicago Decennial Volumes.

³ I have discussed the implications of this position from a somewhat different point of view in the *Psychological Bulletin*, Vol. VI., No. 12, December 15, 1909.

are only projects and ejects of that field. Each self is an island, and each self is sure only of its own island, for who knows what mirages may arise above this analogical sea.

It is fair to assume that if we had exact social sciences which could define persons precisely and determine the laws of social change with mathematical exactness, we should accept selves, as there, in the same sense in which we accept physical objects. They would be guaranteed by their sciences. For in the practise of thought, we are as convinced as the Greeks that exact knowledge assures the existence of the object of knowledge.

It is evident that the assumption of the self as given by social science in advance of introspection would materially and fundamentally affect our psychological practise. Consciousness as present in selves would be given as there, outside the field of introspection. Psychological science would have to presuppose selves as the precondition of consciousness in individuals just as it presupposes nervous systems and vascular changes. In actual psychological analysis we should condition the existence and process of states and streams of consciousness upon the normal presence and functioning of these selves, as we condition the appearance and functioning of consciousness upon the normal structure and operation of the physical mechanism, that our psychology presupposes.

In a manner we do this in treatises on mob-psychology, in such a treatise on social psychology as that of Cooley's "Human Nature and the Social Order." McDougall's "Social Psychology" prepares the way for it in carrying back the processes of consciousness to social impulses and instincts—to those terms in which, somewhat vaguely, selves are stated in an evolutionary theory of society.

The economic man of the dismal science was an attempt to state the self in terms of an objective and exact social science. But fortunately the economic man has proved spurious. He does not exist. The economic man is as little guaranteed by the orthodox political economy, as *realia* were by the metaphysics of scholasticism.

Social science in anthropology, in sociology pure and impure, dynamic and static, has not as yet found its scientific method. It is not able to satisfactorily define its objects, nor to formulate their laws of change and development. Until the social sciences are able to state the social individual in terms of social processes, as the physical sciences define their objects in terms of physical change, they will not have risen to the point at which they can force their object upon an introspective psychology. We can to-day foresee the possibility of this. Eugenics, education, even political and economic sciences, pass beyond the phase of description and look toward the formation of the social object. We recognize that we control the

conditions which determine the individual. His errors and shortcomings can be conceivably corrected. His misery may be eliminated. His mental and moral defects corrected. His heredity, social and physical, may be perfected. His very moral self-consciousness through normal and healthful social conduct, through adequate consciousness of his relations to others, may be constituted and established. But without awaiting the development of the social sciences it is possible to indicate in the nature of the consciousness which psychology itself analyzes, the presupposition of social objects, whose objective reality is a condition of the consciousness of self.

The contribution that I wish to suggest toward the recognition of the given character of other selves is from psychology itself, and arises out of the psychological theory of the origin of language and its relation to meaning.

This theory, as you know, has been considerably advanced by Wundt's formulation of the relation of language to gesture. From this point of view language in its earliest form comes under that group of movements which, since Darwin, have been called expressions of the emotions. They fall into classes which have been regarded as without essential connection. Either they are elements—mainly preparatory—beginnings of acts—social acts, *i. e.*, actions and reactions which arise under the stimulation of other individuals, such as clenching the fists, grinding the teeth, assuming an attitude of defense—or else they are regarded as outflows of nervous energy which sluice off the nervous excitement or reinforce and prepare indirectly for action. Such gestures, if we may use the term in this generalized sense, act as stimuli to other forms which are already under social stimulation.

The phase of the subject which has not been sufficiently emphasized is the value which these truncated acts, these beginnings of inhibited movements, these gestures, have as appropriate stimulations for the conduct of other individuals. Inevitably, forms that act and react to and upon each other come to prepare for each other's reaction by the early movements in the act. The preliminaries of a dog or cock fight amply illustrate the sensitiveness of such individuals to the earliest perceptible indications of coming acts. To a large degree forms, which live in groups or in the relation of the animals of prey and those they prey upon, act upon these first signs of oncoming acts. All gestures, to whatever class they belong, whether they are the beginnings of the outgoing act itself or are only indications of the attitude and nervous tension which these acts involve, have this value of stimulating forms, socially organized, to reactions appropriate to the attack, or flight, or wooing, or suckling, of another form. Illustrations are to be found in hu-

man conduct, in such situations as fencing, where one combatant without reflection makes his parry from the direction of the eye and the infinitesimal change of attitude which are the prelude to the thrust.

Gestures then are already significant in the sense that they are stimuli to performed reactions, before they come to have significance of conscious meaning. Allow me to emphasize further the value of attitudes and the indications of organized preparation for conduct, especially in the change of the muscles of the countenance, the altered breathing, the quivering of tense muscles, the evidence of circulatory changes, in such minutely adapted social groups, because among these socially significant innervations will be found all these queer organic sensations about which the consciousness of the self is supposed to gather as a core.

Human conduct is distinguished primarily from animal conduct by that increase in inhibition which is an essential phase of voluntary attention, and increased inhibition means an increase in gesture in the signs of activities which are not carried out; in the assumptions of attitudes whose values in conduct fail to get complete expression. If we recognize language as a differentiation of gesture, the conduct of no other form can compare with that of man in the abundance of gesture.

The fundamental importance of gesture lies in the development of the consciousness of meaning—in reflective consciousness. As long as one individual responds simply to the gesture of another by the appropriate response, there is no necessary consciousness of meaning. The situation is still on a level of that of two growling dogs walking around each other, with tense limbs, bristly hair, and uncovered teeth. It is not until an image arises of the response, which the gesture of one form will bring out in another, that a consciousness of meaning can attach to his own gesture. The meaning can appear only in imaging the consequence of the gesture. To cry out in fear is an immediate instinctive act, but to scream with an image of another individual turning an attentive ear, taking on a sympathetic expression and an attitude of coming to help, is at least a favorable condition for the development of a consciousness of meaning.

Of course the mere influence of the image, stimulating to reaction, has no more meaning value than the effect of an external stimulus, but in this converse of gestures there is also a consciousness of attitude, of readiness to act in the manner which the gesture implies. In the instance given the cry is part of the attitude of flight. The cry calls out the image of a friendly individual. This image is not merely a stimulus to run toward the friend, but is merged in the consciousness of inhibited flight. If meaning is consciousness of

attitude, as Dewey, Royce, and Angell among others maintain, then consciousness of meaning arose only when some gesture that was part of an inhibited act itself called up the image of the gesture of another individual. Then the image of the gesture means the inhibited act to which the first gesture belonged. In a word, the response to the cry has the meaning of inhibited flight.

One's own gestures could not take on meaning directly. The gestures aroused by them in others would be that upon which attention is centered. And these gestures become identified with the content of one's own emotion and attitude. It is only through the response that consciousness of meaning appears, a response which involves the consciousness of another self as the presupposition of the meaning in one's own attitude. Other selves in a social environment logically antedate the consciousness of self which introspection analyzes. They must be admitted as there, as given, in the same sense in which psychology accepts the given reality of physical organisms as a condition of individual consciousness.

The importance for psychology of this recognition of others, if thus bound up with the psychology of meaning, may need another word of emphasis. Consciousness could no longer be regarded as an island to be studied through parallel relations with neuroses. It would be approached as experience which is socially as well as physically determined. Introspective self-consciousness would be recognized as a subjective phase, and this subjective phase could no longer be regarded as the source out of which the experience arose. Objective consciousness of selves must precede subjective consciousness, and must continually condition it, if consciousness of meaning itself presupposes the selves as there. Subjective self-consciousness must appear *within* experience, must have a function in the development of that experience, and must be studied from the point of view of that function, not as that in which self-consciousness arises and by which through analogical bridges and self-projections we slowly construct a hypothetically objective social world in which to live. Furthermore, meaning in the light of this recognition has its reference not to agglomerations of states of subjective consciousness, but to objects in a socially conditioned experience. When in the process revealed by introspection we reach the concept of self, we have attained an attitude which we assume not toward our inner feelings, but toward other individuals whose reality was implied even in the inhibitions and reorganizations which characterize this inner consciousness.

If we may assume, then, that meaning is consciousness of attitude, I would challenge any one to show an adequate motive for directing attention toward one's attitudes, in a consciousness of things that

were merely physical; neither control over sense-perception nor over response would be directly forwarded by attention directed toward a consciousness of readiness to act in a given situation. It is only in the social situation of converse that these gestures, and the attitudes they express could become the object of attention and interest. Whatever our theory may be as to the history of things, social consciousness must antedate physical consciousness. A more correct statement would be that experience in its original form became reflective in the recognition of selves, and only gradually was there differentiated a reflective experience of things which were purely physical.

GEORGE H. MEAD.

UNIVERSITY OF CHICAGO.

ATTENTION AS SENSORY CLEARNESS

I HAVE elsewhere maintained that the analytical study of attention must center about the sensory attribute of clearness or vividness. This doctrine has, no doubt, to run the gauntlet of many critical objections, and to submit to many and varied experimental tests; it is sharply at variance with the current trend of attentional theory. Professor Woodworth, for instance, has recently written that "attention offers no genuine problem to the descriptive psychologist; the questions which it raises are of a dynamic or of a physiological nature."¹ He affirms also that the "attempt to describe the consciousness of a moment as made up of the clear and the unclear leads to a curious paradox."

I shall try, in the present note, to clear up this paradox; I think it can be shown that paradox arises only if the descriptive point of view is forsaken for the dynamic, and that it is therefore of Mr. Woodworth's own invention, and not intrinsic to my account of attention. Parenthetically, I would remark that it is not correct, from my standpoint, to describe any attentive consciousness as made up of the clear and the unclear, unless these terms are understood in a purely relative sense. I regard the attribute of clearness as an intensive attribute, so that the focal processes in attention are simply the more clear, and the marginal processes the less clear; but every sensation has some degree of clearness, just as every sensation has some degree of intensity.²

Mr. Woodworth's paradox, now, is expressed in the following

¹ This JOURNAL, Vol. VI., p. 694.

² See my "Feeling and Attention," 1908, 10 f., 26, 183 f., etc.; "Text-book of Psychology," I., 1909, pp. 53 f., 278 f. For simplicity's sake I speak here only of sensation; clearness attaches also to the image ("Text-book," p. 198) and to complex sensory and imaginal processes.

sentence: "To reach a distinction between the clear and the unclear, each of them must receive some measure of attention; but the unclear is just that which is not attended to, and this precludes the making of the distinction." It seems obvious that, in this sentence, attention is taken dynamically, as something given to, bestowed upon, directed towards the sensory contents of consciousness. But suppose that for clearness I substitute a coordinate intensive attribute of sensation,—intensity itself, or duration, or extension. Then the sentence might read: "To reach a distinction between the strong and the weak, each of them must receive some measure of intensification; but the weak is just that which is not intensified, and this precludes the making of the distinction." Is any reader inclined to take this argument seriously? Then neither should he take Mr. Woodworth's paradox as a serious argument against my view of clearness. For on that view clearness is attention; degree of clearness is degree of attention; to separate attention from sensation is on a par with separating intensity or duration or extension from the sensations of which they are constitutive attributes. The paradox appears only if such a separation is made; it is the result of reading a dynamic interpretation into a bit of descriptive psychology.

There is, however, another form of the objection which it may be worth while to meet. I have put clearness on the same level with intensity, duration, and extension. But, it might be urged, we judge and report upon these attributes in the state of attention; experiments that deal with them presuppose a maximal attention, a maximal degree of clearness in the sensations; in what state, then, do we judge and report upon clearness itself? Must not any degree of clearness, high or low, be made focal in consciousness if we are to take introspective account of it? Must we not, in other words, attend to attention, if we are to have a quantitative psychology of clearness?

The reply to this objection is, I think, twofold. First, if we approach it from the side of the intensive attributes other than clearness, we must note that judgments of intensity, etc., are possible under distraction, that is, in a state of submaximal attention; the judgments are, of course, less accurate than those ordinarily passed in experimental work, but psychologically they are true judgments. It is not necessary, therefore, that intensity, duration, and extension be maximally clear in order to be judged,³ though there is un-

³ Indeed, the phrase "maximal attention" really begs the question. When we demand maximal attention, we demand in reality the highest degree of clearness attainable under the conditions of the experiment; and there is no guarantee that this degree is strictly maximal. See "Text-book," p. 295.

doubtedly an optimal range of clearness within which they prove, when comparison is made with the relations obtaining among their stimuli, to be judged most accurately. In any case, however, it is the intensity, duration, or extension itself, and not the concomitant degree of clearness, that touches off the intensive, temporal, or spatial judgment; all that variation in attention can do is to modify the judgment in a quantitative way. Secondly, and from the side of clearness, the argument may be met by the reports of observers who are called upon actually to estimate degrees of attention. There is no hint in these reports of any "attention" to "clearness"; and subsequent questioning brings out explicitly the identity of the mechanism of judgment in the various cases. Processes are given in consciousness as more or less clear, and the given degree of clearness touches off the judgment directly; degree of attention expresses itself in words, on the basis of clearness, without intervention or intermediation; it is with clearness precisely as it is with intensity and the rest. And, further, just as there is an optimal range of clearness for judgments of intensity, etc., so also is there an optimal range of intensity, duration, and extension for judgments of clearness; and just as the intensive judgment may be modified quantitatively by an unfavorable degree of clearness, so may judgments of clearness be modified quantitatively by unfavorable intensity, duration or extension. We have as yet very few experiments that are definitely directed upon the clearness attribute; but these statements follow of necessity from well-known experimental studies of the attentive consciousness.

It seems, then, that the objection in this form may be satisfactorily met. There remains the very difficult and attractive problem of recollection, of the voluntary recall of degrees of clearness. An obscure process, actually present, documents itself in judgment as obscure; of this we have experimental evidence. But what if I seek to recall the process at some later time? Then its obscurity becomes focal—and that statement looks like a contradiction in terms. The fact is, however, that under these circumstances processes which are now focal and therefore clear act as surrogates for the obscure process of the past; certain present and clear processes mean or intend a past process that, when present, was obscure. There is, I believe, no doubt of the formal accuracy of this statement; but I am not yet able to go into details. What the substitutive processes are, whether there is any special group of such processes, and how in conscious terms they mean the obscure event which they stand for, these are questions for further experiment to answer.

E. B. TITCHENER.

DISCUSSION

A DISCLAIMER

THE too flattering notice of myself by Professor James, in this JOURNAL (January 20), contains a statement which I think I should ask leave to correct. Professor James credits me with "breaking loose from the Kantian tradition that immediate feeling is all disconnectedness." But all that I have really done here is to follow Hegel. In this and in some other points I saw long ago that English psychology had a great deal to learn from Hegel's teaching. To have seen this, and to some extent to have acted on it, is all that common honesty allows me to claim. How far Hegel himself in this point was original, and how again M. Bergson conceives his own relation to post-Kantian philosophy, are matters that here do not concern me. I write merely to disclaim for myself an originality which is not mine. It belongs to me no more than does that heroic perversion or perverse heroism with which also I find myself credited.

F. H. BRADLEY.

A CORRECTION

TO THE EDITOR OF THE JOURNAL OF PHILOSOPHY,

DEAR SIR: The critical parts of Professor Montague's review of my "Pluralistic Universe" in your number of March 17, have such a crushing sound that, in order that careless readers may not suppose me quite annihilated, I am tempted to make brief reply.

My lecture on the "compounding of consciousness" was an incident in my attempt to refute absolutism, and placed itself explicitly on idealistic ground. In a world of mere "consciousness" (or of purely "subjective states") I asked, "how can parts and whole be numerically identical, when their 'content' is so different in form?" Dr. Montague seems to forget this entirely, and when he brings in a "realistic" world of independent objects and witnesses as the solution (pp. 148-9) he forgets with equal completeness that I (on pp. 200-3 of my book) indicate exactly that view as one possible solution.

My book doesn't even enter into the general question of how subjects know objects. I have treated of mediate knowledge in "Pragmatism" and in the "Meaning of Truth," of immediate knowledge (or direct perception) in the early article in this review ("Does Consciousness Exist?") to which Dr. Montague briefly refers. If he wishes to demolish my epistemology I beg him to take those writings as his objects of attack.

I say nothing of my critic's remarks on the logic of the Achilles,

etc. Perhaps if he were to spread them out more fully, I should find them easier to apprehend.

Sincerely yours,
WM. JAMES.

CAMBRIDGE, MASS.

AN EXPLANATION

I AM extremely sorry if in my review of "A Pluralistic Universe" I gave a false impression of its author's position with respect to the points mentioned in his letter. Professor James charges me with "forgetting completely" that on pages 200-8 of his book he has "explicitly" put forward the theory which I accept as a satisfactory solution of the collective-distributive puzzle. Now after several re-readings of these pages I am unable to find any statement of the theory which I defended, that I should regard as adequate. I do find at the bottom of page 200 a statement that many witnesses can know the same object, which would seem to be explicitly identical with my view; but in the next paragraph at the top of page 201, I find this view interpreted as implying that the fields of the several consciousnesses are distinct entities and that the common object of their knowledge lies beyond them, which is decidedly different from the view that I maintained. Moreover on page 206 the author says of this point of view "how can one and the same objects appear so variously? Its diverse appearances break it into a plurality; and our world of objects then falls into discontinuous pieces quite as much as did our world of subjects." And again (page 207) "In my heart of hearts, however, I knew that my situation was absurd and could only be provisional." Inasmuch as I had contended in my article that the absurdity which Professor James charges against this view depended solely on his interpreting the many witnesses as necessarily having distinct rather than overlapping fields of consciousness, thus implying a dualism between the field of consciousness and the object known, I can hardly feel that the passages to which Professor James refers contain an "explicit statement" of my own position, which it was incumbent upon me to recognize.

To Professor James's protest that I forgot that he was addressing himself to idealists and speaking from the idealistic standpoint, in pressing home the difficulty of identifying a distributively known and a collectively known object—I can only reply that I got and still get overwhelmingly the impression that he is speaking not as an idealist to idealists, but in his own person and voicing his own opinions when he says "I must in short bring back distinct spiritual agents . . . or else I must squarely confess the solution of the problem im-

possible, and then either give up my intellectualistic logic . . . or, finally, face the fact that life is logically irrational. Sincerely, this is the actual trilemma that confronts every one of us" (p. 208). Now it is on the basis of this trilemma that the defense of Bergsonian irrationalism is based. If it is as Professor James's letter seems to me to imply, a trilemma that applies merely to the idealist, why should he feel concerned in his book to escape from it by accepting the new logic? And why, too, if it applies merely to the idealist, should he state that it is "the trilemma that confronts every one of us"?

It may be, however, that I have somehow misunderstood the purport of his letter, and I offer the above not merely as a defense but as an *amende*.

W. P. MONTAGUE.

COLUMBIA UNIVERSITY.

SOCIETIES

THE EIGHTEENTH ANNUAL MEETING OF THE AMERICAN PSYCHOLOGICAL ASSOCIATION

THE American Psychological Association convened in Cambridge the last three days of 1909. Many former Harvard men were present and a good representation of the association membership was evident at the opening meeting in Emerson Hall, where, at the close of the morning session, Professor Münsterberg, on behalf of the Harvard department, extended an informal welcome. Unusual facilities for the accommodation of the visiting psychologists had been provided and the psychological laboratory was thrown open for inspection during the entire time of the meetings. The annual social event following the president's address was made more enjoyable this year through the courtesy of Professor Münsterberg, who invited the association to his home for the occasion.

The program for the meeting was replete, containing forty-five names of speakers. In addition to the usual number of papers in the general field of psychology, special attention was given to abnormal psychology, animal psychology, and the methods of teaching psychology, each of which topics occupied the whole or greater part of an entire session.

Not only the largest attendance, but the most animated discussion occurred on Wednesday afternoon, when psychoneurotic phenomena were the subject for consideration. The animus for the program was undoubtedly Freud's recent visit to this country, and the discussion centered about his theories. The fray began with an exposition of Freud's theory of the unconscious by Mr. Putnam.

According to Freud there is in many persons, in addition to the normal mental life developed on socially conventional lines, a secondary stream of psychosis whose origin is primarily in the sex-instinct. The social requirements of mental development suppress the normal outlet of this secondary stream and the instinctive attempt to find an outlet results in an ill-regulated education of this lower mental level. The growth of this level goes on, however, without conscious awareness, but with important consequences to mental life. The lower stream does not always remain hidden, but thrusts itself momentarily into the conscious field. The speaker insisted that this secondary life is entitled to a name and contended that the terms "unconscious," "subconscious," "vorbewusst," were appropriate. The rationality of the Freudian view Mr. Putnam sought to show by a comparison with Bergson's view of the relationship of bodily and mental processes in normal life. Both Bergson and Freud indicate that conscious awareness is not an essential feature of productive mental life.

Freud's application of his theory to the case of dreams was set forth by Mr. Jones. Dreams are directly continuous with the rest of mental life and are explicable as the results of well-defined causes. Dreams have a double content, one part "manifest" and the other "latent." The latent content can be discovered only by psycho-analysis. The application of this method always reveals the dream as the imaginary fulfilment of a wish, whose nature has been such that the subject has forcibly repressed it from the conscious field. When the censor has been removed by sleep, the distorted wish works itself out. On this theory, the study of dreams becomes the most valuable means of access to the deeper phases of personality.

Mr. Boris Sidis in a paper on "The Fundamental States in Some Forms of Psychoneurosis" opposed the Freudian view as to the sexual character of these phenomena, the essential trait of which is the systematic character of the manifestations. The system tends to develop into a parasitic personality foreign to the patient and recurs with such periodicity as to be described as recurrent mental states. The fundamental causes of these states it was held are the experiences of early childhood, such as mental trauma, emotional shocks, etc. Psychoneurotic states of fear are due to the primitive fear of the unfamiliar and an overdeveloped sense of the mysterious, cultivated in early life by social, moral, and religious training.

The discussion precipitated by these papers was vigorous and prolonged. Hall, Prince, Putnam, and Jones, all of whom seemed to accept the Freudian theories either as to result or method, argued that we have here an avenue of psychological investigations that promises much for the future study of the more complex mental

states. Scott, Sidis, and Whipple were skeptical of the psycho-analytic method for the study of dreams, pointing out the great danger of the experimenter influencing by suggestion the "latent mental content" to be revealed. At another time in the meeting Mr. Scott reported a series of tests made by the standard methods of studying suggestibility. The use of two "ideal" methods resulted in a zero coefficient of correlation from which he concludes that there must be made a new analysis of the factors involved. It was these data which led him to enter his objection to Freud's method.

The growing importance of animal investigations appeared in the Thursday morning program, which, with the exception of two papers at the close, was devoted to the subject. Mr. Cole reported a study of color vision in the raccoon by modification of the Kinnaman method. The essential change in the apparatus was in clamping the food glasses with their tops immediately beneath a horizontal board so that the animals could not feel or see into the glasses before choosing. A second improvement over the Kinnaman method was the great number of check experiments used to insure that the animals were really depending on the single visual factor of color. The raccoons discriminated the food glass about ninety per cent. of the time. Discussion of the paper conceded that this was one of the most thorough studies of color vision yet made and seemed practically to exhaust the possibilities of the use of pigmented papers. Those interested will be glad to learn that it is now proposed to test the raccoon further by the Watson-Yerkes spectral light apparatus.

An investigation on the visual motor coordination of the rat was reported by Miss Richardson. The device used was a jumping apparatus adjustable to different heights and distances. The animals seemed able to land on the platform only when the conditions were such that visual perception of the platform was not required. Reliance was mainly upon the motor impulses. The work is an interesting confirmation of Watson's work on kinesthetic sensations.

A third study of animal vision—this time on the size discrimination of the dog—was reported by Mr. Yerkes. The apparatus used was an improved form of the brightness device previously used in the Harvard laboratory. The work was done by Mr. Haggerty on a Cocker spaniel. The report dealt chiefly with the development of methods of handling the animal in the effort to force dependence on size to the exclusion of other stimuli. The results so far obtained point to the animal's ability to discriminate a circular area four and a half centimeters in diameter from one six centimeters in diameter.

Preliminary experiments on anthropoid apes were reported by Mr. Haggerty. Two oranges and a chimpanzee were tested at the

New York Zoological Park by the problem method. The devices were adapted from Hobhouse and the results, while not extensive, tend to show (a) a remarkably fertile field for the investigation of animal intelligence; (b) a definite and precise limitation of the sense-impulse theory of animal learning; (c) a greater rôle for imitation than among any of the lower species of primates.

In addition to the four investigations, place was found on the program for one paper of a more general nature. Mr. Burnham proposed a "Working Hypothesis for Animal Psychology." The essential part of the hypothesis is that there has been not only an evolution of total mental states, but that each sort of mental state has had its own particular development. Thus there are not only levels of intelligence, but rather levels of the evolution of perception, of memory, of judgment, etc. In the human mind we have not a hierarchy of faculties, but a hierarchy of stages in the development of each fundamental process.

On Thursday afternoon the Committee on Methods of Teaching Psychology made its report. Abstracts of the work of the committee had been distributed earlier and the time was occupied by comment on specific phases of the report by the persons who had had the report in charge. The fact that the discussion was participated in by Seashore, Whipple, Calkins, Sanford, Pillsbury, Baird and Warren indicates the degree of interest the leaders of the field are taking in the pedagogy of the subject. The discussion showed that the most diverse aims and methods now prevail in different institutions, that everything from physics to metaphysics is taught in the name of psychology with the consequent misfortune that students are confused and the subject too often discredited as a part of an educational curriculum. The report is positive in character, replete with practical suggestion for normal schools, colleges without laboratories, and colleges and universities having laboratories. Printed copies are to be distributed to all members of the ASSOCIATION and the report will go far toward giving psychology its proper place and dignity in the realm of educational disciplines. Two other papers during the meeting dealt with methods of teaching, one by Mr. Hylan on "An Instance in Intensive Teaching of Psychology" and a second by Mr. Warren on "The Form of the Color Pyramid."

Educational psychology shared in the program with three papers. Mr. W. F. Dearborn reported an investigation of the eye movements in children's reading. Photographic records of these movements were regarded as an index of the attention span and are thus superior to tachistoscopic tests. They thus furnish an indication of the pupil's progress in learning and the value of a pedagogical method.

Mr. Arnold had studied the mental retardation of children by three methods. The child's breathing was obstructed by a plug in the nostril and was then tested with simple mental tasks. Efficiency decreased with the obstruction. Tests on children with defective eyesight showed that while poor eyesight was physiologically harmful it was not pedagogically so. Further tests showed that the ignoring of individual differences in school gradation was an automatically working cause of retardation.

A paper by Miss Theodate Smith discussed a set of collected observations on the sense of shame in animals and children with the conclusion that the development of shame in the phylogenetic and ontogenetic scale coincides with the development of self-consciousness.

However, the special emphasis given to particular interests did not eclipse the attention to normal human psychology. In this field there were six papers, five of them reporting extended experimental work, and one a bit of introspection on the type of ideation. The latter was by Mr. Colvin and set forth his own ideational type as being a marked case of the motor variety, a form which he called mimetic, owing to the tendency to make actual movement when sensation or image is present.

The tactual estimation of filled and unfilled spaces has been newly attacked by Miss Cook, who has conducted a three-part investigation. In the first part a filled and an unfilled space were placed successively on the same surface; in the second part, the spaces were placed simultaneously on adjacent parts of the forearm; and in part three the spaces were presented successively but in the same relative position as in part two. All filled spaces were underestimated in the first part and overestimated in the second, while the illusion practically disappeared in the third part. In the second sort of illusion the subjects either judged the total impression of the filled space or localized the end points, the illusion being the stronger in the first case. The experimenter thinks the displacement a phenomenon of attention. In experiments of the third type, the slight illusion that appeared was an overestimation in the case of subjects who judged by immediate impression and an underestimation by those who relied upon localization. The same illusion appeared in the case of two blind subjects and it is concluded that the illusion is truly tactual.

In discussion Mr. Münsterberg pointed out that the results did not contradict those of Rieber which showed that the tactual illusions correspond to the visual.

Mr. Carr read a paper on "The Autokinetic Sensation," giving the results of extended experimentation. Eye movements do not occur when the fixation point remains with the light, but they do occur when the fixation point remains apparently stationary and the

light moves away from the point. The velocity, extent, direction and regularity of the illusion are dependent on the position of the eyeball in the socket. Fatigue also is a factor and the illusion holds for a foveal negative after-image, but no correlation was found between the aspects of the illusion and the bulbular twitchings. This last result tends to disprove the integration theory of the illusions.

Mr. Pillsbury presented a new phase of the attention wave problem. The fluctuations of a minimal stimulus are not longer to be regarded as true attention waves. The experiments were made by Messrs. Work and Billings with a view to measure the period during which one might attend to a supraliminal stimulus. The average length of attention for fourteen subjects was from 1.2 (with m.v. of 4) to 4.2 (m.v. 1.2) seconds and for three other subjects .98 to 2.4 seconds based on a thousand results. The results seem to indicate the time that any impression may be held before consciousness without change.

Progress in determining the nature and cause of the galvanic phenomena has been made by experiments reported by Mr. Boris Sidis. As to its nature the results confirmed the author's previous contention that the phenomenon is due to the generation of an electromotive force under the influence of sensory stimulation and affective states. In the experiments, the skin secretions, circulation, and effects of the sympathetic and central nervous systems were eliminated as possible causes, and the phenomenon seems to be of muscular origin.

The popular belief that color-blindness is rarer among women than among men is put seriously in question in a study by Mr. Hayes on 457 college women. The results of tests with Nagel cards show color deficiency in 104 of the number. Twenty-three of these were further examined in the laboratory, with the result that two were found to be color-blind, four others almost if not wholly so, and the remaining 17 showed marked deficiency in ability to discriminate colors. In many cases marked differences in the two eyes were discovered.

Twice during the meeting questions of psychological theory came to the fore, once during the president's address and again in a paper by Mr. Mead on "What Social Object Does Psychology Presuppose?" Both speakers dissented from the generally accepted doctrine that introspection into a private consciousness is the only legitimate procedure for psychology. The thesis defended by Mr. Judd in his address on "Consciousness and Evolution" was that "the concept of consciousness is most productively utilized in science when it is treated as a cause. It determines by its present organization the mode of future action." This view accepted, "the study

of the relations of conscious processes to the environment and to the other inner functions of the human individual becomes the legitimate work of the science of psychology. Psychology thus becomes the science of the function of consciousness in the world rather than a mere introspective account of the various elements of conscious states." On this view psychology acquires a field of objective study. This thesis, which is not new in Mr. Judd's speculations, was founded upon an historical statement of the evolutionary process made to show that the course of evolution has not been free from the determining influence of conscious processes, that language and art are not to be understood as biological phenomena, and that not biology, but psychology must be the basis of the social sciences.

Quite in the same spirit Mr. Mead held that the self of introspection was not the basis for the recognition of external selves, but that these latter are logically preexistent to the former. Selves are social objects which psychology must presuppose as definitely as it presupposes the physical object—the physical organism and its nervous system. The social sciences must state the conditions under which self-consciousness is possible rather than that self-consciousness should create in a solipsistic way the selves it will recognize.

Other papers offered by title only were by Messrs. Dunlap, Stratton, Wells, Porter, Franz, Ferree, Burnett, G. V. N. Dearborn and Lough. Mr. Whipple demonstrated two instruments for brightness discrimination, a pressure-pain balance and forks for pitch discrimination. A new pendulum chronoscope was described by Mr. Twitmyer.

Mr. Pillsbury was made the new president, and Messrs. Lindley and Yerkes were elected to the council for a period of three years each. The 1910 meeting will be at Minneapolis.

M. E. HAGGERTY.

INDIANA UNIVERSITY.

REVIEWS AND ABSTRACTS OF LITERATURE

Esthetics. KATE GORDON. New York, Henry Holt & Co. 1909. Pp. 315.

In the field of esthetics only one thing is more conspicuous than the lack of teachers of all-around competency, and that is the dearth of elementary text-books. Treatises, monographs, and essays abound, but the beginner, seeking a broad, illuminating survey of the problems and answers in the philosophy of art, must trust to lectures or else go beyond the English language; and, if the latter, who will assure him success? Neither of the two books which have aimed to supply his demand—to wit, Santayana's "Sense of Beauty" and Puffer's "The Psychology of Beauty"—has stood the test of class-rooms. They score on very different targets;

each handles some aspects of esthetics, but no more, and each frequently becomes too special or too profound for the undergraduate who is taking his first dip. All this makes Miss Gordon's volume a noteworthy contribution, inasmuch as its harshest critic must confess that, first of American works, it possesses the fundamental virtues of an introduction. It outlines the entire field of esthetics. Its style is simple and declarative. Controversy is not heard in it. Obscure issues are not raised. There are many clear examples and a number of figures. And each chapter closes with a well-selected cluster of reading references. If there is any structural defect worth mention, it is probably the enumeration of special forms: thus, Miss Gordon names and comments briefly upon each rhythm-type, she gives a short history of the dance and follows it with a sketch of the religious dances of the Middle Ages, the pavan, the gavotte, the minuet, the pas de basque (to which she devotes a page), and finally three pages on the principles of posture and movement, all of which principles must be taught in dancing-school but have no place in a course on esthetics, being nothing more than rules of poise and manipulation. While there is the same tendency to descriptive detail in the chapter on The Character of Simple Lines and Forms, it here enjoys a much sounder excuse; the details are not rules for draughtsmen or a catalogue of geometrical species, but rather a most useful account of the immediate esthetic effect, the suggestiveness and the manner of employing artistically lines, figures, and patterns.

A text-book should not be criticized for the theories on which it has been built, except in so far as these mar the presentation of the subject to the student's eyes. Miss Gordon advances many propositions about which the fire of doubt burns fiercely; take, for instance, her assertion that "the appreciation of nature is derived from the appreciation of human art products," or that "criticism may be called the esthetics of particular cases," or that emotion is representative, or that magic is an incentive to the imitative impulse (instead of being a by-product of that same impulse). Whether these opinions can win their fight or not need not concern him who is looking for a good text-book; they are stated frankly, simply, and undogmatically by Miss Gordon, and the worth of the book does not hang in the slightest upon them. It is the mass of admirably chosen facts and their clear ordering that count; and they promise Miss Gordon's production a long and successful career.

WALTER B. PITKIN.

COLUMBIA UNIVERSITY.

Augaben und Ziele des Menschenlebens. DR. J. UNOLD. Leipzig: B. G. Teubner. 1908. Pp. vi + 142.

The book is a plea for supplanting religious instruction in the schools (particularly those of Germany) by a course of training in scientific ethics. Dr. Unold deplores the tendency of the German government to increase the hours of religious instruction in the schools with the hope of counteracting the degeneration of morals which has followed the loss of religious faith in the mass of the people. The emancipation from religious au-

thority Dr. Unold regards as a step in advance in ethical progress. He points out the fact that the ethics of religion depends upon external authority, which the individual is constrained to obey by a system of arbitrary rewards and punishments. Though he recognizes the usefulness of such a stage of ethical development in establishing social habits, he believes that it is already outgrown. The remedy for the degeneration of morals (the reality of which he does not question) he finds not in the attempt to force the people back into religious restraints, but in the thorough ethical instruction of the young.

The course of ethical training which Dr. Unold outlines comprises a theory of ethics which is to be classed as a type of perfectionism. Ethical conduct consists in a conscious striving toward the purposes of life revealed in organic evolution, in the development of social organization, and finally in the history of human culture. From the first two sources he derives two fundamental practical ends of existence: (1) the maintenance of the race by means of the preservation, adaptation, and reproduction of the individual, (2) the development of the greatest possible degree of variety, and of efficiency in both the race and the individual. The attempt to realize these ends constitutes the practical duties, such as the preservation of individual health, public hygiene, the production and care of children, rational choice in marriage, obedience to the common laws of state and society, and the education of the youth to social service. These laws of the merely practical realm of conduct are safeguarded, and their fulfillment in part insured, by the fundamental laws of the organic world, and of human society. Their violation necessarily results in harm to the individual, and to society. If the youth asks why he ought to strive to conform to these rules of conduct, it is a sufficient answer to point out the inexorable nature of the connection between the transgression and the punishment when they are violated. A youth who fully understood this connection would need no further restraint in the form of heaven and hell.

The third and highest end of conduct is revealed in the history of human culture. It alone transcends the practical, and deserves to be called ethical. This end Dr. Unold defines as the perfecting (*Vervollkommnung*) of the various kinds of progress to be found in the history of culture, namely, (1) intellectual-scientific, (2) artistic-literary, (3) technical-commercial, (4) political-social, and (5) ethical-religious. Progress in the ethical-religious field is given a special name—the process of ennobling (*Veredlung*)—and is treated in detail. The ennobling of the race is a threefold process, consisting of (1) humanizing (development of intellect, refining of feeling and discipline of the will), (2) individualizing (the production of exceptional personalities), and (3) socializing (the development of a sense of national loyalty and social solidarity). The highest end of conduct he accordingly states as follows: "The production of an intelligent and noble personality, which shall devote itself consciously and with enthusiasm to the cause of social-commercial, national-political, and universal-human progress."

But the youth who asks why he ought to strive toward the realization of the highest end of conduct is not so easily answered as in the case of

the practical ends. The development of a noble personality is an end which is set by the course of self-determined conscious activities, and which lacks the binding force of natural law. Dr. Unold concludes that the ethical ideal must depend for its motive power upon an act of faith on the part of the individual—faith not in a supernatural power, but in the power of the individual intellect to understand, and of the individual will to fulfill, the laws of life. It should be one of the first objects of early education to instill such a faith in human might and in human destiny.

The book closes with a discussion of eudæmonism, and utilitarianism. The former doctrine is ranked lower in the ethical scale than the latter, but both are regarded as confined to the limits of the merely practical.

The manner of presentation is clear, simple, and untechnical, and there are numerous summaries which make the argument easy to follow. The book contains a mass of suggestive detail to which no justice can be done in a brief summary.

HELEN THOMPSON WOOLLEY.

CINCINNATI, OHIO.

JOURNALS AND NEW BOOKS

THE PHILOSOPHICAL REVIEW. January, 1910. *Perception and Physical Reality* (pp. 1–21): J. A. LEIGHTON. – Physical reality in the complex content of actual and possible perceptual experience. The reality of perception logically involves the thoroughgoing interdependence and correlation of perceptual object and percipient mind. *The Self* (pp. 22–33): FRANK THILLY. – The self exists. It is experienced. It is what is aware of states, owns them, recognizes them, remembers them, connects them, assumes attitudes toward them. No philosophy or psychology can afford to ignore the self as a part of experience or dissolve it into a mere sum of states. *The Schematism in Baldwin's Logic* (pp. 34–52): C. H. WILLIAMS. – Professor Baldwin emphasizes the experimental character of thought, but differs from pragmatism in maintaining that the true universal is something beyond the hypothetical general (or schema), and that it exhibits fixed and determined knowledge. This position may be criticized as creating a false dualism between the “as of general” and the true general, or at bottom between percept and concept. Professor Baldwin's schematic method is not new, but is a thorough working out of the old method of hypothesis and proof. *The Notion of the Implicit in Logic* (pp. 53–62): J. E. CREIGHTON. – The notion of the implicit is attacked as a fallacy in Baldwin's Genetic Logic. Idealists have abused the notion, but its legitimate use can not be dispensed with. *Reviews of Books*: William James, *The Meaning of Truth*: GEORGE TRUMBULL LADD. Ludwig Stein, *Philosophische Strömungen der Gegenwart*: HENRY W. STUART. F. Pillon, *L'année philosophique*: E. L. HINMAN. James Bisset Pratt, *What is Pragmatism?* GEORGE ROWLAND DODSON. *Notices of Books. Summaries of Articles. Notes.* ..

- Bawden, Heath. *The Principles of Pragmatism*. New York and Boston: Houghton Mifflin Co. 1910. Pp. viii + 364.
- Davenport, C. B. *Eugenics: The Science of Human Improvement by Better Reading*. New York: Henry Holt & Co. 1910. Pp. 35 + 7 pages of diagrams. \$.50.
- Davies, A. E. *The Moral Life. A Study in Genetic Ethics*. Baltimore: Review Publishing Co. 1909. Pp. xii + 187.
- La Monte, Robert Rives (Socialist) and Mencken, H. L. (Individualist). *Men vs. The Man. A Correspondence*. New York: Henry Holt & Co. 1910. Pp. 252.
- Leenhardt, F. *L'Evolution: Doctrine de Liberté*. Saint-Blaise et Roubaix: Foyer Solidariste. 1910. Pp. 154.
- Samuelson, James. *The Human Race*. London: Swan, Sonnenschein & Co. 1910. Pp. xii + 192.
- Stumpf von, Carl. *Philosophische Reden und Vortrage*. Leipzig: J. A. Barth. 1910. Pp. 261. M. 5.
- Volkert von, Johannes. *System der Aesthetik. Band II*. Munchen: C. H. Beck'sche. 1910. Pp. xxii + 569. M. 10.50.

NOTES AND NEWS

ACCORDING to *Science* for March 11, "the naturalists of France and of many other parts of the world are uniting in a jubilee celebration in honor of J. H. Fabre, styled by Charles Darwin 'the immortal Fabre,' and referred to by him also as 'that inimitable observer.' Fabre, after years of labor and of patient observation and of most important work, is, in his age, the most modest of men, leading a retired life, and his admirers everywhere and in all walks are uniting in this celebration. Not only are naturalists coming together for this jubilee, but prominent officials throughout France and prominent men in literature as well, since Fabre's published work possesses a high literary value. No one, says David Sharp, has ever written on his subjects with equal brilliancy and vivacity. So Mistral, the poet; Edmund Rostrand, the poet and dramatist, and Maurice Materlink, the naturalist, philosopher and novelist, among others, have united in this jubilee. Members of the French Academy engaged in other branches of science, such as Poincaré, and men prominent in many walks of life, not even excepting journalism, such as Hèbrard, the director of the *Temps*, have also associated themselves with Fabre's other admirers. The jubilee will be held on the third of April, at the time of the inauguration of the Institute of Oceanography by the Prince of Monaco. A medal will be struck in honor of the occasion. Americans wishing to contribute may send their subscriptions to Dr. L. O. Howard, permanent secretary of the American Association for the Advancement of Science, Smithsonian Institution, Washington, D. C. These should be sent at once, since the subscription closes the twenty-fifth of March."

THE paper, the abstract of which follows, was read by Miss M. E. Durham before the Anthropological Institute at its meeting on February

22. "High Albania is the only spot in Europe in which the tribal system exists intact. The tribes occupy the mountain land which forms the north-west corner of Turkey in Europe. They are exogamous, but male blood only counts. Each tribe is ruled by a council of elders, by ancient laws handed down by oral tradition, which are strictly enforced. Roughly, the tribes may be divided into three groups, one of which tells a tale of origin from Bosnia; the second, of partial origin from Rasha; while the third declares that it has "been there all the time." The tale of origin from Bosnia is confirmed by the fact that the tattoo patterns used by these tribes are used in certain districts of Bosnia. Among other very ancient customs, the Levirate is still practised, even by many of the Roman Catholic tribes. Blood vengeance is extremely prevalent throughout both Christian and Moslem tribes. Its rules are complicated. Up country, the houses are all stone Kulas (towers), built for defence, and having no windows, but only loopholes for rifles. Communal families of as many as forty members live together in one room, ruled by the house lord, who has often power of life and death over his subjects. Marriage is always by purchase, save for an occasional forcible capture. Children are betrothed in infancy. Thirteen to fifteen is a common age for a girl's marriage, and fifteen to eighteen for a boy. Hospitality is the universal law of the mountain. The tribesman, if he receives a traveller at all, gives him of his best."—*The Athenæum*, March 5.

THE corporation and the board of overseers of Harvard University have created the department of university extension, and appointed in it the following officers Dean, Professor Ropes; members of the administrative board for 1909-10, Professor Ropes, Professor Royce, Professor Hanus, Professor Hart, Professor Moore, Professor Osterhout, Professor Hughes, and Professor Munro.

D. APPLETON AND Co. announce for spring publication a new edition of the works of Herbert Spencer in eighteen volumes, and "The Psychology of Reasoning" by Professor W. B. Pillsbury, of the University of Michigan. Macmillan and Co. announce "The Religion of the Chinese" by J. J. M. De Groot.

DR. E. H. CAMERON, instructor in psychology in Yale University, has been advanced to the grade of assistant professor.

DR. F. S. BREED, at present engaged in work in comparative psychology at Harvard University, has been appointed instructor in psychology in Yale University.

THE JOURNAL OF PHILOSOPHY

PSYCHOLOGY AND SCIENTIFIC METHODS

THE PRAGMATISM OF KANT

EVERY theologian who has felt the influence of Albrecht Ritschl has been accustomed to lay emphasis upon certain elements in the teaching of Kant which are in harmony with the way of looking at things now so commonly known as pragmatism. It therefore seems to such theologians, or at any rate to one of them, strange that so little account is taken of Kant and of his influence in discussions of the pragmatic movement, whether by its friends or foes. In a famous and often quoted passage in one of his addresses, Professor James remarked: "I believe that Kant bequeathed to us not one single conception which is both indispensable to philosophy and which philosophy either did not possess before him or was not destined inevitably to acquire after him through the growth of men's reflection upon the hypotheses by which science interprets nature. The true line of philosophic progress lies, in short, it seems to me, not so much *through* Kant as *round* him to the point where now we stand. Philosophy can perfectly well outflank him and build herself up into adequate fullness by prolonging more directly the older English lines."

This judgment shows an amazing disregard of a side of Kant's teaching with which one might expect Professor James to be in heartiest sympathy and to emphasize accordingly. He is not singular in his attitude towards Kant. The impression given by many modern writers on philosophy, English and American, is that Kant is interpreted so exclusively in the light of post-Kantian, particularly Hegelian and neo-Hegelian idealism, that a large and important part of his thought has failed to receive the attention it deserves. It is in this neglected side of his thought that I am myself particularly interested, and no one surely can read Kant's posthumously published essay "Über die Fortschritte der Metaphysik seit Leibnitz und Wolff," the clearest and best summary of his philosophy with which I am acquainted, without realizing that he too was particularly interested in it. It appears most fully worked out in his "Kritik der praktischen Vernunft" and his "Grundlegung zur Metaphysik der

Sitten," but it comes to forcible expression also in nearly all his later writings, notably in the posthumous essay just mentioned. I refer, of course, to the doctrine of the postulates. We can not prove supersensible realities, they are inexperienceable by us. But in order to the living of our moral life, the fulfilling of our moral purpose, we postulate them and then live by them. We do not find them, we create them. We make them true by postulating them. To quote from Kant: "Out of the moral law which our own reason prescribes to us with authority, and not out of the theory of the nature of things in themselves, arises the conception of God which the practical pure reason compels us ourselves to make."¹

"Granted that the pure moral law absolutely binds every one, not as a prudential rule but as a command, then the right-minded man may well say: 'I will that there be a God, that my existence in this world be also an existence outside the chain of nature, in a pure world of the understanding, finally, that my existence be endless. I insist on this and will not permit this belief to be taken from me.'"²

"So far as the idea of purpose is concerned it is always made by us, and the idea of the supreme purpose must be made *a priori* by the reason."³

"In this case we should not have to undertake investigations into the nature of things which we make for ourselves and solely for practical purposes, and which perhaps do not exist outside of our idea, and perhaps could not even though no contradiction were involved. For if we did we should only run into extravagance."⁴

"Theoretically we come by the most strenuous exertion of reason no whit nearer the conviction of the existence of God, the reality of the highest good and a future life, for no insight into the nature of supersensible reality is possible for us. Practically, however, we make these objects for ourselves as we regard the idea of them helpful to the ultimate aim of our pure reason."⁵

These (*i. e.*, the postulates) "are ideas made by ourselves with a practical purpose which must not be given theoretical value or they will turn theology into theosophy, moral teleology into mysticism, and psychology into pneumatology, and so put things a knowledge of which we make use of in practical matters over into a transcendent sphere where they are entirely inaccessible to our reason."⁶

¹ "Von einem neuerdings erhobenen vornehmen Ton in der Philosophie," p. 17; Vorländer's edition; in the *Philosophische Bibliothek*, Vol. 46a.

² "Practical Reason," *ibid.*, Vol. 38, p. 182.

³ "Fortschritte," *ibid.*, Vol. 46 c, p. 125.

⁴ *Ibid.*, p. 127.

⁵ *Ibid.*, p. 130 ff.

⁶ *Ibid.*, p. 143.

"Therefore belief has in itself a moral value, because it involves a free assumption.⁷ The *credo* in the three articles of the confession of the pure practical reason . . . is a free acceptance of them as true without which it would have no moral value. It permits, therefore, no imperative (no *crede*), and the argument upon which its correctness is based is not that these propositions theoretically considered are proved to be true, or that there is objective information touching the actuality of the objects themselves, for this is impossible in connection with the supersensible, but that there is subjective and from the practical point of view valid ground to justify us in acting as if we knew that these objects were real."⁸

"That the world as a whole is always improving,—this conviction is justified by no theory, but by the pure practical reason which commands us to act in accordance with such an hypothesis, and so creates a theory agreeable to this principle."⁹

We are evidently moving here in a realm of pragmatism. If one says we have no evidence for the existence of God, no proof of divine purpose in the world, we may say in the spirit of Kant: We will put purpose there, we will give the world meaning which we can not discover in it. This is to be religious in Kant's sense. Faith in God is an heroic deed, not a passive acquiescence. We make a moral purpose supreme and we read it into the universe and thus we find God for ourselves. The primacy of the will, the recognition of its activity in forming truth, the insistence upon the practical nature and practical test of the truth thus formed—all this surely is genuinely pragmatic.

It is true that there is an absoluteness about the belief in supersensible realities thus gained which contrasts sharply with the looseness with which the modern pragmatist holds his postulates. And it is true, too, that Kant will hear nothing of the verification of these postulates by sense experience. But it is to be noticed that they are verifiable in man's moral experience; in the realm of values. In other words, they work in the moral life. If they do not, if by means of them the moral life can not be lived and the moral purpose forwarded, then they break down and must be repudiated. And so there is a consistent pragmatism after all, even though it is obscured by the use of the term experience in a narrow sense, and the conse-

⁷ It is interesting to compare with Kant's notion of belief Hume's description of it as a "more vivid, lively, forcible, firm, steady conception of an object, than what the imagination alone is ever able to attain," and his denial that it depends in any way upon the will. (See the fifth section of his "Inquiry Concerning the Human Understanding," entitled "Sceptical Solution of these Doubts," part 2.)

⁸ *Ibid.*, p. 129.

⁹ *Ibid.*, p. 139.

quent assertion that the postulates are independent of all experience and should look for no validation there. The truth is that the fundamental difference between Kant and the pragmatists, as appears clearly enough in this connection, may be summed up in the statement that the latter take the word experience in a broader sense than he.

But in any case, even if there be an unpragmatic element here, it should not blind us to the significance of Kant's main contention. Man is a factor in the making of reality. The world is plastic, and is in part, at least, and in its most important part, what man makes it, for he gives it meaning and value. Reality is not simply what we find it, it is also what we make it.¹⁰ It is not merely the given things, the brute facts, it is what we transform them into by interpreting them in accordance with our ideals and bringing them into subservience to our purposes. The practical reason according to Kant is not something to be apologized for, a monstrosity in the philosophical world, as most of his followers thought. It is superior to the theoretical reason because it carries us over into the higher realm of values, the realm of ideals and purposes, the plastic realm in which man is a dominant factor in the making of reality. It is significant that in his "Fortschritte" Kant defines metaphysics as the study of the way in which the reason may pass from sensible to supersensible realities,¹¹ and accordingly represents his Critique of the Practical Reason as alone dealing with metaphysics in a positive sense, and claims that his conclusions there mark the chief advance in metaphysics since Leibnitz and Wolff. His interest in the realm of values and the supreme significance which he attached to his epoch-making labors in that realm are thus made abundantly evident. Attention may be called in this connection to the fact that in his little essay "Was ist Aufklärung?" published in 1784, he defined *Aufklärung* not as the rationalist Mendelssohn had done, solely in intellectual terms, but as independence and maturity of character, the courage and the will to act as well as to think for one's self—a practical, not a mere theoretical, *Aufklärung*.

There are many other elements in this part of Kant's teaching which have a decidedly pragmatic sound and remind us of positions emphasized by one or another modern pragmatist. The contrast which Kant's idealistic followers are fond of drawing between appearance and reality, as if there were no reality in phenomena, was

¹⁰ The familiar fact should not be overlooked in this particular connection that in opposition to Locke's view of knowledge as a purely receptive process Kant made the creative activity of the knower a fundamental thesis of his philosophy.

¹¹ P. 84.

denounced by him as unsound. Phenomena are real. Sense experience is a necessary element in reality and so reality is not fixed and unalterable, but is constantly in the making. The absolutism in this sphere against which the pragmatists are continually protesting is not Kant's.

The monism of post-Kantian idealism which some pragmatists are opposing so strenuously is equally foreign to him. The world is given not as an all, but as an each. It comes to us in experience as the many, not as the one. We may unify it conceptually by our reason or practically by our will, but the unity is not primal unity in which the many inhere and from which they flow. It is rather a unity to be attained, a unity in the making. Moreover, it is not absolute or all-inclusive; there are refractory elements which remain outside not only of our own unification, but of every one's, God's included. Kant was no easy-going optimist, treating evil as unreal. He believed in the existence of the radically bad and in its progressive overcoming not by its being taken up and transcended in the consciousness of the absolute, but by the conflict of free human wills. Man alone can overcome evil. It is his work, not God's. And though he live on everlastingly in an immortal life, the labor of overcoming will never be finished.

Similarly the God whom Kant postulates upon the basis of man's moral purpose is not an absolute being. He is not the one, or the all. The reality and freedom of the individual are in no way limited by Him. He is simply one of many free moral beings, working each for his own end. He need not even be infinite. To postulate Him is simply to postulate will and power for the accomplishment of a certain definite purpose, beyond that and aside from that nothing. Whether or not Professor James's pluralism be regarded as a necessary consequence of his pragmatism, at any rate it is congenial to the pragmatic spirit. The same is true of the pluralism of Kant.

That there are important pragmatic elements in Kant's teaching no one certainly can deny in view of the considerations that have been mentioned. But what of the "Critique of the Pure Reason," with its emphasis upon necessity, its insistence upon the *a priori* character of the forms of knowledge, and its deduction of the transcendental categories of thought? I do not desire to overlook or to minimize the unpragmatic character of this side of Kant's thought. I simply wish to remark that when the situation which he faced and the dominant interest which controlled him are considered, the contrast between him and the pragmatists even here is seen to be less complete than it seems. It is to be observed that Kant was awakened by Hume from the rationalism of the Wolffian school, which taught that knowledge is possible apart from and independent of experience,

that it may be the fruit solely of "pure ideas of the understanding" (to quote Kant himself), an assumption which led to intellectualism and absolutism of the most extreme type. Against this Kant protested earnestly and insisted in opposition to it that no *a priori* knowledge of any kind is possible, that knowledge can not exist apart from experience and independent of it. What he did, as a matter of fact, when Hume's challenge awakened him out of his dogmatic slumber, was not to meet Hume's scepticism by the rationalistic method of setting up a scheme of *a priori* and necessary truth independent of all experience, but on the contrary to turn to experience itself and analyze it. In so far he was as radical an empiricist as Hume himself. The *a priori* forms and categories of thought are given only in experience. To be sure, they are not the fruit of experience, they are its pre-conditions. But apart from experience they are wholly unknown and have neither significance nor reality. They are, indeed, experiential forms, not in the sense that they are *a posteriori* and derived from experience, but in the sense that they have to do only with experience. Kant's analysis of the process of knowing may be regarded as sound or unsound. In any case, it looks unpragmatic in its outcome, for it finds elements which are not in any sense either directly or indirectly the fruit of experience and which can not be explained by it. But this should not blind us to the still more significant fact that he discovers neither these nor anything else anywhere but in experience. The limitation which he put upon the pure reason, denying that it could transcend experience, is as essential a part of his "Critique of the Pure Reason" as the powers he assigned to it, and when one takes it in connection with the "Critique of the Practical Reason" which follows one must say an even more important part.

It is to be noticed still further that the necessity which attached to the *a priori* forms and categories, and upon the importance of which Kant laid so great stress throughout his discussion, was not the necessity of a transcendental object or system or scheme of truth. It was simply a necessity found, so he thought, in experience (though not deducible from it) and valueless beyond experience or independently of it. He admitted that other beings might have other laws of thought and their knowledge exist under other conditions. That is, the necessity which he ascribed to the forms and categories was a necessity observed in the actual phenomena of human knowledge and therefore properly assumed there, but only there (compare "*Fortschritte*," p. 92). It was not a necessity which could be used for the construction of a world of objects or ideas transcending experience and unrelated to it. Kant's categories of thought were purposive in character, existing to meet the demand of the human mind for order-

liness and sanity, and his failure to investigate their genesis and his use of the unpragmatic term *a priori* in connection with them should not mislead us as to the real significance of his position. His interest was not that of the intellectualist, to reach absolute truth to set over against the unreal world of shifting experience, but rather that of the empiricist to account for and explain experience. How are synthetic judgments *a priori* possible? This was the problem of his "Critique of the Pure Reason." In other words how are certain given facts in experience, for so he understood them to be, possible? The difference between him and the pragmatists, after all, is at bottom a difference in their respective interpretations of experience. He interrogated it as eagerly as they and he refused as firmly as they to go beyond it. As between the empiricism of Hume and the intellectualism of the Wolffian school he belonged with Hume. And still more emphatically as between the pragmatists of to-day and the intellectualists of either the Bradley or the Royce type, against whom they chiefly fulminate, he belongs with the pragmatists. Kant was an anti-sceptic but not an anti-empiricist. Certainty he did seek over against the scepticism of Hume, but he sought it in and for experience, not apart from it and not for other and transcendental purposes. His protests against the idealistic development that claimed to be the legitimate fruit of his philosophy are familiar to everybody. He had no sympathy with that development. On the contrary, his interest was quite the reverse and his "Critique of the Pure Reason" should itself have made it clear even had not the "Practical Reason" and other later works followed.

It would be too much to call Kant a pragmatist. There are too many unpragmatic and anti-pragmatic elements in his system, and not a few important features of modern pragmatism come from influences that have arisen since his day. But the pragmatists are his true successors and not the intellectualists or absolutists of one and another type. It is he that has made pragmatism possible, it is he, indeed, that has had, more than any one else, to do with making it actual, and of all modern thinkers the pragmatist should be the last to say that "the true line of philosophic progress lies not so much *through* Kant as *round* him to the point where now we stand."

A. C. MCGIFFERT.

SOME NEGLECTED PARADOXES OF VISUAL SPACE.¹ IV

IN the matter of correspondence between the image on the retina and the form or pattern perceived by the owner of the retina, the biologist's dilemma shows up at only half-length, but already awesomely enough. If, following a Kantian like Driesch, he regards space as a hyperchemism,—that is, as a product of two noumena neither of which is spatial any more (and presumably even less truly) than oxygen is water,—then how does it happen that the very sense organ which specializes in the manufacture of the raw noumenal material out of which the Ego produces space chooses to take on such a structure and materiality that, from the point of view of another observer, it anticipates, at a given point in its mechanism, the very space form which, at a later step in the *a priori* synthesis, becomes an experience? The complete idealist can not say, with Professor James, that we have to do here with a mere coincidence, a misleading accident; for, note well, if the idealist agrees that the eye is the mechanism of space-sensing, he really is condemning himself to say that in reality the eye is itself spaceless—or, what amounts to the same thing, that it is spatial only as a phenomenon, only in so far as somebody is seeing *it*, and not in so far as it is an instrument in producing vision. I fear this does not impress most idealistically inclined biologists as an inevitable result of their position, nor yet as a very serious one. But I think it is both.

To hold at one and the same time that there are organisms living in some kind of an environment and that space is only phenomenal, one must go the full length with Driesch and agree that the real ultimate agents in such a world are themselves spaceless; and it is greatly to Driesch's credit as a consistent thinker that he has not shirked this conclusion. It must be admitted, in all logic, that the organic structures which we seem to perceive as extended and very nicely differentiated with respect to position, size, form, etc., are not actually extended, but simply have a nature that, when conjoining noumenally with a noumenally distinct Ego, produces the appearance of extension. The retina, therefore, possesses a most amazing capacity, putting to shame all the creatures in Alice's Wonderland. For, being spaceless, it not only manages to manufacture, or assist in the manufacture, of space; but, in so doing, it takes on the appearance, not of manufacturing the space which its owner eventually perceives, but of copying that space from some noumenon! Of course, it can not be copying a phenomenon, inasmuch as a phenomenon exists, by definition, only inside of some Ego's consciousness

¹ Read in part before the American Philosophical Association at New Haven, December, 1909.

system. So far as I can follow the idealist through this Cretan labyrinth, and see his way as I stumble along, he seems to be proving that the retinal image is neither truly a phenomenon nor yet a noumenon. For once admitting, as I suppose he does, that the retina and its disposition at the moment has some reality above pure illusion, he must say that the image, from its owner's point of view, is neither the object seen (*e. g.*, the phenomenal tree), nor the noumenal entity (the tree in itself) nor yet the spaceless noumenal perceiving Ego. And, from the point of view of an observer with an ophthalmoscope, that same image is neither the phenomenal nor the noumenal tree that appears to the owner of the retina.

I envy the thinker who can make sense of all this; and yet it states the idealistic position quite fairly, I think. But the gravest difficulty is not yet; it comes with my attempt to understand how a Kantian biologist conceives the correlation and differentiation of optic parts. If he considers the eye as really, and not only in a phenomenal way, the medium of effecting the *a priori* synthesis resulting in visual space, he must concede a most mysterious effort or tendency in the vital force to mould, not only the retina, but the whole optic apparatus, so as produce not only the feeling of space in the individual, but also the mere appearance on the retina. In other words, the crystalline lens, the cornea, and the aqueous humors all cooperate, to all appearances, to produce, *somewhere else in space*, namely, on the retina, a spatial pattern which should be the same phenomenally as another thing *somewhere else in space* appears to the owner of the retina. And all these organic parts do this as a matter of metaphysical fact in a spaceless world; as agents existing somehow prior to the *a priori* synthesis, they are not spatial nor in a space. They cooperate, they adjust themselves to each other and to the external world, they yield to the supposed necessities of optics, not because they are really outside of one another, not because the organism as a whole needs to behave agreeably with its environment and to control and modify spatial things; but they cooperate either for the purpose of producing their own mutual externality and the external environment or else without this purpose but with the same result.

There is, I feel, a certain unclarity in this statement, due to the fact that we are dealing with one and the same sense-organ (and that one the space specialist); one might say that just such odd coincidences should be expected in a structure which, seeing all things only under the guise of space, happens to have the knack of looking back upon itself. There would be paradoxes, of course. And a small concession in favor of dualistic representationism would wipe them all out. For example, a defender of the "local sign"

theory might grant, as a biologist, that there is some cosmic peculiarity to which the space we experience corresponds more or less asymmetrically; and yet, at the same time, he would deny both the moderate and the radical beliefs of natural realism, viz., that the perceived spaces somehow copy the objective or that they actually *are* the objective in a peculiar setting. The absurd descriptions of the retina just given must then be stricken out; the eye spreads out in reality, only its outspreading is there not the kind of externality that we sense with the eye itself. Vision is a translation of that objective outspreading into a unique, incomparably different kind, the kind we knew as psychic. And yet this mental projection can steer its owner about in the world passably, if he but learns how to use it. It is an admirable instrument for navigators, but is no more cosmic space than a sextant is the pole star. This compromise is worthy of a Talleyrand: it enables the Kantian to keep his *a priori* syntheses and his Ego; it leaves to the naïve man his real objective world and his live, efficacious contact with it; and it builds a wide platform for several schools of humanism and pragmatism. It is more than a master-stroke of diplomacy, too; many are the philosophical questions which it settles without a hitch. But there is at least one great fact into whose face it can not look, and that is the imitative reflex, which nothing short of radical natural realism of the naïve type can make intelligible.

Smile at a young child, and the child smiles back. Frown, and the child frowns. When the child is somewhat older, you may make it respond with approximately the same tone or noise to the sound you utter in its presence. In a normal child, the accuracy of this response increases rapidly after the seventh or eighth month of life, so that in the tenth month, according to Preyer and later investigators, all kinds of imitation are easily performed. I need not drag you through the enormous latter-day literature on sociology, collective psychology, anthropology, and—above all—linguistics in order to echo the now familiar proofs of the leading part such imitation plays in the upbuilding of social institutions, types of belief, language, art, and so on. The general facts, which tempt some thinkers to view all mental life above the sense level as a mere blossoming of that one same primitive imitative reflex, may here be accepted as quite as clear and as certain as any empirical data can be. Most of us can verify them directly in our own lives *ad libitum*. And many of us, I fear, have often made the painful discovery that our most brilliant and original ideas, punning or philosophizing, are but deferred reflexes, giving back to a later hour other people's thoughts which we have loved long since and lost awhile. Now, it is precisely

the biologist—or his blood-brother, the genetic psychologist—who insists most earnestly that a theory of knowledge which is to be worth the fashioning must, if it does not grow out of just such empirical facts as this, at least reckon with all of them, giving each a place in its resulting system. Let us first try to decide what is the very least that must be done with the imitative reflex.

Accidental the correspondence between retinal image and perceived form may be; but the very suggestion that mere chance has brought about the correspondence between a perceived form, motion, or sound and the form, motion, or sound produced reflexly by the percipient as a result of his perceiving the former—that suggestion, I say, simply proposes the total abolition of science and scientists. For we have to do with a mechanism of the most astounding complexity, which appears in multiple forms in a single organism, and which exhibits the correspondence, not inside the process of producing a single sense quality (as in the case of the retinal image), but *between the end terms of a process involving several, often many, different organs*. I shall consider each of these aspects of the situation in a moment; just now let me emphasize the three-fold improbability of mere chance. Chance would not be a wild explanation, if we found only an occasional individual copying a feature of his environment; but millions of men and lower animals do it regularly. Chance would not be absurd, again, if in all these millions there were only a few occasional imitative reflexes recurring with neither observable rhyme nor reason, now in one sort of situation and now again in another; but such acts happen in almost every hour of normal life among anthropoids and men, from the drum concerts of the chimpanzees up to the sentimental young novel reader who weeps with her heroines and gnashes her teeth in baffled rage with the imagined villains of the printed page. And, finally, chance would not outrage us as a hypothesis, if there were but one very simple mechanism, operating with some very limited group of peripheral stimuli, which produces the reflex in some one part of the body; but the entire muscular system of every well-ordered human being is subjugated to a mechanism that on the other side connects with the retina in such a manner that some appropriate limb or set of other muscles reproduces, after its own way, in postures or in movements, the form or the path of seen things and acts. Less comprehensively but with equal or even rarer delicacy, the basilar membrane and the laryngeal muscles are likewise joined up in a copying machine which tends to give back to the outer world a faithful echo of the sounds which that world has given it. At once general, constant, manifold, and inconceivably intricate, can this function be

rationally set down as a mere chance producer of imitations of its own stimuli? Not unless its critic were to surrender every accepted scientific method. That interpretation becomes still more hopeless when we consider that reflex imitation, by and large, grows more refined and more general as the organic type improves (*i. e.*, becomes more sensitive and more adaptive). Any theory of knowledge, then, which a biologist who does not desert his own science will accept must look upon the reflex as designed (not necessarily in any finalistic manner, to be sure) to reproduce in organic matter certain geometrical features of physical things which affect the organism through certain media.

But before considering what such a theory of knowledge may be, I find it unavoidable to describe what the reflex does; for, though psychologists by the legion have analyzed, charted, genealogized, and otherwise dissected it, none has, to my knowledge, pointed out just those features and steps which are most relevant to our present purpose. Professor Baldwin has dwelt at some length upon the muscular reaction which either reproduces or retains its own stimulating conditions; but the details, no less than their meaning, he has not elaborated at all so as to disentangle a theory of knowledge from them. Lipps, I believe, is the only philosopher who has so much as skirted this particular territory (if this is not true, I should greatly appreciate correction); but his interest has been chiefly an esthetician's, so that the peculiarities which he has briefly noted in his various writings on *Einfühlung* have never been brought to bear upon his or anybody else's theory of knowledge. By all odds the most significant peculiarity, however, has not been even mentioned by him or anybody else; I refer to the fact that *the imitative reflex set up by perception of visual space forms and movements is an imitation which the imitator himself either can not normally perceive at all or which he perceives only indirectly*. Recall our illustration. If you smile at a child, the child smiles back. What has happened? A certain arrangement of light waves, striking the retina, sets up a neural current (or whatever you choose to call the organic disturbance) which, after various wanderings and vicissitudes, pulls the child's facial muscles in such a manner that, to an observer, the arrangement of facial lines appears very much like that of the lines in the object which the child is perceiving. But the child himself does not see his own facial muscles. He does not know that they take on this imitative pattern until he has patronized the family mirrors and duly compared the architecture of his grimaces with that of the things he reacts to. We may marvel, with Lipps, at the inconceivable, baffling complexity of such a reflex; but such wonder is quite beside the point and a weak thing when we

weigh the epistemological implications of the happening. Put these in the language of ordinary scientific realism, and they are, I think, decidedly more startling than all the antinomies of Kant (which, it may be well to remark in passing, are antinomies only if their reader accepts in advance the very idealistic epistemology which their existence is supposed to force upon him). What have we, if not a physical complex reproducing itself in another physical complex through the same medium and mechanism which somehow produce experiences of the first complex? What, again, if not that this reproduction, or self-copying, is originally not given in direct empirical form to the medium of reproduction, but can only be discerned by a second party? Consider what problems this situation brings.

In terms of cause and effect—if I may assume the propriety of the category, as every natural realist must—the process just described is a genuine reflection, or perhaps more exactly a deflection, of one material order into another through an intricate series of causal steps in a nervous system; the character so deflected being only the pure geometrical form of the peripheral cause. What, now, are the causal steps to this consummation? A fair answer, it seems to me, puts the whole psychophysical issue on a new level and in a better light. Ignorant as we all are of the private adventures of a nerve current on its course from retina through cortex down to muscle, we must say that somewhere and somehow the geometrical pattern of the retinal stimulus is thrown back and down a motor tract in such a manner that certain muscle fibers stretch and relax so as to group themselves in the pattern of the first stimulus, enormously magnified and, of course, considerably blurred through the appallingly complex “refractive index” of the heterogeneous medium. The biologist and everybody else who seeks to explain organic phenomena first of all naturally, which is to say in terms of the categories under which they appear, ought long ago to have sensed the irrelevance of the stock mind-body puzzle, when viewing the imitative reflex. However pertinent to biology, psychology, or metaphysics the question whether ether vibrations cause sensations or are merely parallel to psychic epiphenomena, it is hardly worth discussion until the facts of organic *conduct* have been broadly surveyed and conscientiously interpreted in terms of the purposes that conduct serves, either actually or in aspiration.² And when, beginning at the first basic type of behavior which most sharply distinguishes the more perfectly from the less perfectly adapted and efficient or-

²The pragmatism which identifies itself with this scientific method and with nothing save what that method implies must stand, it seems to me, forever unassailable against all critics.

ganism, namely, this same imitative reflex, the biologist turns psychophysicist, he ought easily see that the relation of physical stimulus to "mental state" is, for all theory, secondary to the relation between the undeniably physical end-terms of the simple sensory-motor imitation. For we can not, without fleeing the whole evolutionary point of view, doubt (much less deny) that the motor reaction here, as everywhere else, indicates or contains more fully than does the sensation the purpose, suitability, or other significance of the single process of which both are but phases. For it is the final set of the body that constitutes its adjustment to the environment, whereas the sensation is either a mere intermediate step toward that adjustment or else a device for retaining and recalling one or both of the end terms of the process (*i. e.*, for entering the stimulus, so to speak, as a constant determinant or a suitably recurrent determinant of later reactions, and for releasing it in such).

Admit this, and at once the physical or unique nature of the sensation becomes a matter of immediate indifference. For of one supreme fact the biologist is sure, to wit, that the result, the outcome of the whole intricate process is a physical reproduction of a physical feature of a physical stimulus. Either alternative of the usual psychophysical dilemma, then, is equally agreeable to a biologist seeking a theory of knowledge: if, on the one hand, muscular imitation is caused by the sensation complex, then the latter is precisely what the naïve man believes it to be, namely, a peculiar preservation of a peripheral energy pattern; and if, on the other hand, the sensation is epiphenomenon, the muscular imitation being caused directly by the stimulus and without the contributory influence of consciousness, then the sensation is still a copy of the stimulus, but in a different order of existence; *for the percipient can make another stimulus which brings about the same sensation complex, under the same conditions of observation, and he makes it by the mere act of thinking of the original sensation complex and letting his muscles react imitatively.* In other words, you or I can readily put on the mien, air, or gait of somebody whom we saw last week; that is, by the sole aid of the experience, we can manufacture out of our own bodies a physical form or movement which, affecting your or my retina (say *viâ* a mirror), brings to pass an experience like the original. I, for one, can not imagine how such an experience, be it epiphenomenon or potential energy or what not, can turn its own mysterious force, its moulding power, back into the world of nerve and muscle fibers and in any manner arrange these spatially so that, as a total retinal stimulus, they bring about a copy of the investigating experience, unless this latter *somehow* matches its physical peripheral determinants. This conclusion would not force itself

upon me so tyrannically if the stimulus were reproduced directly in the retina itself; for then it might well be that what seemed to be a second stimulus was really but a revival of the first in the retina. But the matter out of which the duplicating stimulus is actually fashioned is not simple ether vibrations; what the memory directly manufactures is a *cause* of such vibrations, a form which will reflect light so arranged as to produce a geometrical pattern on the retina like that which gave rise to the original instigating experience. Here the imitator passes by a most circuitous route from an experience—call it an idea, if you will heighten the difficulty for the Kantians—into the physical order which is moulded *unconsciously*. And the resulting organic form is not a duplicate of the light waves; it is a physiological arrangement, a bundle of variously differentiated bioplasms, which *reflects* light waves so that the latter, stimulating the retina, duplicate the original percept. To repeat, then: either the whole reflex is but a further developing and a specialized reflecting of the physical stimulus, all done in physical terms, in which case the perceived form is only a peculiar reproduction of the stimulus; or else the perceived form is epiphenomenal, but nevertheless is somehow so much like the physical occasion of its existence that it can descend, like some Olympian god, to the crass world of atoms and molecules to shape these, as the potter his clay, into an image of its own material progenitor. The statue of Diana falls from heaven; but no matter how long its descent nor how coarse the marble, its form is the form of the huntress, though she is neither stone nor an Ephesian. Choose betwixt these alternatives as one will, I do not see any escape from what is virtually the “copy theory” of knowledge entertained by the naïve realist.

Before passing to the acute stage of the biologist's dilemma, let me note that the latter is not relieved in the slightest degree by any genetic or voluntaristic account of the origin of the imitative reflex. And here the biologist himself should be the first to detect the futility of that pseudo-pragmatic method which would explain away all difficulties simply by showing whence they come. For suppose he try to interpret the reflex as a by-product, say, of the associative process. He might then be able to show how, by natural selection, or by specific resistances of nerve tracts, or by some other device, the particular muscles come to respond imitatively to the correct visual pattern. But what of it? At some moment, in some of the reacting muscles and nerves, the imitative reflex first develops; and there you are! Be the conditions of its working what they may, the crucial point is that it *works*! The stimulus is reflected. And the same occurs, if the biologist talks of an *élan vital*, or an unconscious will, or a psychoid, or any other primordial cosmic drive. What-

ever the thing is which strives to copy, and whatever the implements it forges to its end, when all is done, you have on your hands a cosmic mirror. And it is just this mirror and it alone with which any scientific theory of knowledge must be concerned. Theories of being and of becoming may have their turn, but later and in their proper place.

And now, let the biologist face his dilemma squarely. He, like many eminent leaders of other natural sciences, has recently leaned sharply toward Kantianism. The genetic psychologist has encouraged his inclination, and the majority of contemporary philosophers welcomed him as one of the few elect who have stripped the scales of common sense from their eyes. As a rule, he has taken up idealism, if not half-headedly then surely with little zeal for reading its tangible consequences to biological theory. For, had he even glanced at the imitative reflex as a biological fact to be fitted into an idealistically grounded hypothesis of evolution, he would have discovered—I should suppose—at the very first that, having accepted that reflex as a fact and not as an illusion, he must either cast off idealism and hold to biology or else reject all biological explanations now current and cling to Kant as the one and only god of genuinely philosophical science. And the reason for this hard choice is briefly this: all the problems of life which biology is trying to solve either are or involve problems of getting along with space and with time; idealism, denying the objective and independent reality of space and time, though, can not consistently look upon these problems as the incentives or causes of the evolution of mind or generally of conscious organisms in which cellular structure grows to suit the feelings of the creature, *because the very situation which makes the problems is itself a product of mind living in a spaceless world*. A word or two to make this clear.

If evolution is in some sense genuine, there are three possible ways of regarding the problems of space and time which are somehow apparently connected with the direction of organic adaptation: (1) They are just what we take them to be; (2) they are curious by-products of some noumenal situation, presumably a noumenal conflict, but in no wise representing the nature of it; or (3) they are a phenomenal projection, a representation, in a different order of existence, of their inciting noumenal situation. The first view no idealistic biologist can tolerate, of course; while the third, being representative realism, is scarcely more endurable. The second alone is hospitable; it is, I fancy, the opinion which Kant himself would have accepted, not if the question had been put to him point-blank in his scientific days, but probably if he could have returned to cos-

mology after his Critiques. By it, we may conceive in the crude, misrepresentative imagery of phenomenal experience, that there is a Bergsonian vital force trying to be happy in a stubborn environment where there is neither up nor down, nor right nor left, nor north nor south. It struggles, but does not move; it works out its own salvation, but there is neither bird in the hand nor bird in the bush for it, inasmuch as its ideal is neither here nor elsewhere. But, struggling after its own transcendental fashion, it collides, not at all geometrically of course, with its environment, which, one must understand, is neither outside of its noumenal skin nor inside it; and from the hard encounter flare up all the starry reaches, much as bright sparks flash up when steel meets flint. How read the imitative reflex, then? Remember, first of all, that appearances do not produce appearances, but are all themselves outgrowths of *a priori* syntheses. Causation is not given to us from without, so the Kantian sometimes puts it; which is only a special phrasing of what we have just said. Therefore, in none of the sensations of an imitative reflex can anybody find even a trace of the cause of the procedure. Consider, now, a small boy mocking the solemn countenance of his grandfather. The spatial form the mocker perceives in no wise represents the peculiarities of the real cause of either the perception or the motor discharge which copies that form. But this is not the strangest phase of the puzzle. Most of all must we marvel at the fact that the noumenal factors making the first appearance (*i. e.*, the face the boy sees) work upon *other* noumena so as to force these to produce *another* appearance (*i. e.*, the boy's grimace), but all to no purpose to the noumena themselves, inasmuch as these appearances do not make the noumena's environment more comfortable. The biologist must look at the situation as analogous to one in which a man, while trying to catch a street car, grows very red in the face. The color is produced by his adaptation to a specific environment; but he is not adapting to redness, he is trying to get himself into the most useful space at the most useful time, and the flush in his cheeks is only an unserviceable and not at all pictorial by-product of his striving. Logically, then, though in no other sense, the noumenal parallel in the case of the imitative reflex would be somewhat as follows: it would be as if a noumenal man, running for a noumenal car, and growing noumenally red thereby, were to compel certain of his fellow-citizens also to grow red in their respective faces, whether they wanted to catch a car or not. And, yet, though the flush served none of these parties but was a mere sign of the heat of somebody's efforts reflected in the body politic, nevertheless the colors were enabled to get along with one another and in the world of useless

noumenal by-products much more agreeably as a result. Was ever such a preestablished harmony dreamed of by any Leibnitz?

Need we be surprised that consistent idealistic biologists like Driesch have, more by instinctive fore-fear than by reason, said farewell to current biological methods and explanatory categories? Adaptation, natural selection, and all the other concepts of Darwinism and post-Darwinism lose meaning in the face of such a situation.

But now for the strange logic of your idealistic biologist. Complain as Driesch will about the futility of every biological theory which explains organic structures and organic behavior in terms of space, he is still quite willing to accept the threading of chromatin in the nucleus of a cell, its symmetrical division between the centrosomes and the final complete cleavage of the whole structure as evidence that an entelechy is busy, trying to "get somewhere"! And every morsel of fact to which he appeals for proof of vitalism in his study: "Die Lokalisation morphogenetischer Vorgänge," and in his two volumes on "The Science and Philosophy of the Organism" tells us likewise about changes of form, changes of diet, changes of position, changes of direction of motion—in brief, about the moving of extended things by a vital force which manifests itself and its plans in these very displacements. Here, then, we are confronted with a curious spectacle, that of a scientist rejecting the realist's view of space out of respect for a hoary metaphysic, and in the next breath accepting space as the scene in which the entelechy not only finds its problems but works out its own salvation! Far be it from any fair critic to hold the Heidelberg biologist up to ridicule on this score; the only difference between him and all other scientists who turn tender glances toward the "Critique of Pure Reason" is that he has thought out his position to the bitter end and has not scrupled to lay bare its final results in all their weakness. The dilemma of biology is written clearly across Driesch's pages, and no idealistic Belshazzar need summon a Daniel to read its message. It comes to this, and to nothing more: If you want an entelechy or an *élan vital* or any law or force that explains the course of organic life, you must accept the products of this life, its structures and its instruments, as somehow expressing its problems, as well as their solutions. If they do not exhibit the difficulties of existence and the goal sought, then no human being has any right to suppose that there are any real issues to be met by any body or any thing. A child's cry for milk discloses not so much as a blind will, if the position of the milk with relation to the child's stomach is not real and vitally important quite apart from the child's space-experience. If space is only a synthetic judgment *a priori*, if consciousness of space is only epiphe-

nomenal, then whoever takes pains to feed the child—or to feed himself, for that matter—is pottering at something a little less fruitful and dignified than a jig-saw puzzle.

Grant, though, that any and every biologist must read off his philosophy of the organism from the observed form and conduct of the organism itself, and grant, secondly, that any interpretation of life is at least a legitimate enterprise; then, as a matter of scientific method, you have dismissed forever all idealists from your councils. For you have agreed with the philosopher's clown, the dull man of common sense, that the vexations stirring all of us to action are the vexations we sense, perceive, reflect over and plan about, namely, situations in space and time; and that the changes we effect in our surroundings and in ourselves are really those which solve our problems. And, having gone this far, how in Heaven's name are you going to hold aloof from some variation of that much despised "copy theory" of knowledge? Even concede to the idealists all the noumena they yearn for,—noumenal egos and things in themselves; grant them too their ideals of God, freedom and immortality: still we can discern or conjecture these forces and aspirations only in so far as they are really at work in the world of space which we perceive; and, in this world, they have purport and are intelligible only to the extent that they are there confronted with real difficulties which are to be overcome only through real readjustments of position, form and movement. In other words, the Christian Scientist alone is entitled to say that the problems of the here and the there, the now and the tomorrow, are not real for the vital force, if such there be, which gives rise to consciousness. Everybody else, even the absolute idealist, must recognize that one must choose between no evolution at all and epistemological realism, at least so far as space is concerned.

WALTER B. PITKIN.

COLUMBIA UNIVERSITY.

DISCUSSION

IRRATIONALISM AND ABSOLUTE IDEALISM

PROFESSOR MONTAGUE, in his admirable criticism of Professor James's "irrationalism," writes as if that criticism were justifiable only from the point of view of the realist. A few verbal alterations, however, to statements all of which appear on page 149 of the article in the JOURNAL, will render that criticism just as valid for the absolute idealist. The *objective* idealist does not "admit

that there are as many objects as there are witnesses," and that therefore "if the world is objectively one system of facts" there can be "only one real self or witness—the absolute—of whom we finite selves are the mere appearances": he does insist, however, that there is only one perfectly complete and accurate "witness—the absolute," which as spiritual-world soul sums up and integrates the finite selves after a metaphysical manner, just as the Fechnerian physical-world soul is supposed to do after a psychological manner. The absolute, like the reading teacher, "sees the letters and words which the child [the finite self] sees, but he sees also the sentence which the child does not see." His world is not a different world from that of the finite self, but the same world seen both "collectively" and "distributively," and therefore completely instead of fragmentarily: for what is seen distributively only is thereby seen only fragmentarily, and *so far* falsely—just as every half-truth is *so far* error; but what is seen distributively *and* collectively is thereby seen in its wholeness. The distributive is not "mere appearance" and wholly false, and the collective the only reality, but it is the vision of things collectively that gives truth to what is lacking to the vision of them merely distributively. True, "the experience of a whole is not numerically identical with the experience of its parts," but it *is* identical with the experience of the parts *plus* their wholeness. True again, "the experience of a table as merely round and hard is not identical with the experience of it as old and valuable"; but the experience (as by the absolute, or any complete, all-round witness) of a table *qua* table (*i. e.*, in its wholeness) *is* identical with the experience of it as at once round, hard, old, valuable, and all the rest.

JARED S. MOORE.

WESTERN RESERVE UNIVERSITY.

SOCIETIES

SECTION OF ANTHROPOLOGY AND PSYCHOLOGY OF THE NEW YORK ACADEMY OF SCIENCES

THE Section met at the American Museum of Natural History on November 22, 1909, at 8:15 P.M., in conjunction with the New York Branch of the American Psychological Association. The following papers were presented:

Some New Data on Fatigue: PROFESSOR EDWARD L. THORNDIKE.

Sixteen subjects worked from 300 to 700 minutes with no rest or only a short rest for luncheon. The work was the mental multiplication of three-place by three-place numbers. Each subject was

tested again after a rest of twelve hours or more. The loss in efficiency was not great, being more than counterbalanced by the practise effect, and was not closely correlated with subjective estimates of fatigue.

A Preliminary Report of a Statistical Study of Association: Dr. A. J. ROSANOFF and Miss GRACE HELEN KENT.

With the object in view of deriving a normal standard of association to be used in a study of disturbance of flow of thought in insanity, the authors applied Sommer's association test, in a form modified by them, to one thousand normal persons. In their attempts to analyze and classify the results, they found it necessary to depart from the methods of grouping reactions which had been generally in vogue, but found that for their purposes the most useful distinction was that between *common* and *individual* reactions. With but few exceptions, records from normal persons contain not over ten per cent. of individual reactions. In cases of insanity, over fifty per cent. of individual reactions were frequently obtained. The distinction between a common and an individual reaction can be readily made by reference to the tables compiled by the authors on the basis of the thousand normal records already referred to. The authors believe that the diagnosis of incipient insanity in backward school pupils or in eccentric persons will be aided by the use of their tables, and that possibly the study of normal mental development may also be aided. The results of the work on association in normal persons are being prepared for publication.

An Attempt to Standardize Certain Tests of Controlled Association: Professor R. S. WOODWORTH.

This work was undertaken with the cooperation of Dr. F. Lyman Wells, under a committee of the American Psychological Association. The object has been to make a careful selection of the material available for tests of controlled association, where the measurement is to be in terms of time. Some of the tests selected, and others in process of selection, were presented.

The Meaning of the Association Test: Dr. FREDERICK LYMAN WELLS.

A study of the time relations in the word list of Dr. Rosanoff and Miss Kent. The reason why free association time is longer than controlled association time is not an intellectual but a volitional one. The task of deciding on a suitable response is much greater in free than in controlled associations and to this the longer times of the former are essentially due. This difficulty of decision may be described as the product of striving for a response that will seem sufficiently dignified, or for one that shall not betray something which it is desired to hide, or as a product of distraction induced by special

interest possessed by the stimulus word. Those individuals who decide on their responses promptly have short times and closely packed distributions; long times and variable distributions are seen in those who fumble with the experiment, and hesitate about which is the best response to give. In respect to this variability the fifteen women subjects fell into two species, eight being below and seven above the central tendency of the ten men subjects. The median times of the individual words in the list range from seven to twenty fifths of a second. Out of the 2,500 associations, 90 were ten seconds and over in length, the women giving proportionately three times as many of these as the men. The rôle of special "complexes" in these reactions was probably a very subordinate one. What is measured by the free association time in the conventional psychological test is, in effect, the ability of the individual to make prompt choices and decisions under the experimental conditions imposed. The sex differences here observed are probably secondary to the special conditions of the experiment.

R. S. WOODWORTH,
Secretary.

COLUMBIA UNIVERSITY.

REVIEWS AND ABSTRACTS OF LITERATURE

Knowledge, Life and Reality. GEORGE TRUMBULL LADD. New York: Dodd, Mead and Company. 1909. Pp. 549.

In this new volume, Professor Ladd has put "into semi-popular form the system of reflective thinking which has been evolved and published previously in separate volumes." The author refers the reader who desires a more detailed exposition and defense of his philosophic system, to these earlier monographs. In the present volume, however, frequent reference is made to his other books, and long quotations are taken from them.

Professor Ladd says, in the early pages of this last book: "If there is any kind of human undertaking for which one ought to prepare oneself by thinking soberly, long, and hard, it is writing or speaking on philosophy." Every one will admit that the author has himself most thoroughly complied with his own definition of the requirements of philosophic apprenticeship. But there is great danger that one may think too long, too hard, and too soberly and come to take himself and his profession so seriously that he is unable to express himself with the brevity and simplicity necessary to command the interest and attention of his readers in these busy times. The essential doctrines of the author are submerged in the stream of technical philosophic vocabulary, of which he is so eminent a master. The style of the author's previous volumes has invariably been criticized as heavy and involved. This is also one of the principal objections to be brought against his last book. The general reader who is

looking for a "semi-popular" discussion of the problems of philosophy may easily become discouraged before reaching the end of the first chapter.

The volume contains twenty-four chapters, as follows: Philosophy: Its Conception and its Problems; Philosophy: Its Method and its Divisions; Schools of Philosophy; Philosophy of Knowledge: The Psychological View; Kinds, Degrees, and Limits of Knowledge; Principles and Presuppositions of Knowledge; Scepticism, Agnosticism, and Criticism; Metaphysics, as a Theory of Reality; Nature and Significance of the So-called "Categories"; Philosophy of Nature; Philosophy of Mind; Matter and Mind: Nature and Spirit; Ethics, or Moral Philosophy: Its Sphere and Problems; The Moral Self; The Morally Good: Its Kinds (The Virtues) and its Unity; Schools of Ethics; Æsthetical Consciousness; The Arts: Their Classification and Nature; The Spirit of Beauty; Philosophy of Religion: Its Origin in Experience; The World-Ground as Absolute Person; God as Ethical Spirit; God and the World; Summary and Conclusion.

These chapters, as one might infer from their titles, are not mutually exclusive. There is much repetition, both of form and matter, in the volume, and the general reader who is led by the title and preface to expect a summary popular discussion of the fundamental problems of philosophy will be disappointed. The author has not seriously changed his view of life, knowledge, or reality, in the present volume. Pragmatism has come into the philosophic arena, since Professor Ladd printed his last volume, but he gives merely a passing notice to the new philosophy. He says: "The very foundations of so-called pragmatism, with its foolish fury toward the systems called by their older and more respectable names, are themselves laid in rationalism and idealism. The truths have all of them long ago been duly incorporated, as fragments, into both these so-called schools" (p. 37). And again: "To men who do not care to think, pragmatism may appear the least expensive, through-express route to the terminal station, whose station-master is the realized hope of the ages" (p. 55).

Although the author allies himself unequivocally with the anti-pragmatists, yet many other passages might be cited in which he announces doctrines that resemble very closely the more conspicuous teachings of pragmatism. *E. g.*, "Philosophy, like science, is an affair of development, the conclusion of which can not be foreseen in time; and the final form of which can not be predicted with precision. Hence the need which modern philosophy has of the particular sciences in their modern form is urgent and indispensable" (p. 12). "It would seem plain, then, that modern science and modern philosophy are reciprocally dependent, and in constant need, each of the other. Philosophy needs the spirit that applies the scientific method to all the ascertained truths and veritable conceptions, which the particular sciences can impart" (p. 19).

C. H. RIEBER.

Proclus's Metaphysical Elements. Translated from the Original Greek by THOMAS M. JOHNSON. Published by the author: Osceola, Mo. 1910. Pp. xvi + 201.

Under this title Mr. Johnson—the Thomas Taylor of our time and country—has added to the useful “*Bibliotheca Platonica*” which he has been publishing at intervals for a number of years, a translation of the “*Institutio Theologica*” of Proclus. By reason of its combination of completeness and systematic arrangement with comparative brevity, this treatise was, perhaps, historically the most influential and important of the expositions of the Neo-Platonic metaphysics, and especially of the system of emanationism. It contains in compact form and in a technically careful formulation the more fundamental ideas underlying such important medieval writings as Dionysius Areopagita, the “*De divisione naturæ*” of Erigena, and the “*Liber de causis*”; and it is no far cry from the “*Institutio Theologica*” to Bruno’s “*Della causa, principio ed uno*” and the first part of Spinoza’s “*Ethics*.” Indeed, in the work of an eminent writer, which lies before me, bearing the date 1909, I find a struggle with the same problem, and somewhat the same result—a scheme of ontology at once monistic and emanationistic. But one is not sure that they did not do this sort of thing with the greater subtlety and ingenuity in the fifth century.

The treatise was translated by Taylor in 1792, and Mr. Johnson’s version is based upon the earlier one, but somewhat modernized and corrected. Many of Taylor’s notes are reproduced; the biography of Proclus which is prefixed is a paraphrase of the original “*Life*” by Marinus. Most contemporary scholars will be a little shocked by the complete absence of breathings and accents from the Greek citations; and some of Mr. Johnson’s critical and historical views about Greek philosophy will seem to many to be of a somewhat too orthodox Neo-Platonic character. The student of the history of philosophical ideas in America will be interested in the fragment of autobiography in which Mr. Johnson tells of the sources of his enthusiasm for the Platonistic philosophy (pp. xiii-xvi). All save the comparatively recent manifestations of idealism in America—and, in particular, certain elements in what was called “*Transcendentalism*” and in the St. Louis philosophical movement—probably were due almost as much to direct or indirect influences from Neo-Platonism and the English Platonists as to Kant and his German successors. The extremely important rôle of Alcott in relation to both movements is the best evidence of this fact; and Mr. Johnson’s account of his own intellectual history is a case in point. He learned idealism and epistemological rationalism first from purely Platonic sources; though he afterwards found much the same conceptions—with various additions and rephrasings—in the doctrines of the St. Louis Hegelians. To the late William T. Harris the present volume is dedicated.

ARTHUR O. LOVEJOY.

JOURNALS AND NEW BOOKS

ZEITSCHRIFT FÜR PSYCHOLOGIE. December, 1909. *Akustische Untersuchungen* (pp. 241-289): WOLFGANG KÖHLER. - Contraction of the tensor tympani occurs reflexly as function of the total energy of the impinging sound wave, and is independent of pitch differences. Amplitude is thus diminished and intensity correspondingly magnified. Helmholtz's theory of timber as dependent on intensity relation of partial tones confirmed for trumpet, bugle and trombone. A psychological theory of *Klangfarbe* and vocal character in terms of *Intervalfarbe* suggested, *Statistische Untersuchungen zur Sprachpsychologie* (pp. 290-311): PAUL KULLMAN. - A study of prose rhythm in Goethe, Schiller and Heine. The greater the average (m) number of syllables between accents (Z) the smaller the number of monosyllables and the greater the average syllable value of the vocabulary. The relation between m and Z follows mathematical, not linguistic nor stylistic, laws. Vocabulary of emotional text tends to be more monosyllabic than that of prose compositions neutrally toned. *Ueber die Bedeutung der Scheinbaren Grösse und Gestalt für die Gesichtsraumwahrnehmung* (pp. 311-361): WALTHER POPPELREUTER. - Discussion of the various criteria of visual space perception, their relative importance, and methods of investigation. *Book Reviews*: Simbriger, *Zur Regulierungsfunktion im Zentralnervensystem*: LAQUEUR. Spielmeyer, *Veränderungen des Nervensystems nach Stovainanästhesie*: LAQUEUR. Mingazzini, *Über Symptome infolge von Verletzungen des Okzipitallappens durch Seschosse*: LAQUEUR. V. Kries, *Abhandlungen zur Physiologie der Gesichtsempfindungen aus dem physiologischen Institut zu Freiburg i Br*: NAGEL. Straub, *Über die Ätiologie der Brechungsanomalien des Auges und dem Ursprung der Emmetropie*: KÖLLNER. Bartels, *Ein einfaches Phorometer zur Messung latenter abweichungen beim Nabesehen*: FRANZ. Raehlmann, *Der simultane Kontrast im Farbenschein*: FRANZ. Rabinowitsch, *Über den gang der Schwellenempfindlichkeit bei Dunkeladaptation und seine Abhängigkeit von des Vorausgegangenen Belichtung*: FRANZ. Zoth, *Über ein einfaches Fallphonometer und die Bestimmung der Hörscharfe mit demselben*: LAQUEUR. Beyer, *Übersicht über die Fortschritte auf dem Gebiete der vergleichenden Anatomie des Mittelohrs*: LAQUEUR. Bezold, *Experimentelle Untersuchungen über den Schalkeitungsapparat des Menschlichen Ohres*: BEYER. Mackenzie, *Klinische Studien über die Funktionsprüfung des Labyrinthes mittels des galvanischen Stromes*: BEYER. Hensen, *Die Empfindungsarten des Schalles*: KRUEGER. Yerkes and Berry, *The Association Reaction Method of Mental Diagnosis*: KOFFKA. Lucka, *Die Phantasie*: LUIKE. Ziegler, *Das Gefühl*: GROETHUYSEN. Dugas, *L'antipathie dans ses rapports avec le caractère*: GROETHUYSEN. Woetzeltdt, *Die Kunst des Portraits*: COHN. Siebeck, *Grundfragen zur Psychologie und ästhetik der Tonkunst*: MÜLLER-FREIENFELS. Pikler, *Über Theodore Lipp's Versuch einer Theorie des Willens*: PRANDTL. Mauno, *Zur Verteidigung der Möglichkeit des Freien Willens*: LIPMANN. Hart, *A Philosophy of Psychiatry*: KRAMER.

Boschi u. Montemezzo, *Su la ecoprassia*: ALLERS. Jahrmärker, *Krankhafte Rausch- und Affektzustände*: SPIELMEYER. Meyer, *The Relation of the Auditory Center to Aphasia*: GOLDSTEIN. Prinz, *Die Vererbung pathologischer eigenschaften*: SPIELMEYER. Heymans, *Über einige psychischen Korrelationen*: BAADE. Groos, *Das Seelenleben des Kindes*: WRESCHNER. Sikorsky, *Die Seelische Entwicklung des Kindes nebst Kurzer Charakteristik der Psychologie des reiferen alters*: WRESCHNER. Wimmer, *Über Associationsuntersuchungen besonders schwachsinniger Kinder*: ALLERS. Ferriani, *Das Gefängnisleben der jugendlichen Verbrecher*: SPIELMEYER. Claparède, *Les Tropismes devant la psychologie*: FRANZ.

Keyserling, Hermann. Schopenhauer als Vorbilder. Leipzig: Fritz Echardt Verlag. 1910. Pp. 127.

Lavrand, H. Rééducation physique et psychique. Paris: Bloud et Cie. Pp. 121. 1 fr. 50 c.

Legrain. Les folies à éclipse. Paris: Bloud et Cie. 1909. Pp. 120. 1 fr. 75 c.

Marie, A. Les dégénérescences auditives. Paris: Bloud et Cie. 1909. Pp. 109. 1 fr. 50 c.

McConnell, Ray Madding. The Duty of Altruism. New York: The Macmillan Co. 1910. Pp. 255. \$1.50.

Mehlis, Georg. Die Geschichtsphilosophie Auguste Comtes kritisch dargestellt. Leipzig: Fritz Echardt Verlag. 1910. Pp. 127.

Meunier, Paul, et Masselon, René. Les Rêves et leur Interpretation. Paris: Bloud et Cie. 1910. Pp. 211. 3 fr.

Piéron, Henri. L'évolution de la Mémoire. Paris: Ernest Flammarion. 1910. Pp. 360. 3 fr. 50 c.

Thompson, Silvanus P. The Life of William Thomson, Baron Kelvin of Largs. 2 vols. Vol. I., pp. xx + 584. Vol. II., pp. xi + 585—1297. London: Macmillan Co. 30 s. net.

NOTES AND NEWS

A JOINT meeting of the Western Philosophical Association, the North Central Section of the American Psychological Association, and the Teachers of Psychology in Iowa, was held at the State University of Iowa on March 25 and 26 with the following program: Friday, March 25, meeting of the Teachers of Psychology in Iowa. Subject of discussion, "The Psychology which is Required for the State Teachers' Certificate upon Graduation for College in Iowa." North Central Section of the American Psychological Association—"Mental Association in Children and Young Women," John A. Hancock, State Normal School, Mankota, Minn.; "The Problem and Content of a Psychology of Education," Irving King, University of Iowa; "The Thought Method of Learning," Joseph S. Gaylord, State Normal School, Winona, Minn.; "The Psychology Instructor's Problem in Iowa," Ed. Forest Blayney, Buena Vista

College; "A Test on Attention Value of Magazine Pages," Daniel Starch, University of Wisconsin. Western Philosophical Association—"The Goodness and Beauty of Truth," H. B. Alexander, University of Nebraska; "The Nature of Truth," J. E. Boodin, University of Nebraska; "An Idealistic Philosophy as a Basis of Psychotherapy," Rowland Haynes, University of Minnesota; "Two Modern Social Philosophers," E. L. Talbert, State Normal School, Milwaukee, Wisconsin. Joint Session—Address of the President of the Western Philosophical Association, Professor Carl E. Seashore: "The Rôle of Play in Religion." Saturday, March 26, Joint Session—"Huxley's Epiphenomenalism, A Criticism and Appreciation," E. B. McGilvary, University of Wisconsin; "The Sense of Adjustment and Life of Appreciation," E. D. Starbuck, University of Iowa; "Virtues: Types and Sources," F. C. French, University of Nebraska. North Central Section of the American Psychological Association—"A Study in the Acquisition of Skill in the Writing Process," Linus W. Kline, State Normal School, Duluth, Minn.; "Some New Apparatus: (a) A New Memory Apparatus; (b) An Apparatus for the Investigation of the Light and Color Sense in Animals," F. Kuhlmann, University of Illinois; "The Correlation of Musical Education, Pitch Discrimination, and Ability in Singing," George Haines Mount, University of Iowa; "Discrimination Sensibility for Pitch within the Tonal Range," Henry G. Schaeffer, University of Iowa; "The Rôle of Pitch in Rhythm," Herbert Woodrow, University of Minnesota. Western Philosophical Association—"An Introduction to Philosophy through the Philosophy of History," J. W. Hudson, University of Missouri; "The Aims of an Introductory Course in Philosophy," Edgar L. Hinman, University of Nebraska; "The Naturalistic Approach to Philosophy," Bernard C. Ewer, Northwestern University.

THE Minnesota Psychological Conference was held on April 1, at the University of Minnesota, with the following program: Forenoon session—Symposium on Retardation: "Retarded Children in Minnesota Schools," Superintendent F. E. Lurton, Anoka; "The Literature of Retardation," Dr. H. H. Woodrow, University of Minnesota; "Retardation and Physical Defects," Dr. E. A. Meyerding, physical instructor, St. Paul Schools; "Backward and Feeble-minded Children from the Institution Standpoint," Dr. A. C. Rogers, superintendent Minnesota School for Feeble-minded, Faribault; open discussion led by Judge John Day Smith, Juvenile Court, Minneapolis, Superintendent J. L. Silvernail, Red Wing. Afternoon session—"Philosophical Implications in the Elementary Course in Psychology," Professor Luther A. Weigle, Carlton College; discussion led by Professor G. D. Walcott, Hamline University; "An Inquiry into Children's Interests in Written Composition," Supervisor J. H. Harris, Minneapolis; discussion led by Professor J. L. Stockton, Winona Normal School; "Suggestibility in School Children," Mr. A. S. Edwards, University of Minnesota; "The Psychology of the Thought Method," Miss Theda Gildermeister, Winona Normal School.

At the University of Minnesota the department of psychology has

organized a free clinic for the study of mental development. It is the aim of the department to apply psychological methods to the training of backward children. Dr. H. H. Woodrow will have immediate charge of the work. This semester he is conducting a special course in mental retardation. Dr. J. P. Sedgwick, clinical instructor in diseases of children in the college of medicine, will superintend the physical diagnosis of all children studied. In order not to interfere with medical interests and social organizations which are already in part serving similar purposes, the department reserves the right to decide what children it will work with. Mr. W. M. Duke, a specialist in the correction of stuttering and stammering, has offered to assist in the training to correct speech defects. It is the intention to make the correction of speech disturbances a matter of special investigation as it is a field in which training is recognized to be of prime importance.

DR. BORDEN PARKER BOWNE, professor of philosophy and dean of the graduate school of arts and sciences of Boston University, died suddenly at his home on April 1. Dr. Bowne has been a dean of Boston University since 1876. He was born at Leonardville, N. J., on January 14, 1847. He was graduated from the University of New York in 1871 and began a special study in philosophy. His book, "The Philosophy of Herbert Spencer," published in 1874, was such a success that Dr. Bowne decided to make philosophy his life work and spent several years abroad studying at the universities of Halle, Paris, and Göttingen. On his return he served some time on the staff of the New York *Independent* and was then appointed to the chair of philosophy at Boston University.

VIVIAN A. C. HENMON, A.B. (Bethany), Ph.D. (Columbia), now professor in the University of Colorado and dean, has been elected associate professor of educational psychology in the University of Wisconsin.

R. M. OGDEN, A.B. (Cornell), Ph.D. (Würzburg), has been promoted to a professorship of philosophy and psychology in the University of Tennessee.

CHARLES HUGHES JOHNSTON, junior professor of education at the University of Michigan, has been elected dean of the School of Education at the University of Kansas. In addition to his duties as dean, Mr. Johnston will continue his work and offer his courses in educational psychology.

DR. J. A. BERGSTRÖM, professor of pedagogy at Stanford University, previously professor of pedagogy and director of the psychological laboratory at the University of Indiana, died on February 28, at the age of forty-two years.

THE honorary degree of Doctor of Letters was conferred upon Emile Boutroux, professor of Philosophy at the Sorbonne and director of the Fondation Thiers, on April 4 by Columbia University.

THE JOURNAL OF PHILOSOPHY

PSYCHOLOGY AND SCIENTIFIC METHODS

JAMES AND BERGSON: OR, WHO IS AGAINST INTELLECT?

IF there is one task more thankless and unprofitable than criticizing critics, it is reporting reporters. Yet even this seems warranted by its benefits in the case of Professor James and his recent accounts of M. Bergson. Professor James is the unchallenged veteran leader of American psychology and philosophy; M. Bergson the rising marshal of French thinkers. Each man's marching orders are taken in deadly earnest at home and abroad. So, if both speak as in agreement while differing profoundly, the unhappy rank and file, which is trained to take words at their mouth value, will be confused. That this danger is neither remote nor imaginary, can scarcely be doubted by any one who takes pains to compare James's anti-intellectualism with Bergson's, and James's report of Bergson with Bergson's report on himself. Behind one or two important common convictions, which are chiefly on questions of method, a mass of far-reaching, irreconcilable doctrines lies half-concealed. For the sake of clarity and with no approval or criticism of either philosopher's opinions, I should like to point out a few divergent tendencies and sharp oppositions which, I believe, must constitute a perpetual injunction against every attempt to identify or even to harness up the radical empiricism of Cambridge with Parisian intuitionism. "Abridgments like this of other men's opinions are very unsatisfactory. They always work injustice," says Professor James at the close of his sketch of Bergsonism in "A Pluralistic Universe."¹ This is twice true of the following remarks, which are largely an abridgment of an abridgment; but their injustice weighs lightly over against their fairness.

Professor James can find much in Bergson's pages echoing his own sentiments. Like him, Bergson opposes every static view of reality, stands out for genuine freedom and continuous creation in a flowing world. Both thinkers insist that man must look inward,

¹ Page 241.

dive into the stream of consciousness, for the richest truths. As destructive critics of static absolutism, both stand shoulder to shoulder. But at these broader tendencies of speculation and of method agreement stops. Bergson goes the way of the older cosmologists, James stays with the subjectivistically inclined psychologists. Bergson repudiates psychophysics and nearly all experiment and hypothesis going with it, while James often unconsciously, as in his "Principles of Psychology," embraces Fechner and all he stands for. Bergson peers through his "mental stream" and spies something underneath; but James forever lingers in the flood, saying: "*though one part of our experience may lean upon another part to make it what it is in any one of several aspects in which it may be considered, experience as a whole is self-containing and leans on nothing.*"² Bergson declares that the *élan vital* and its antagonistic counter-current are each in its pure form unknowable, inasmuch as all cognition is nothing but a kind of collision between these two streams and a mixing of them: James long ago assured us that his radical empiricism "must neither admit into its constructions any element *that is not directly experienced* nor exclude from them any element *that is directly experienced.*"³ Where Bergson thinks of life as transcending experience, James thinks only of experience as transcending conceptual thinking. Were I to attempt an all-around account of their systems, I should certainly turn everything in them about this fundamental difference in the point of view. Hence, for Bergson, the last inwardness of every experience is quite beyond the most searching intuition; it is, however, not in the least "absolutely dumb and evanescent, the *merely ideal* limit of our minds," as that reality "independent" of human thinking appears to James.⁴ It is twofold, a tremendous creative activity and an enormously stubborn, by no means "evanescent," matter. Such antitheses might be multiplied almost indefinitely, but let them pass; it is more profitable to limit ourselves to a contrast of our two philosophers' theories of the concept. For it is Bergson's critique of intellectualism, as founded on his interpretation of conceptual experience, that wins the space of a whole chapter for him in James's "A Pluralistic Universe." And yet it is precisely on this topic that Professor James makes me suspect that he has called upon an opponent to do a friend's service. If I read both writers correctly, Professor James has sympathetically chalked up against Bergson many a costly item which the Frenchman has never entered on his books—and never will. Before accepting this statement, you should peruse the citations in their

² This JOURNAL, II., p. 114.

³ *Ib.*, I., p. 534.

⁴ "Pragmatism," p. 248.

original context I shall make; the obligation is peculiarly strong because both men freely indulge in all the tropes known to the literary artist, and still more because, in many points, their theories differ no more than but just as much as an infinitesimal segment of a curve does from an infinitesimal segment of a straight line.

James thinks to find in Bergson's theory of concepts confirmation of his own view that "the completer our definitions of ether-waves, atoms, Gods, or souls become, the less instead of the more intelligible do they appear to us. . . . Ether and molecules may be like co-ordinates and averages, only so many crutches by the help of which we practically perform the operation of getting about among our sensible experiences."⁵ But this kind of pragmatic psychology seems to me absolutely incompatible with everything Bergson is driving at. Far from pronouncing "matter," "energy," and like concepts mere "extraordinarily successful hypotheses" whose sole claim to our preferences is their superior utility for human purposes, the French intuitionist firmly holds to the objective reality of matter. On the very first page of his introduction to "*L'Évolution Créatrice*" I read: . . . *notre intelligence, au sens étroit du mot, est destinée à assurer l'insertion parfaite de notre corps dans son milieu, à se représenter les rapports des choses extérieures entre elles, enfin à penser la matière.*

To think matter! Hardly a Cambridge performance, this! The external things are "out there," they are tough, thick, obstinate—quite loath to evanescence or to be the mere ideal limits of thought. And in a later chapter, "*De la Signification de la Vie*," Bergson says that science commits no sensible error in cutting up the universe into relatively independent systems, for "*la matière s'étend dans l'espace sans y être absolument étendue.*"⁶ What does this mean? That the physicist's interpretation of nature carries us further from the latter as he works out his concepts more fully? Not at all. Science is always approaching an adequate description of matter, but such a description is unattainable only as 2 is the unattainable sum of the series $1 + \frac{1}{2} + \frac{1}{4} + \frac{1}{8} + \dots$.

Ainsi, l'espace de notre géométrie et la spatialité des choses s'engendrent mutuellement par l'action et la réaction réciproques de deux termes *qui sont de même essence*, mais qui marchent en sens inverse l'un de l'autre. Ni l'espace n'est aussi étranger à notre nature que nous nous le figurons, ni la matière n'est aussi complètement étendue dans l'espace que notre intelligence *et nos sens* la représentent.⁷

In this difficult passage, which sorely needs its whole original set-

⁵ "A Pluralistic Universe," p. 342.

⁶ "*L'Évolution Créatrice*," p. 222.

⁷ *Ib.*, p. 221.

ting, one point stands out brilliantly: Bergson expressly repudiates the very construction which Professor James places upon his theory. Summarizing Bergson's treatment of Zeno's paradoxes and mathematical-geometrical concepts of time and space, Professor James reports the intuitionist as teaching that, "instead of being interpreters of reality, *concepts negate the inwardness of reality altogether.*"⁸ Note, please, the two words I have italicized. Not Zeno's concepts, not yours nor mine, but concepts *as such* are guilty. And they are not simply defective or incomplete; they are *altogether* mendacious in what concerns the interpenetrating densities of cosmic action. I defy anybody to grub so much as a grain of this ore out of Bergson's mine! Here is another fragment even less amenable to Professor James's reading:

L'entendement est chez lui dans le domaine de la matière inerte. Sur cette matière s'exerce essentiellement l'action humaine, et l'action, . . . ne saurait se mouvoir dans l'irréel. Ainsi, *pourvu que l'on ne considère de la physique que sa forme générale, et non pas le détail de sa réalisation, on peut dire qu'elle touche l'absolu.*⁹

Lo! The horrid absolute rears its head even in Bergson! And it is the dead, chopped-out concept, the "form" of physical knowledge, which actually fingers the monster. The concept is not invented at each man's own sweet will, by breaking up the flux with the same freedom; we do not "create the subjects of our true as well as of our false propositions," as James thinks.¹⁰

Atoms and ether and potential energy and all the other things of physical nature are all perfectly real objects or forces in a perfectly real space. They are, indeed, so exceedingly real, so chock full of existence, that, when we encounter them in the sudden shock that constitutes intelligence, we simply can not take them all in; all we gather about them in discrete thought is their surfaces at the points of our collision with them and their standstill at the instant of that collision. On this score Bergson speaks beyond all equivocation. The escape from Democritus, Aristotle, Hume, and Kant, so far as the question of spirit and matter is concerned, is found in the hypothesis

" . . . que ni la matière ne détermine la forme de l'intelligence, ni l'intelligence n'impose sa forme à la matière, ni la matière et l'intelligence n'ont réglées l'une sur l'autre par je ne sais quelle harmonie préétablie mais que *progressivement l'intelligence et la matière se sont adaptées l'une à l'autre pour s'arrêter enfin à une forme commune.* Cette adaptation se serait d'ailleurs effectuée tout naturellement, parce que c'est la même inversion du même mouve-

⁸ "A Pluralistic Universe," p. 246.

⁹ "Evolution Créatrice," p. 216.

¹⁰ "Pragmatism," p. 254 sq.

ment qui crée à la fois l'intellectualité de l'esprit et la matérialité des choses."¹¹

And, in the very next sentences, this profound thinker adds the implications of this hypothesis. These, I think, no student can read without perceiving instantly the world-wide difference between Bergson and James.

"De ce point de vue, la connaissance que nous donnent de la matière notre perception, d'un côté, et la science, de l'autre, nous apparaît *comme approximative, mais non pas comme relative*. . . . Il faudrait, pour qu'une théorie scientifique fut définitive, que l'esprit pût embrasser en bloc la totalité des choses et les situer exactement les unes par rapport aux autres; mais en réalité nous sommes obligés de poser les problèmes un à un, en termes qui sont par là même des termes provisoires, de sorte que la solution de chaque problème devra être indéfiniment corrigé par la solution qu'on donnera des problèmes suivants, et que la science, dans son ensemble, est relative à l'ordre contingent dans lequel les problèmes ont été posés tour à tour. C'est en ce sens et dans cette mesure qu'il faut tenir la science pour conventionnelle. *Mais la conventionalité est de fait pour ainsi dire, et non pas de droit*. En principe, la science positive porte sur la réalité même, pourvu qu'elle ne sorte pas de son domaine propre, qui est la matière inerte."

Perception and scientific theorizing rated in the same class, and that class a producer, not of relative but of approximate knowledge! Surely James must cry halt at this, and still more sharply at Bergson's hypothesis that the limitations of conceptual thinking are imposed not by human desires as much as by the trick things have of happening one after another and being likewise experienced.

How can Professor James report that Bergson says "concepts make things less, not more intelligible, when we use them seriously and radically?" How can he believe that Bergson thinks concepts "serve us practically more than theoretically"? That the Frenchman regards them as "throwing their map of abstract terms and relations around our present experience"? And that the author of "L'Évolution Créatrice" thinks that "conception, developing its subtler and more contradictory implications, comes to an end of its usefulness, . . . and runs itself into 'the ground,'" whereupon Bergson "*drops* conception"? (Professor James himself italicizes this last verb.)

The fact is, according to Bergson, that concepts alone make things intelligible; that they serve us in theory better than in practise ("action," he says, "breaks the circle of logic"); and that, far from being a map *thrown about* our present experience, they *are* our present experience itself, halted in its flight, and by the shock of stopping or "kicking back" condensing, as it were, into hard lumps—always into lumps of perfectly real, objective nature. These lumps or precipitations are not "cut out" of reality, at all, as Professor

¹¹ "Évolution Créatrice," p. 225.

James construes Bergson.¹² They are a phase of reality, they stay in their stream. They are neither copies nor distortions of matter in the picture-gallery of the vital force; they are intelligence itself and matter itself, each in a *special* relation to the other. What Bergson sees and James apparently does not is that things are none the less real when they are motionless and external to one another than when they shoot through one another and interpenetrate and move. James imagines that Bergson agrees with him in supposing a concept to be a convenient misrepresentation made for exclusively practical purposes. But, as I read Bergson, he clearly states that a concept is reality (a part or phase of reality) retarded and solidified, representing nothing whatever, distorting nothing whatever, but simply *being* that which we *live* it as being, a cosmic character distinct from others. In its particular setting the characteristic is distinct, but only there; where there is no collision between the vital energy and obstructing matter, where the former runs on smoothly (and perhaps also where matter is serenely alone and uninvaded by spirit?), there all other qualities of nature shoot through it and live in it, so that it is external to them in neither space nor time. Were more quoting called for, we might reprint pages iii and iv of "L'Evolution Créatrice," where Bergson—after describing all those who, like James, deem the best product of intellectual effort a symbol or pragmatic construct, as suffering from "un excès d'humilité"—argues that the pragmatic nature of human activity makes it most probable that conceptual thinking reaches the absolute or some feature of it. "Une intelligence tendue vers l'action qui s'accompliva et vers la réaction qui s'ensuivra, palpant son objet pour en recevoir à chaque instant l'impression mobile, est une intelligence qui touche quelque chose de l'absolu."

These random gleanings misrepresent each philosopher, of course, for each writes a flux even as he preaches one. But I think that whoever will work out in detail some of the contrasts indicated must sooner or later come to wonder how such an acute, sympathetic, and well-seasoned reader as Professor James ever fancied he saw an exponent of his anti-intellectualism in Bergson. How could he write that Bergson and Bradley together "have broken my confidence in concepts down"?¹³ Surely, if ever a man taught that concepts are to be trusted, *in so far as we know what we are doing with them, and in so far as we use them intelligently*, that man is Bergson. For James, the lead of intellect sends us over the divide between rationalism and empiricism down into the intellectualistic valley of dry bones and into the abyss of deception. For Bergson, the intel-

¹² "A Pluralistic Universe," p. 235.

¹³ This JOURNAL, VII., p. 33.

lect heads always for the living reality of things, but, finding each next advance more arduous than the last, stops always at an approximation of that last truth which one bold, keen intuition suggests but can never quite lay bare. Could two theories of the concept differ more in spirit?

WALTER B. PITKIN.

COLUMBIA UNIVERSITY.

ON CONTINUITY AND DISCRETENESS

IT would hardly be an exaggeration to say that the whole logical crux of metaphysics centers in the problem of continuity and discreteness. Whether one approach this problem with the emphasis on the relation of the one and the many, or on the relation of permanence and change, the same duality breaks out—either in the static antithesis of unity and manifoldness, or in the dynamic antithesis of the continuity which is permanence and the discreteness which is change.

Abstract monisms, from Parmenides to Spinoza, regard ultimate reality as a homogeneous and unchanging continuum, in which the whole is both logically and existentially prior to the parts. The most obvious empirical source of this view is the apparent homogeneity, unity, and permanence of pure space. Parmenides describes the One in spatial terms. Spinoza conceives the one substance as an infinite whole and it is no accident that he develops his system *more geometrico*. I do not, of course, mean to imply that Spinoza's substance is simply space emptied of all content, but only that the geometrical metaphor plays a large part in his conception thereof.

All forms of pluralism, on the other hand, have found a chief determining motive in the analytical dissolution of the perceptual continua of the space-time world, and, especially, of movement and change, into discrete elements, or "terms," and "relations." Continuity seems thereby to be reduced to a more and more relative and transitive position. In Leibniz, who formulated the law of continuity, there is the closest possible connection between his dynamic pluralism and his mathematical analysis, devised to obtain formulas for the calculation of continuous variables.

The progress of science seems to consist in the breaking up of the perceptual continua of immediate experience into discrete elements and events. Physics, chemistry, biology, and psychology pulverize the continua of space and motion, physical and vital processes, and consciousness, respectively. The analytic side of science brings out discreteness in experience, and, by a one-sided emphasis

on this analytic function of thought, one gets the conclusion that the result of the operations of intellect on experience is a world of pure discreteness, of discontinuities and lack of connection everywhere. If thought be powerless to grasp or find continuity, then the sole function of the logical intellect is to rend the living unity of experience in pieces, and to transform its movement into an inert and powerless set of terms and external relations. The world, as seen by the intellect, becomes a lifeless and motionless wreck of the actual living and evolving universe. We get, indeed, a "pluralistic universe," but a dead one. This procedure amounts to the assertion that, for the intellect, there is no identity-in-difference, that difference is eternally difference and identity eternally identity, and that in thought they never live and work together or *durcheinander*. Would we restore the world that hangs together, that lives and moves, would we restore the continuity which the intellect has banished from our actual world, then we must hark back to immediate intuition, to sense and feeling, fling ourselves into the stream of immediately experienced becoming and listen with ears attent to its intellectually inarticulate murmuring. Here is the only anodyne draught for the pains of a world torn asunder by the intellect. Here the discontinuities cease from troubling and the antitheses are at rest.

Such is the proposal of M. Henri Bergson, whose praises are sung by Professor James in his "Pluralistic Universe." Mr. James tells us again, in this JOURNAL, that the two horns of the philosophical dilemma are now Bradley or Bergson.¹ Both have shown in somewhat different ways the powerlessness of the intellect to apprehend reality. Both have been in at the death of post-Kantian rationalism; but they differ as to the way of philosophical salvation.

I can not admit that philosophy is shut up with this dilemma. It is not in the desperate *impasse*, where it must either divest itself of all its intellectual habiliments and plunge naked into Bergson's current of immediate feeling, or by a process of "transmutation" grow wings and soar into the mystical Absolute Experience of Bradley.

Bergson's conception of thought, which Mr. James seems to accept *in toto*, is that it is powerless to grasp the real flux and evolution of things, the real variety and novelty in change. Thought can make only a series of static cuts through the real flow of becoming. Its reflective renderings of the evolutionary process are like the geometrical point and line of the traditional text-books. These cuts have no breadth and no synthetic grasp of change. The illusion that science grasps the real is due to its presentation of a rapid succession of

¹ This JOURNAL, Vol. VII., pp. 29-33.

static pictures in its concepts or symbolical formulas. These concepts may seem to glide into one another like moving pictures, and thus to give a semblance of life, but it is only a semblance. This "cinematographic" character of thought renders it forever impotent to seize the elusive and slippery reality of pure becoming.

The metaphor is *frappant*. All the world knows about moving pictures, and Bergson's great literary genius beguiles the unwary reader. Intellect, Bergson holds with the pragmatists, has the purely practical function of helping us to act efficiently. And its work is retrospective, whereas life and all reality are prospective. Thought generalizes from the past. It conceptualizes the dead remains of actions and enables man to adjust himself to the future, because of a partial continuity of past and future. But thought operates only on the by-products of the life-force's alchemy. Thought assumes complete continuity between past and future, a continuity that does not exist. The *élan vital* is ever bringing forth the new.

There are, it seems to me, several fatal objections to the Bergsonian theory of the functions and limitations of intellect. If evolution or pure becoming be real, it is certainly not discovered by sense-feeling or intuition. Immediate experience does not, by itself, yield the notion of cosmical evolution, nor, indeed, of any of the forms of continuity which are true for science at least, whatever may be their place in the Bergsonian metaphysics. There is no immediately perceived continuity of the acorn with the oak, or of the jelly-fish with the mammalia. Even the continuity of anthropoid ape with man has never been very obvious to the casual observer unequipped with the categories of biological analysis and synthesis. Any theory of evolution, like any other great scientific generalization, such as the law of gravitation or of the conservation of force, is a principle of continuity operative within a certain field of experience, and fashioned by the activity of the intellect in its quest for continuities and identities that are not patent to sense-perception and immediate intuition. So far is it from being true that the outcome of intellectual activity is solely the breaking up of the primitive continuities of immediate experience into discrete elements, that in fact the actual work of intellect is synthetic as well as analytic and consists quite as much in linking the immediately discrete by threads of continuity unearthed by a reflective quest.

In practical life, too, thought functions to bridge over discontinuities. The hungry man, the money-seeker, the lover, exercise their intellects to devise means for overcoming the discontinuities between their desires and the situations which hinder the satisfaction thereof.

Bergson is captivated by his metaphors into a caricature of the nature and function of the intellect. He really limits its activities to the sort of work which consists in the analysis *ad indefinitum* of a continuous line, a motion, or a change, into infinitesimal elements. He envisages continuity as that of the spatial line or motion, and discreteness as the analysis of the line into an indefinite series of points, or of the motion into a series of static positions *à la* Zeno the Eleatic. And Mr. James appears to follow him in this respect. Accordingly, the function of intellect being limited to the never-ending chase for the infinitesimal, and the poor intellect being able, when out of wind, to rest only on a static term, the only escape from the Zenonian paradoxes seems to be to affirm that thought distorts reality, to cry *avaunt!* false intellect, and plunge in the stream of sensation and feeling. In spite of intellectual analysis, we see the continuous line and it is safe to bet that Achilles will overtake the tortoise.

I will not take up space here to discuss the Zenonian paradoxes. It is unnecessary to do so. The modern mathematical treatment of the continuum as a type of serial order turns the flank of these paradoxes. What Zeno's arguments really prove is that infinitesimals are not actualities. The successive positions of Achilles and the tortoise, or of the moving arrow, would be actual infinitesimals, if a finite motion or distance were really made up of an infinitude of static positions or of points without length. Any "here" and "now" of motion or change is not absolute rest. It is a term in a continuous series, defined by its relations to the terms before and after it in the same series. The analysis may be stopped just where it suits our purpose, but the serial continuity, the ordinal synthesis, is always involved.²

The position of Messrs. Bergson and James encounters a further difficulty in their account of thought's practical function. Thought breaks up the continuities of sense and feeling into discrete elements; but the function of thought is to enable one to adjust one's self to new situations, by formulating, from the retrospective interpretation of past experiences, plans of action for the future. The possibility of this successful prevision and adjustment implies a continuity of past and future that thought is able to apprehend. Furthermore, the actual process of evolution either has continuity of an intelligible sort, or one is not entitled to speak of it as an evolution or as one cosmical movement of pure becoming. One has no right, in terms of discourse with one's fellows, to argue that the new is

² I may refer, for further discussion on this point, to B. Russell, "The Principles of Mathematics," especially Chapters XXII., XXXVI., XLII. and L.

ever coming forth in this one process unless one is prepared to show intelligible order and continuity between new and old. The hackneyed principle that the changing implies the permanent, is in place here. In fact, Bergson does assume an ill-defined continuity or order and elaborates it by the resources of intellect.

I think that Messrs. Bergson's and James's caricatures of the functions and operations of thought are due to a one-sided dwelling upon the aforementioned puzzles of mathematical continuity and discreteness, and that this has blinded them to the actual function of thought in concrete experience and in the empirical sciences. Thus they have been led to set up a false opposition between sense-experience and reflective thinking. I will repeat here what, it seems to me, should now be taken as a truism, namely, that there is no bit of significant experience of which we are reflectively aware that is not shot through with thought. There is no such thing as an utterly relationless experience. The intellectual element may not be prominent, but it is always there. When reflective thinking begins to be in evidence it neither descends from a rationalist heaven nor is born by a miraculous parthenogenesis. At the other end of the scale, I should suppose that, while we all stand in constant danger of hypostatizing abstract concepts, we all recognize, in principle, that "concepts without percepts are empty," and, further, that concepts are nothing other than symbols of the actual continuities of experience.

I can not, then, admit the horn of Mr. James's dilemma which would drive philosophy to save itself by swallowing Bergson's prescription and committing intellectual suicide.

Nor is philosophy compelled, if it revolt from Bergson's proposal for its euthanasia, to choose Mr. Bradley's way. He has, indeed, performed a brilliant *tour-de-force* by isolating, successively, the main general features of experience, such as space, time, causality, the self, and then showing that each of these features, when taken thus by itself, fails to be self-sustaining and hopelessly falls apart into the indefinite regress of terms and relations. One can, indeed, if one will, take abstract space or time or causality, demand that it shall stand by itself apart from the organic totality of experience, and then with this abstraction go on thinking terms and relations as long as one pleases to continue the game. The process has no necessary end. One begins with the assumption that space, time, causality, change, etc., pretend in naïve thought and science to be absolute and self-existent, and one easily shows that, on this assumption, these aspects of experience fall into the indefinite regress of terms and relations. And if qualities and relations are mutually implicative, of course neither can stand without the other. But, if

there are no intelligible qualities without relations, and *vice versa*, why is not the real in experience simply the organic and functional complex of qualities and relations? If there are no really external terms subsisting without relations, and no relations that hang in the empty void between, but not connecting, terms, then while thought does not create experience *ex nihilo*, experience is intelligible. Mr. Bradley's conclusions that all the aspects of experience break up by an endless process of fission, seem to me to be successfully deduced because they were carefully put in with the initial assumption. Why begin with this process of isolation of aspects of experience from the concrete whole of experience? Why demand of thought the impossible, and, to my mind, arbitrary, achievement of either *being* the whole reality to which it refers or confessing itself powerless to grasp the real? I may be simply confessing that I am a hopeless Philistine in philosophy, when I say that I am unable to see either that thought is *ipso facto* bankrupt if it is not immediately one with everything that it knows, or that a world of elements in organic relations is a contradictory and unintelligible conception.

To Mr. James's dilemma of Bradley or Bergson I reply, neither Bradley nor Bergson! What then? I have space only to answer very briefly. The best way for philosophy seems to me to be an organic or functional and social conception of experience, and, by consequence, of reality, since the latter can mean no more than the ultimate unity and continuity of experience; this organic whole of experience thought grasps or significantly refers to reality, since thought is an integral function of the system of experience, functioning in and through certain constituent dynamic elements of reality, namely, selves. Thought is a function of the organic whole of reality, a function which inheres in and operates through conscious individuals. I see no need or sufficient ground for sundering the thinking self from its world; no ground for sundering immediate experience from conceptual reflection; and, finally, no ground for admitting that sense and feeling, when contrasted with systematic thinking, yield the true and final continuities of experience, whereas thought is tied up to discretions.

Perhaps, in conclusion, it may be well to summarize what appears to me to be the logic of the situation. A theory of thought which makes its function to consist in the separation of bare identity from blank difference is a caricature of thought's work. To reason or think is to connect things and to differentiate them in the same breath. To relate implies that there are actual differences or terms to be related. To really distinguish things is to find them together, as members of a common field of experience. Even the proposition "A is A" either means that the predicate is the subject with a dif-

ference or it is solemn nonsense. Philosophy does not get out of the supposed deadlock between the discrete and the continuous, the one and the many, either by throwing away one term of the antithesis, or by plunging headlong in the pre-reflective stream of crude sense-experience. There is no need to resort to this heroic remedy. The intellect is not tied up to that logical man of straw, either absolute identity and continuity or absolute difference and discreteness. The intellect itself demands both, and sensible experience already contains them both, though in a less fully articulated form. Sensible experience is never wholly innocent of thought. The logically formulated relations of continuity in discreteness are simply the warp and woof in the common texture of experience, when risen to reflective awareness of itself. In the sensibly continuous masses of primitive experience, such as the continuum of perceptual space, or of spatio-temporal movement, the continuity in question is only relatively undifferentiated. Even in the perception of a simple movement in space there is present the recognition of discreteness in starting-point, direction, and goal. It is the work of reflective thinking to develop to fuller awareness the continuity in discreteness of experience. As this work is done, the primitive continua are transformed, not into pure discretions, but into other types of continuity, such as the continuity of equivalent forces, of gravitational attraction, of natural selection, of purposive thinking, etc. The difference between immediate sensible experience and the same experience when worked over by thinking, is not that the continua of the former have given place to the rags and tatters of thought's analysis, but that the broken and episodic continuities of sense have been supplanted by more comprehensive and persisting principles of continuity. Thinking does show up in a brighter light the discreteness of individuality in things and persons, but it likewise shows that the discrete individualities, so defined, carry all the more intimately the continuities. Contrast the continuity of the natural order for the modern student of science with the chaotic world or the savage!

Thinking that is adequate to the actual content of experience is always a movement which unites in differentiating, and differentiates in uniting, things. It is a movement which develops to explicit awareness the actual continuities or relationships of discrete moments or terms. Reality is intelligible, for it is at once continuous and discrete. And the continuity of the real can not be the mechanical and external continuity of disjointed elements merely juxtaposed in space. The continuity of the real is dynamic or living identity unfolding itself in a system of differences, persistently differentiating itself through change or qualitative development. It is true that the qualitatively new is a feature of actual experience. On the other

hand, change or differentiation is unthinkable, even as sensational experience, without continuity.

As we move on, in thinking, from blind and dumb sensation to reflective experience, by a progressive differentiation, it becomes clearer that the continuity which involves discreteness must always be that of a unity of significant or teleological process. It is the synthetic movement of living experience and purposiveness which reveals the continuity that lives and works in and through discreteness. So far we can go with M. Bergson; but we do not admit that his method is the one by which we can best understand the meaning of the purposive process of reality.

Finally, there is no inscrutable mystery in the principle that adequate thinking of the real requires continuity in discreteness, if the developing world be a living and teleological system. For thinking is just the increasing awareness that such a world gains of itself.

J. A. LEIGHTON.

HOBART COLLEGE.

SOCIETIES

SECTION OF ANTHROPOLOGY AND PSYCHOLOGY OF THE NEW YORK ACADEMY OF SCIENCES

IN conjunction with the New York Branch of the American Psychological Association, a meeting was held on February 28, 1910, at 8:15 P.M., at the American Museum of Natural History. The following program was presented:

Psychological Measurements of the "Pulling Power" of an Advertisement: Dr. H. L. HOLLINGWORTH.

The speaker discussed the defects of modern methods of "keying" an advertisement, and advocated the substitution of psychological tests. The results of an experiment with seventy-five subway advertisements, by the order of merit method, were presented. In cooperation with the New York Advertising Men's League, the keyed results of various kinds of "copy" are being compared with psychological measurements of the same advertisements. The work in progress is directed toward four chief problems: (1) the validity of individual judgments of persuasiveness; (2) the relative strength of the various human instincts as the basis of appeal and conviction; (3) the relative strength of various "effective conceptions"; (4) the practical psychology of color in advertising.

Practise and Individual Differences: Dr. FREDERIC LYMAN WELLS.

In thirty days' practise with five subjects on the number checking

test (a form of the A test) and in the Kraepelinian addition test, the general indication seemed to be that the subjects who did well at the start had as much opportunity for further improvement as those who did poorly. This would indicate that in the functions tested the relative superiority of certain subjects was a manifestation, not of their being nearer the end of the practise curve, but of an inherent ability to profit more by such practise as they had had.

The Physiological Support of the Perceptive Processes: Professor JOSEPH JASTROW.

The purpose of this paper is to consider a more adequate formulation of the relation between the physiological factor and a complex sensory process in which it participates. A typical instance is found in the visual perception of distance. The conventional statement sets forth that in the presence of a situation requiring judgments of distance, we bring into play the physiological mechanism, testing by the clearness of the retinal image the necessary accommodation; and concomitantly throwing into gear the convergence apparatus, and thus tentatively, though quickly, finding the proper adjustments; and, lastly, that only when this process is accomplished is the product handed over to the mental elaboration which, utilizing this basis, makes of it a perception of such and such objects at such and such distances. The point of view urged in opposition to this is that while these factors are significant they are so in almost a reverse order of values. Complex sensory perceptions are so much more psychological that the habit of mind is to jump to an interpretation on the very slightest data, and then use the physiological adjustments merely to corroborate the psychological anticipation. The proof for this view is found in the unwillingness of the eyes, and indeed their inability, when deprived of a psychological clue and thrown wholly upon physiological support, to obtain any satisfactory judgments at all. In judging the distance of spots of light in a dark room, the greatest diversity appears; and there appears also, just as soon as the least glimmer of light gives any clue to the real situation, the tendency to guess the result and then merely use the physiological processes to check it. Two corollaries from this principle may be said to support it. The one indicates the importance of extreme care in avoiding suggestion; and the other explains why in complex sensory judgments we are so prone to illusion. As a working hypothesis for complex judgments this restatement of the physiological support is not only in itself suggestive, but unites a variety of experimental data in a consistent interpretation.

The Emancipation of Intelligence in the Study of Philosophy: Dr.
W. T. BUSH.

The study of philosophy is still hampered by the claims of problems which are the products of presuppositions which no candid observer is obliged to make, but which are remnants from a long tradition. The tradition had its origin in natural conditions characteristic of primitive culture. The resulting metaphysical concepts, since they are not required in order to describe observable facts, but since they do still play a great rôle in philosophy, particularly in the philosophy of religion, are most readily explained as survivals from prehistoric culture. The problems which depend upon taking for granted the authority of these survival-concepts are, accordingly, entirely artificial, and the philosophy whose stock in trade is arguments about these problems is an artificial philosophy. The philosophy which operates with these survival-concepts is monistic idealism, and its two determining ideas are the absolute and consciousness. But systems of philosophy that operate with unverifiable survivals are not the only artificial systems. Systems which exist only to oppose the former derive all their vitality from the existence of their artificial opponent. Accordingly, the various realisms which get their problems from dialectical situations developed by idealism have a subject-matter that is equally unreal. Now, mythology has been, in the past, an instrument for maintaining very important social relations, but if social progress continues, the time should come when misrepresentations of nature may be appropriately replaced by the laws of facts, the only laws that any ideal whatever can intelligently appeal to. Gifted men are, however, devoting their time and wits to debating questions which would not exist save for the survival of three primitive ideas—God, the soul, the universe. The ideas of God and the universe were united in pantheism to give the idea of the absolute, and from the idea of the soul was derived the concept of mental states which yielded the idealistic conception of consciousness.

Modern technical observation does not substantiate any claim to existential validity for these ideas. Their persistence, therefore, in disguised forms, as the presuppositions of problems which men feel obliged to discuss, is a burden for intelligence in the study of philosophy. That part of anthropology which is devoted to the study of origins ought to be the means of liberating many from the perplexities of artificial problems. Disguised theological reminiscence should not continue to be an obstacle to thoroughgoing empiricism.

R. S. WOODWORTH,

Secretary

REVIEWS AND ABSTRACTS OF LITERATURE

The Eternal Values. HUGO MÜNSTERBERG. Boston: Houghton Mifflin Co. 1909. Pp. 436.

This is Professor Münsterberg's English version of his "Philosophie der Werte." It is not a translation, for it contains a fuller criticism of pragmatism than the German work and omits certain of the epistemological discussions there found. For a clear understanding it should be read in connection with his brief article "The Opponents of Eternal Values" in the *Psychological Bulletin* for October 15, 1909, with Part I. of his "Psychology and the Teacher," where he gives the same general position in popular form, and with the first three chapters of his "Psychotherapy," where he restates the relation of this idealistic philosophy to current thought and the relation of psychological to epistemological postulates.

First let us briefly summarize the argument as unfolded by the author. In the sciences, psychology included, we find no values, for science purposely abandons the valuing attitude. This purposeful abandonment of valuation in science evidences a valuing of this abandonment. Nor do we find in individual wishes any valid valuations, for these wishes are conditioned by kinks of circumstance and individuality. But we do find in immediate experience valuations assumed to be valid in an over-individual sense. These are due to the satisfaction of will in its fundamental demand for identity, the demand that our experience present a self-asserting world, not a chaos. This fundamental demand takes four forms giving rise to logical, esthetic, ethical, and metaphysical values. Each of these values the author studies in two aspects, first, as naïvely found, and second, as purposely and consciously worked out. Each of these aspects is studied for three different fields, the outer world, the fellow world, and the inner world.

The naïve logical values are called values of existence. In immediate experience we find the self and the not-self. The self is distinguished by having an inner contrast whereby one attitude excludes the opposite attitude. The not-self consists of things in the outer world, persons in the fellow world, valuations in the inner world. Things have the value of existence when it is postulated that they are possible objects for every subject. Persons exist when it is postulated that they take the relation of subject to every possible object. Valuations exist when it is postulated that our will recurs identical every time in given situations.

The purposive logical values are those of connection. Thus for the outer world science, by means of concepts of cause, time, space, gives us a nature thought of as identical in its substances and energies. In the fellow world, history seeks the identities in the various will-relations of different subjects. In the inner world reason gives us an identity in the different valuations. The whole volume is a carrying out of this task of reason.

In the esthetic valuations Professor Münsterberg again takes the path, not of psychology, but of immediate experience. Wherever through immediate experience we find an agreement of manifold wills we have a naïve esthetic value. These consist of an inner unity of aim in things, which is called harmony, of an intended unity of striving in fellow beings, which is called love, and of an inner unity of striving in ourselves, which is called happiness.

Art gives us the purposive esthetic values, the values of beauty. Art seeks to bring systematically to expression the self-agreement of the world by making complete the mutual support of wills found in the naïve esthetic values. The fine arts give us these values for the outer world by making the form—lights, lines, and the like—agree within itself and with the content. Literature performs a similar task for the fellow world by giving a unity of content, holding together the manifoldness of wills expressed, a unity of style, and a consonance of style and content. Music does the same for the inner world, realizing an inner harmony of content, a harmony of form, and an agreement of form and content.

Distinct from scientific knowledge and from esthetic appreciation, but coordinate with them, is ethical estimation, the value of the identity between the intention and fulfillment. These ethical values in their naïve form are called values of development. Ethically estimated, the outer world is looked upon as furnishing a setting for man, as having real growth as well as change to greater complexity. Similarly in the fellow world we have progress, that is, transition in the communal will toward the over-personal standpoint belonging to every thinkable subject as such. Finally, in the inner world we have self-development, when the inner life follows not merely its individual will but the over-personal will which is really its own.

The conscious ethical values are those of achievement. The achievement of industry has an absolute value by helping the outer world fulfill its intention of helping mankind. Law has an absolute value in the fellow world by forcing on the community those communal volitions which constitute social life. Morality in the inner world is the living out in action of the real will for the eternal values. It is secured, in the face of the pull of our individual will, by thinking of our real selves as an absolute value realizing itself in action.

The final group of values are the metaphysical values. The various values so far outlined are independent, yet the conviction of immediate experience is that there is an ultimate unity behind them. This conviction furnishes the naïve metaphysical values, those of holiness. These religious values take the form of three beliefs, one for each of the aspects of experience. Unity is secured for the outer world by a belief that "through the agency of an over-experienceable power the opposition between natural order, happiness, and morality is removed from the world" (p. 362). Unity in the diverging valuations in the fellow world is secured by a belief in an over-historical starting-point for historical life. Unity in the inner world is salvation. It is the arising in us of that timeless "will-attitude by which every opposition of values is overcome

and the full unity of the true, the harmonious, and the good is reached in our soul" (p. 383).

The conscious purposive working out of this naïve conviction gives us the values of absoluteness. In these we postulate an ultimate reality, an over-self, which is a striving toward identity, a striving whose only content is itself. From this over-self the world is deduced as follows: this over-self as striving splits up into starting-point (past) and goal (future), and thus we have the time category; it splits up into striving (the here) and content (the not-here), and thus we have the space category; the content, the not-here, splits up, hence the striving correspondingly divides and we have individual selves; through these individual selves the over-self manifests itself in three directions and we have the three fundamental values already described. Through the space-time categories we have the deduction of the outer world. Through the individual selves we have the fellow world and the inner world.

After the first reading of this book a person whose habits of thought incline him to consider what is so rather than what must be so is likely to feel that there has been a distortion of facts in favor of an *a priori* system. After a second reading he is likely to admit that there are fact elements at the basis of the argument. After a third reading he will probably wake up to the fact that here is a book which in its suggestiveness is a real contribution to the intellectual life of our time. The helpfulness of the work is varied, but four elements are especially marked. First, it arouses us to the fact that the scientific values are not the only values in life. Like children with new toys, thinkers of to-day are likely to believe that modern science and the habits of thought it fosters furnish the most precious values of life. It is wholesome to be shown other values of equal or greater preciousness. Similarly, in the second place, the book sanctions our naïve convictions of the utter valuable-ness of our values. In the face of a youthfully disillusioned attitude of skepticism toward such values this sanction is a tonic breeze. Third, the volume is a careful working out of a philosophy in terms of value. As we come to know more about this category of value, which has been used so much of late, sometimes we wonder whether it contains so much of real novel revelation as we once supposed. Nevertheless, the use of any new term is helpful in breaking up the cake which covers conventional concepts and the use of this category in a thoroughgoing fashion by Professor Münsterberg is a lasting contribution to the development of this concept. Finally, the Rooseveltian vigor, not merely of the style, but of the fundamental thought, is suggestive as an illustration of a philosophical system which is an expression of a racially and individually vigorous life.

Certain questions, however, must arise to any reader even to one who is more anxious to understand than to criticize. The first question is on the nature of immediate experience. The keystone thought of the book is that in immediate experience we know the self as a will for identity, as demanding a world not a chaos. It is made clear that this will is not the will which is analyzed by psychology. To use an old distinction, the will

of psychology is that of the objective self, the "me," while this fundamental will known in immediate experience is the subjective self, the "I." It is further made clear that to know in the sense of psychology is to express one value, the logical value, while to know in the sense of immediate experience is to be immediately aware of without discriminating. But can we be aware of the self immediately, or otherwise, as active or passive without discriminating, without the I thus becoming the me? To put the difficulty in argumentative form: The I can not be known in immediate experience, for to know even in immediate experience implies to objectify, and to objectify the I is for the I to deny itself; if the I can not be known at all, it can not be known as will; if it can not be known as will the valuations can not be deduced from it; if they can not be deduced from the I, and if the valuations exist as we find that they do in experience, they are activities of the objective self and are not absolute but conditioned.

Furthermore, is not this belief in the unconditioned nature of values an illusion similar in its psychological source to the "dialectical illusion in all transcendental proofs of the existence of a necessary being" pointed out by Kant? Professor Münsterberg replies that this criticism is not well founded, since Kant sought an absolute *beyond* experience while he seeks eternal values *in* "experience which becomes a world through the organizing activity of our will."¹ In other words, he believes that the illusion which Kant recognized as inevitable in the search for unconditioned being beyond experience is not inevitable in the search in experience for the unconditioned form of the will which makes experience possible. It seems that the author of the "Eternal Values" in catching sight of one difference in these illusions, a difference in the realm where this result is found, has failed to appreciate fully a similarity in the two illusions, a similarity in their source and in the result found. The source of the "dialectical illusion" is the use of a "heuristic" principle of our natures by which we have to seek the unconditioned, to prove to us that the unconditioned exists, that is, using it as pointing to the existence of that which, by this principle, we are compelled to seek. Professor Münsterberg argues that this very heuristic principle, this very striving, furnishes in its form the very absoluteness which it seeks, that it points to itself for the absoluteness for which it strives. The source of the illusion is not altered because the principle has been turned upon itself instead of toward a realm beyond experience. If we are looking through a lens which inevitably modifies our vision we are not helped by turning the lens upon a mirror which reflects the lens and thinking that our image of the lens is not modified.

Subordinate to this are three minor difficulties. The first grows directly from the main question. If we fail to find that the values are absolute, do we need to deny that they are final for us? May we not even deduce, if the facts warrant it, all the values from a fundamental demand of our natures, a demand for identity, considering that the final value. If we find others who think that identity is but a means to the

¹ *Psychological Bulletin*, loc. cit., p. 334.

satisfaction of a deeper value, we may recognize that they have a different final value, or may prove them mistaken, since unconsciously they, too, are really seeking identity as final. We need not deny final values nor affirm that these are absolute.

This brings us to the debate with pragmatism. Professor Münsterberg's chief criticism of pragmatism is that it is relativistic. Relativistic is read to mean that truth for pragmatism is relative to individual demands and the reply is made (p. 36) that the thesis of pragmatism in claiming general validity presupposes a more than individual significance and this denies itself. Is there not here a confusion between the use of the term general and of the term absolute? May not truth have general significance for the tribes of men, but not an absolute significance? Professor Münsterberg replies² that truth binding in any such social sense is not binding at all, is not really truth. In the "Eternal Values" he gives us two definitions of real. In a narrower sense that is real which has the value of existence (Chapter VII.). In a broader sense that is real which is a realization, which satisfies the fundamental demand for the realization of identity (p. 354). "Our own will and our own action must decide whether the change in our life-experience is to be acknowledged as a realization" (p. 355). Here he means our own will, not in the sense of the individual will, but in the sense of an over-personal will which he interprets as absolute. But since truth involves, as Professor Münsterberg suggests, a relation to will, since this will can not be absolute—inasmuch as it can not be traced to the subjective self, for that is unknowable as will or anything else, and if traced to the objective self surely is not unconditioned—must not truth be conceived as relative to over-individual demands, over-individual but not absolute? The discovery of the origin of the binding character of truth should not alter that binding character, whether that origin is found where Professor Münsterberg finds it or where the pragmatist finds it. One is tempted to quote to the author one of his own sentences, "What we feel in our immediate experience (*e. g.*, binding character of truth) is not changed in its meaning and significance by such explanations" (p. 39). He is referring to the biologist's explanations. The same is true of the pragmatist's or the absolutist's explanations.

Finally a question comes in regard to the ingenious deduction of the categories of space and time under the metaphysical values. For instance, the category of time is achieved by the splitting up of striving into starting-point or the past, and the goal or the future. Is this a real deduction of the category of time or is it the application of a category already possessed? Looking through this category at the striving process it naturally splits up, but the splitting up is the evidence of the presence of this category, not an explanation of its origin.

The "Eternal Values" contains a stimulating philosophy which many would honestly like to adopt if they could avoid difficulties such as these.

ROWLAND HAYNES.

UNIVERSITY OF MINNESOTA.

² *Psychological Bulletin*, *loc. cit.*, pp. 336, 337.

Psychotherapy. HUGO MÜNSTERBERG. New York: Moffatt, Yard & Co. 1909.

This volume, the author states in his preface, belongs to a series of books which are being written "to discuss for a wider public the practical applications of modern psychology." The first book, called "On the Witness Stand," studied the relations of scientific psychology to crime and the law courts; this new book deals with the relations of psychology to medicine.

The work is divided into three parts: Part I., dealing with the psychological basis of psychotherapy; Part II., with the practical work of psychotherapy and Part III. with the place of psychotherapy.

In Part I. the author, in the chapter entitled *The Aim of Psychology*, makes clear at once that man may be considered from two entirely different points of view—the purposive and the causal—and that the indiscriminate and haphazard confusion of these two points of view has led to a great deal of misunderstanding and confusion. He seeks at once then to carefully define these two standpoints and shows that, regarded from the determinative point of view, man is regarded subjectively in his attitude to his environment as something with purposes, ideals, views, and feelings, a concrete personality. This is regarded as being mental in contradistinction to that which is objective or psychological, "not a self which shows itself in its aims, purposes and attitudes, but a complex content of consciousness, which is composed of numberless elements . . . an object which I understand by describing its elements and their connections."

This differentiation is not attempted with the view of indicating the relative importance of either attitude, but only that a clear understanding may be obtained of certain fundamentals of psychology, so that what follows may be appreciated.

For the author, the theory of a psychophysical parallelism is necessary in order that many things be made clear, and quoting from the chapter *Mind and Brain*—we read that "We can not have any explanation of mental states as such at all, if we do not link them with physical processes." Further, in order that the relationship between the causal and purposive be clearly brought out, he continues: "Mental facts which are conceived parallel to physiological brain processes do not represent the immediate reality of our inner life—our life reality is purposive and, as such, outside of all causal explanation, and we have to take a special, almost artificial, point of view to consider inner life as objects, as contents of consciousness. Our inner life in its purposive reality has therefore nothing to do with brain processes, but if we are on the psychological track and consider man as a system of psychological phenomena, then to be sure we must see that our only possible interest lies in the finding of necessary causal connections." While it is thus evident that the author is sufficiently plain in this for even the general reader, the question of free-will and determinism is not so clearly defined, and though, from the purposive standpoint man is free, from the causal he may be free or unfree; however, his freedom can not mean exemption from causality,

"but whenever the motor response results from the undisturbed cooperation of the normal brain parts, then the inherited equipment and the whole experience and the whole training, the acquired habits and the acquired inhibitions, will count in bringing about the reaction. This is the psychological freedom of man."

Doubtless many philosophers will take occasion to disagree with such views, but the evident aim and intention of the author is not to evoke philosophical discussion but merely to postulate certain psychological doctrines to which he adheres, that he may have a definite groundwork for what is to follow.

The succeeding chapter on Psychology and Medicine where the necessity for clear-cut psycho-diagnosis as well as psychotherapy is pointed out, is most lucid and should be perused by all those who would approach the psychomedical field in the right spirit. The statement, "The mind reflects only symptoms of the disease, the disease itself belongs always to the organism. Psychotherapy has suffered too much from the belief that the removal of mental symptoms is a cure of diseases," should be of value in pointing out the necessity of biological and medical training for those who undertake the treatment of patients by means of psychotherapy.

In the chapter on Suggestion and Hypnotism the author is concise and easily understood. "To be suggestible means to be provided with a psychophysical apparatus in which new propositions for actions close easily the channels for antagonistic activity," and later—"The hypnotic state in its very nature is a state of reenforced suggestibility." The subconscious story is told in three words—"there is none." This chapter can not be done justice to in a review; to be appreciated it must be read—and further, the reader is well repaid.

Part II. deals first with the field of psychotherapy, with general and special methods where the methods of Freud and Jung and Breur are discussed sanely and dispassionately, which in itself is something to be thankful for, and finally, under the caption The Mental Symptoms, cases are judiciously chosen that illustrate some of the symptoms for the relief of which one may apply psychotherapy. Too much can not be said in praise of Professor Münsterberg's discretion in this chapter; his sane outlook is nowhere more in evidence. Bodily symptoms that may be benefited by psychotherapy are considered in a separate chapter.

The book concludes with the three chapters of Part III., showing the place of psychotherapy in the church in relation to the physician and to the community. In this the author is at his best and the views expressed are thoroughly safe and sane.

For the general reader the book can be heartily endorsed; for the general medical man the same applies. By students of psychology, psychiatry, and neurology certain exceptions will undoubtedly be taken to certain views expressed. Despite this fact, Professor Münsterberg is to be heartily congratulated on having given most ably and clearly an exposition of a topic of great interest and importance to all.

J. G. FITZGERALD.

PATHOLOGICAL DEPARTMENT, UNIVERSITY OF TORONTO.

Modern Religious Problems. The Gospel of Jesus the Son of God. GEORGE WILLIAM KNOX. Pp. 119. *Sin and its Forgiveness.* WILLIAM DE WITT HYDE. Pp. 116. *The Founding of the Church.* BENJAMIN WISNER BACON. Pp. 90. *The Historical and Religious Value of the Fourth Gospel.* ERNEST F. SCOTT. Pp. 83. Boston and New York: Houghton Mifflin Co. 1909.

Under the title of "Modern Religious Problems," a series of small volumes on theology is promised us, four of which have already appeared. The editor of the series, Dr. Ambrose White Vernon, is a graduate of Princeton University and has been professor of practical theology in Yale University for several years. The contributors are among our leading Protestant theologians. The volumes of the series will be divided into four categories, according as they relate to the Old or the New Testament, the fundamental Christian conceptions or the practical church problems. "The aim of this series of books," we read in an introductory notice, "is to lay before the great body of intelligent people in the English-speaking world the precise results of modern scholarship so that men both within and without the churches may be able to understand the conception of the Christian religion which obtains among its leading scholars to-day, and that they may intelligently cooperate in the great practical problems with which the churches are now confronted."

The first volume, "The Gospel of Jesus," by Dr. Knox, opens with an introduction in which the aim of the contributors is exposed at greater length. They are fully aware of the crisis through which the Christian religion is actually passing, due to the lack of authority of the sacred books nowadays and to the growing disregard for the world to come. They hope, however, that the crisis will be passed through as safely and as bravely as others have been. In order to contribute to this laudable end, they propose to enter fully into the spirit of the day; to accept, nay to welcome all the results of modern criticism.

There are, no doubt, a few points of doctrine which Dr. Knox seems to regard as essential to a Christian, and hence as immutable. Such points are the deity of Christ, the resurrection from the dead (p. 6), the belief that the earthly life is worthless and that the citizenship of the Christian is in heaven (pp. 35-6). He frankly admits, however, that the faith of the present day must differ from the faith of previous ages. "It is not precisely the same old story which is repeated generation after generation. . . . Every age determines its gospel" (p. 1). A restudy and a restatement of the fundamental Christian truths seem, therefore, necessary to him. Religion, says he, can not pass away because it is of man's nature; but for the same reason it can not remain unchanged (pp. 49-50).

Instead of laying emphasis on the metaphysics of the person of Christ, or the nature of his birth and the mode of his resurrection, the church must have in view the welfare of mankind (pp. 114-6). It must not even insist too strongly upon the miracles of Christ. There were among the Jews during his lifetime no miracles in the modern sense, for the simple reason that the distinction between the natural and the supernatural was not made (p. 59). Even when we speak of the resurrection of our Lord,

we must be careful to understand one another. Are we bound to believe in a resurrection in a literal sense? By no means. Paul identifies the risen Christ with the spirit by which the disciples had felt themselves seized. "This is at the furthest extreme from a rational conviction based on historical evidence, that the tomb was empty, and that Jesus had risen" (pp. 94-5).

The same progressive attitude is held by the other contributors. In "Sin and its Forgiveness," Dr. Hyde goes so far as to maintain that "as human experience develops, the divine attributes have to be retranslated into terms of the deepening experience of the race" (p. 56). By forgiveness, Dr. Hyde does not mean any ecclesiastical forgiveness. He knows too well that "the thoughtful modern man would not give the snap of his fingers for the difference between ecclesiastical forgiveness and ecclesiastical condemnation" (p. 100). He regards forgiveness, therefore, as a personal and social relation; as a deed whose real agents are laymen and pastors doing laymen's personal work with individuals (p. 108). He gives as a key to his doctrine the following principle, which may appear somewhat risky to the uninitiated: "Whoever forgives his fellow men their trespasses can have for the asking the divine forgiveness for his own shortcomings" (p. vi).

In "The Founding of the Church," Dr. Bacon retraces the birth of the church, its faith in the risen Christ, its institutions. Jesus himself, he asserts, had no idea of founding what we mean by church (p. 11). He did not expect the little flock he had gathered to go out of Israel. The church as we understand it to-day is an outgrowth of Jesus's rejection and crucifixion. The critical moment in its existence was Jesus's apparition to Peter. It matters little whether such an apparition was subjective or objective. It made Peter the founder of the church just as Jesus was the founder of the kingdom of God (p. 86). Only with the resurrection did the Gospel begin.

Finally, in "The Historical and Religious Value of the Fourth Gospel," Dr. Scott lays before us the conclusions reached by modern scholarship with regard to the gospel of John. After showing that the traditional theory which attributed it to the apostle John must be abandoned, he concludes that the unknown evangelist very likely belonged to Asia Minor and lived within the first two decades of the second century. He next studies the characteristics of the gospel and the aims of its author. The task which the evangelist laid upon himself, says he, was that of interpreting to a new time and translating into the terms of a different culture the truth as it was in Christ (p. 30). Judaism and Christianity had then come to open quarrel and the new-born religion had to seek its future in the Gentile world. This is the reason why the fourth evangelist presents the Christian theology under Greek forms of thought. It is the reason why he assimilates the Alexandrian theory of the Logos, which he identifies with Jesus, who thus becomes the Son of God.

The author ends with a chapter on the permanent value of the gospel and its influence on the subsequent history of Christianity, which one can

not over-estimate. It was chiefly due to this influence, says he, that Christianity remained true to its original character amid the many disturbing forces of the second and third centuries.

It is impossible in this brief notice to do justice to these four volumes. They embody the very spirit of the best Protestant theology and will no doubt dispel many a misunderstanding and engender a deep sympathy for the church in many minds which are still repelled by the pretended conflict between Christianity and science. And yet we can not but express a feeling of apprehension which seizes us when we read these beautiful pages.

Will not the successive modifications which Christianity shall be made to undergo in the course of ages so alter its nature as to render it a mere shadow of what it was in the past? And shall we be entitled to call it Christianity then? It seems, indeed, that the doctrine contained in the four volumes we consider may easily lead us to a profession of faith which can hardly be called Christian. The authors of these books, as we have seen, try to avoid the supernatural as much as possible. They do not decide the question whether Jesus performed true miracles or not. They would even be ready to explain his resurrection in a metaphorical sense. It is true that they regard the divinity of Christ as the first article of their creed, and heaven as the true abode of mankind. But what must we think of similar assertions when we are told that "the hard and fast distinctions between earth and heaven, natural and supernatural, God and man, have completely broken down" ("Sin and its Forgiveness," p. 100)? Does it not mean that if the Deity was embodied in Jesus Christ, it was also embodied in Plato and Socrates? And if such be the case, why should we call ourselves disciples of Christ rather than of Socrates or Plato? The doctrine of Jesus has effected a revolution on the face of the world, it will perhaps be replied. It is from Christ that our civilization, our ideals, our very life, is derived. To this we will answer with Dr. Knox that it is impossible to tell whether our Christian ideals are the result of Greek philosophy colored by the Hebrew affluent or whether the Bible contributes the main stream (p. 21). We will also remark with Dr. Hyde that the Christian doctrine of forgiveness is latent in Plato's dialogues (p. vii). And indeed why should we not prefer Socrates or Plato to Jesus, who was a peasant ("Gospel of Jesus," p. 80), whose knowledge of the larger world of men was as limited as his knowledge of its learning (p. 56), who was regarded as insane by his own family (p. 93), whose life ended in failure (p. 88)?

It is Guyau, I believe, who said that Protestantism logically leads to atheism. Perhaps he was not entirely wrong.

JOSEPH LOUIS PERRIER.

NEW YORK CITY.

JOURNALS AND NEW BOOKS

REVUE DE MÉTAPHYSIQUE ET DE MORALE. January, 1910. *La métaphysique de Hegel considérée d'un point de vue scientifique* (pp. 1-24): F. ENRIQUES. — Hegel's concrete logical embodiments reduce to nonsense, but the poetic feeling of the system is an infinite inspiration. *Quelques remarques sur l'“Ethique à Nicomaque”* (pp. 25-36): A. LASSON. — A study of the relations of the three great reports of Aristotle's Ethics. *La morale positive* (pp. 37-78): CH. DUNAN. — A reply to certain criticisms of M. Belot, and a defense of the author's theory that metaphysics should be the basis of ethics. *Le Darwinisme en sociologie* (pp. 79-92): C. BOUGLÉ. — An attempt to define the sorts and limits of the influence Darwin has had on sociology. *Études critiques: Note sur la querelle des deux gammes*: G. LECHALES. *Questions pratiques: Le procès de la démocratie*: GUY-GRAND. *Supplément*.

Hart, Joseph Kinmont. A critical study of current theories of moral education. Chicago: University of Chicago Press. 1910. Pp. 48. \$0.53.

Johnson, Thomas M. Proclus' Metaphysical Elements. Osceola, Mo.: Published by the author. Pp. xvi + 201.

Partridge, G. E. An Outline of Individual Study. New York: Sturgis & Walton Company. 1910. Pp. v + 240. \$1.25.

Peet, T. Eric. The Stone and Bronze Ages in Italy and Sicily. Oxford: Clarendon Press. 1909. Pp. 528. 16s.

NOTES AND NEWS

At the meeting on March 7 of the Aristotelian Society Mr. G. Dawes Hicks read a paper on “Mr. G. E. Moore on the Subject Matter of Psychology.” “The problem presented by Mr. Moore is that of determining which among the contents of the universe are mental, and how they are distinguished from those which are non-mental. His conclusion is that particular qualities of acts of consciousness, and any collection of such acts which have some sort of unity, are undoubtedly mental entities; whilst it is doubtful whether the entity (if there be such) which sees and feels and thinks is mental, doubtful also whether sense-data are mental, and doubtful whether there is any entity of the kind signified by the phrase ‘content of an act of consciousness,’ although, if there be, it would undoubtedly be a mental entity. Against this it was urged (1) that an individual mind or subject, which *is* rather than *has* its states, and is not a mere aggregate of them, is mental in a more primary sense than the entities Mr. Moore finds to be undoubtedly mental; (2) that the threefold distinction between act, content, and object is justifiable, and that the content is not rightly described as mental; (3) that it is possible to define more precisely what is meant by ‘an act of consciousness’; and (4) that psychology can not legitimately be restricted as regards its subject-matter to what is mental or psychical.”—*The Athenæum*, March 19.

THE first meeting of New York State teachers of educational psychology was held at Ithaca, April 8 and 9, at the invitation of the Educational Department of Cornell University. Representatives of the colleges and normal schools of the state discussed the extent and form of instruction in the nervous system, and the place of experimental work, in the course in educational psychology. The latter discussion resulted in the formulation of the chief purposes for which experimental work might be introduced, and of the criteria for the selection of specific experiments. The discussion of experimental work was supplemented by an exhibition of the apparatus used for demonstration in the Cornell course in general psychology, of the drill and research equipment of the psychological laboratory, and of apparatus in the educational laboratory for the conduct of mental tests. By invitation, the evening meeting was held in the psychological laboratory, where the formal program was followed by an exposition by Professor Titchener of the contributions of the Cornell laboratory to structural psychology, with special reference to the experimental psychology of the thought-processes. A committee, consisting of Professor G. M. Whipple, of Cornell (chairman), Professor George M. Forbes, of Rochester, Dr. W. Van Dyke Bingham, of Columbia, and Dr. Susan F. Chase, of the Buffalo Normal School, was appointed to arrange for a meeting next year.

DR. E. H. CAMERON, instructor in psychology in Yale University, has been advanced to the grade of assistant professor. In that institution Dr. F. S. Breed, now engaged in graduate work in comparative psychology at Harvard University, has been appointed instructor in psychology.

DR. C. LLOYD MORGAN, F.R.S., for upwards of twenty years principal of University College, Bristol, first vice-chancellor of the university and now professor of psychology and ethics, has received a presentation from the staff and students of University College and friends. The gifts consisted of several substantial pieces of plate and £200 worth of books.

DR. J. H. CREIGHTON, professor of philosophy at Cornell University, will have leave of absence next year. His course will be taken by Dr. G. H. Sabine, of Stanford University.

WALTER T. MARVIN, A.B. (Columbia), Ph.D. (Bonn), preceptor in Princeton University since 1905, has been appointed professor of mental philosophy and logic in Rutgers College.

PROFESSOR G. H. SABINE, of the department of philosophy at the Stanford University of California, has been granted leave of absence for the coming year to supply for Professor Creighton in the Sage School in Cornell University. During the second semester of next year Professor Addison W. Moore, of the University of Chicago, will conduct courses in the department at Stanford.

THE JOURNAL OF PHILOSOPHY

PSYCHOLOGY AND SCIENTIFIC METHODS

THE RELATIONAL ACCOUNT OF TRUTH

THE problem of the definition of truth is much like that of probability in that both belong to logic and can therefore be settled with a minimum of reference to metaphysics. In obvious recognition of this fact Professor James states that in so far as pragmatism is a methodological theory of truth it is no metaphysic, but, on the contrary, might be held by metaphysicians of whatever stamp.¹ And yet his writings on pragmatism show the constant concern to contrast "the belief that the world is still in the process of making with the belief that there is an eternal edition of it ready-made and complete." Doubtless the metaphysical aspects of truth are worthy of weighty considerations, but since it is confessedly quite unnecessary to thrash out questions of monism and pluralism, of idealism and realism in order to arrive at a logical definition, it will be the explicit aim of this paper to avoid such things wherever possible.

Now if we turn our attention to the problems of truth that seem to call for solution, we find that one difficulty is felt with especial keenness. Truth has often been defined as agreement of an idea with the object, but how this agreement is possible turns up as a perennial epistemological puzzle. It has been explained by Professor Royce as consisting of a form of "one-to-one correspondence" which the idea itself chooses and intends. From a different point of view Professor James regards an idea as agreeing with reality if it "works," if it "helps us to get into satisfactory relations with the rest of our experience." Both assertions are illuminating in their place, and perhaps they are not utterly inconsistent with each other; but however this may be, they bring up questions which we do not need to settle. For it is not solely ideas that can have the character of truth attributed to them. Any kind of a representation at all

¹ "Pragmatism," New York, 1907, p. 54. Compare also the statement, "My account of truth is purely logical and relates to its definition only." This JOURNAL, Vol. V., p. 179.

may be called true; but also many things can be true which are not thought of as representations. The matter that a proposition asserts is not ordinarily regarded as a representation or duplicate of something. Men of science and of practical affairs carry on investigations about the truth of particular matters without at all referring to "ideas" and "objects" and "agreement." Thereby they avoid many epistemological difficulties and differences, and this suggests that we may very profitably do the same.

The way thus cleared we pass on to the further difficulties which are described by Schiller as rendering impossible all definitions of truth not couched in terms of value.² Besides the "agreement" definition above discussed, he finds that non-pragmatic literature furnishes only one respectable attempt at a definition. The true has often been said to be that which fits into a system. Schiller's strenuous objections to this formulation seem to be quite sound, but he fails to discern that it contains a certain theme which, we shall later point out, really underlies all theories of truth. He argues with justice that the above formulation is no criterion since falsehoods can themselves form a system. Similarly he adds "It (the above definition) would be adequate if we really had an indefeasible system of absolute truth by whose aid we might detect the inconsistencies of the pseudo-systems. But where shall we find such truth? The bodies of 'truth' which *de facto* we acknowledge in our sciences are all partial systems, incomplete in themselves and discrepant with each other. If nothing short of absolute truth is perfectly systematic, and if all our systems are imperfect, is not all our 'truth' tainted with falsehood, and must it not be admitted that *no* (actual) *systems are 'true'?*"³ Furthermore, in his well-known way, he insists that it is not good philosophy to conceive individual systems as in the end converging in one absolute and all-embracing system which alone would be indubitably and strictly "true." For this is to commit the fallacy of arguing from the unity of a concept to a similar unity of the concrete ways of exemplifying that concept and so to assume that there is one system and no more into which all truth must finally be fitted. Accordingly he concludes that only two ways remain to fasten down truth: if an *ens realissimum* is not assumed, then there remains nothing else but to tie truth to utility, to particular "fruits" and "consequences."

We desire to submit, on the contrary, that truth can be firmly anchored regardless of metaphysical controversies about the existence of an all-embracing system of relations. This lesson can be abstracted from the results of modern mathematical research. There

² "Humanism," London, 1903, Chap. III.

³ *Ibid.*, p. 48.

is no "absolute" system of spatial relations, no absolute geometry, but within each particular geometry, relations, and the truths that affirm them, are as hard fixed as any "absolute truth" could ever be. We know that the proposition that a straight line is the shortest distance between two points is by no means absolutely true in the sense that Kant took it to be; but with respect to that particular system of relations called the Euclidean geometry it still is considered as *absolutely* true. Certainly relative truth is not absolute truth (truth without respect); but relative truth is *absolutely* relatively true. Look at it from any point you please, and it always remains true with reference to the standpoint to which it is relative. If a sum total of particular geometrical systems or of particular scientific systems should be shown to exist as a unitary whole in addition to these particular systems themselves, well and good! We should know something *additional* about being and about truth, but it is emphatically to be maintained that in order to have truth it is not necessary to chain it to the whole of being.

In order to develop this thesis a few words need to be said as to what being *logically* is, as to what is meant by saying that a thing exists. For as Taylor says, and as James agrees, "'Reality' is, in general, what truths have to take account of."⁴ Or to express the same thing in our own terminology, a truth is something that *designates* certain relations which have some attribute or other which entitles them to be called existent. With this recognition of the relation between truth and existence we inquire, What is logically meant by saying that anything exists,—say the traditional fairy, for instance, or Achilles, or the number two, or this desk? Obviously all these things have existence in some sense, since we regard them as legitimate objects for logical discourse. But it is immediately noticeable that some distinction is drawn with reference to the existence of the fairy as compared with that of the desk. It therefore suggests itself first to inquire what is the property common to all things that are said to exist; and secondly, what are the additional properties that belong to such things as this desk which so distinguish them from such things as fairies that the latter come at times to be called unreal?

To say that a fairy has existence is to connect it with that group of facts known to childhood which consists of dragons and heroes and demons and the rest of wonderland. To assert a fairy is to imply these things. Similarly to assert that the number two exists is—as any exact definition of "two" will clearly bring out—to imply the system of whole numbers, or at least some essential part thereof. And finally, when we say that this desk exists, we mean not with reference to fairy-land nor with reference to the whole-number sys-

⁴ "Pragmatism," p. 244.

tem, but with reference to such objects as the other things in this room, *e. g.*, this chair, those walls, etc. In short, when one affirms that something exists, one implicitly or explicitly indicates some specific context and says that that thing implies that context. Not to refer to some such context and yet to try to affirm some existence would be to utter meaningless or self-contradictory words. To put this view of existence in a formula we should say that to exist means, with reference to some determinate system of relations, to imply that system.

But since this definition applies to the objects of the reason, the imagination, and the sensible world alike, there immediately arises an objection which needs to be answered before we proceed. For how comes it, then, that such things as fairies have come to be called unreal in comparison with the objects of the physical world? It is simply because we have selected that particular system called the physical world as the one which is most important for our activity and for our thought, and thus in a secondary sense have come to call it *the* real world. But in the primary sense of the term fairies exist no less than do the physical objects.

The first step toward a logical definition of truth consists in making a logical definition of existence. This being done, if we hereupon proceed to say a few words as to what constitutes a discovery that some precise thing exists, we shall find that we have come upon truth almost before we know it. To find out whether a thing exists one of course tries where possible to come in perceptual contact with it. One lets his sense organs play upon it, finds that his sensations do or do not imply the thing, and passes his judgment accordingly. But often it is inconvenient or impossible thus to get at the thing itself, and then one must content himself with examining the thing's environment or such parts of it as are accessible and then one searches in the latter for indications of the presence of the thing. If, for instance, I wish to learn whether "*La Tosca*" was played at the opera last night, I can not now put myself in immediate perception of the performance, but I can at any rate examine what one might reasonably call the environment of the opera, *viz.*, the play-bills, the newspapers, the knowledge of my friends, etc. If "*La Tosca*" existed last evening, it existed with reference to a very definite system of relations, and I am now examining that system—or such parts of it as I can get at—to see if it implies "*La Tosca*." I can be absolutely certain that that system either does or does not imply "*La Tosca*"; hence all that I should need in order to pass a certain judgment that the performance, let us say, was given, would be to get at and examine all the parts of that system essential for determining the point at issue. But unfortunately I can not get at all those

parts, and precisely because that performance is now an event of the past, and therefore, since I should look in vain for absolute certainty, I have to content myself with reasonable indications that the system implies that "La Tosca" was given last night. In so doing I form the familiar probable judgment. If, on the other hand, not an operative performance but some abstract mathematical entity were in question, and I needed to find out whether the latter existed with reference to some specified system of mathematical relations, I could (if I had the requisite mathematical ability) make a thorough examination of this mathematical system, and could accordingly pass an absolutely certain judgment that the entity in question, let us say, is implied. But whether one passes probable judgments or certain judgments; whether one is considering the existence of a physical or an imaginary or an abstract logical object with reference to its specified system of relations;—what one does is to search that system for indications that that object is or is not implied. It is easy to put this into a formula at once, and we can illustrate and make it clearer later on. *To be true is, with reference to some determinate system of relations, to designate certain relations which are implied by that system.*

First we will illustrate this with concrete examples; next, show how it meets the difficulties which Schiller and James draw attention to; and this will lead us briefly to investigate in how far it agrees with pragmatic standards, and finally, in how far it must be used—consciously or unconsciously—in any self-consistent philosophy.

The simplest example of truth in the abstract is furnished by the syllogism. The premises state that all *A* is *B* and that all *B* is *C*; the conclusion, all *A* is *C*, is hereupon said to be true, and by this nothing more is meant than that this conclusion designates a relation which those premises imply. Again, the proposition that the sum of the angles of a triangle is equal to two right angles is frequently called true. But of course it is true only with reference to the Euclidean system and not with reference to the pseudo-spherical geometry or certain other non-Euclidean space systems. Euclid's system implies it, while these others do not. To take a physical example, suppose that I affirm that this paper is white. I am justified in believing this statement to be absolutely true provided that I give it any meaning at all. For I mean to indicate a certain complex system of relations in which human beings with sense organs and sensations like my own and also objects capable of affecting those organs like this paper have their place. And with reference to the system of relations that human experience of this sort constitutes, I say that this paper is white, and I mean that this fact is implied by that system of human experience. I do not say that this paper is

white and mean to refer to a system of experience possessed by beings whose color-vision lacks the sensation, white. But I make the statement with precise, though unexpressed, reference to our accepted human experience, and as such the statement is *absolutely* true. In this respect it does not differ one whit from any discovered mathematical fact, and since even James admits that the latter have an absolute and eternal character, the same thing must be admitted of truths which have a more obvious human character.

But the relational definition is very sharply to be distinguished from the description of truth as mere "systematic coherence" which Schiller criticizes with much justice. The Ptolemaic theory, as he would suggest, is quite systematic and yet is held to be false. The real reason for this is that *internal consistency does not make the thing that has it true*. It requires consistency with external things for that, and then the thing is true only with reference to those external things. But in so far as the "coherence" theory suspects that truth is ultimately based on consistency of some form or other, it pleads for what any consistent pragmatism must admit.

But, as I hope has been made clear, a theory of truth based on the implication relation does not have to make reference to an "all-embracing" system of relations. Indeed, even if such a thing as a sum total of relations should be proved self-contradictory, the relational view of truth would be left essentially unaffected. For no one doubts that we have particular systems of relations, and I hope that it is clear that their implications are such as "no further experience will ever alter." What is relationally true to-day can not be relationally false to-morrow if it is essentially the same "what." The Ptolemaic astronomy was no truer a thousand years ago than it is to-day. All will admit that it would be absurd to say that the solar system changed when the heliocentric system came to be enunciated. The latter theory designates certain relations which the solar system implies. The Ptolemaic system does not do this and never did. Hence we may be sure that it is relationally false regardless of whether we shall ever be able to measure it up by an "all-embracing system of reality."

The above suggests the current controversy concerning the mutability of truths, and with this question we will commence a brief discussion of relationalism as compared with pragmatism. James's statement that the true is "only the expedient in the way of our thinking" is succeeded by the remark that the Ptolemaic system was quite expedient before the heliocentric theory was recognized. It would seem to follow that the Ptolemaic theory was once true—else what is the use of speaking about all this? But James frequently draws our full attention by means of some startling paradox, and

when we excitedly turn toward him he proceeds to define his epithets until they come to lose much of the startling character that originally drew our attention. Hence, though he explicitly states that the Ptolemaic theory was once expedient, he is quick to add an explanation. "When new experiences lead to retrospective judgments, using the past tense, what these judgments utter was true, even though no past thinker had been there. We live forwards, a Danish thinker has said, but we understand backwards."¹⁵ Ergo, the Ptolemaic theory was false, after all, and hence it was not *made* false, and likewise the heliocentric theory was not *made* true. If this be but granted, then it would seem possible to resolve some of the entanglement by distinguishing between a truth and the realization or consciousness of that truth. The former in itself would be a mere thing *in posse*, to borrow James's expression for it, while the realization would mark the truth in actual use. The passage from the former to the latter would be the change or mutation. It would be a passage from an abstract thing to a concrete thing which in many respects, at least, should be considered the more important of the two. But though change thus comes in as an important fact, it is confusing to say that it is the truths themselves that change. Ideas change, and thereby acquire new implications. But the implication relation itself is not subject to change, and truth is only a certain aspect of implication relation. Hence truth is like the number two, which it would be useless to call either static or changing.

On one point relationalism and pragmatism seem to take sharp issue. That point is with reference to the greater-less relation as holding between truths. Given, let us say, a set of ten simple propositions and suppose that they were considered with reference to a system of relations by which eight of them were implied while two of them were contradicted. Then if this set were to be compared with another set of ten simple propositions all of which were implied by that system of relations, both relationalism and pragmatism might agree that the latter propositions as a set were *more* true than the former. But now suppose a different situation. Suppose that we were considering two sets of propositions and that in each case every one of them was in thorough logical consistency with the system of relations by which we were measuring them. Then relationalism would unhesitatingly pronounce them both true and could not attribute any meaning to saying that one is *more* true than the other. But pragmatism making truth directly depend upon utility rather than on implication, it follows that wherever one truth is more useful than another it must likewise be more true than that other. And since any given proposition varies

¹⁵ *Ibid.*, p. 223.

in usefulness from day to day it is constantly sliding up and down the scale of truth as well. Now this is untenable. Barring cases such as we abstractly considered above, where they are partially implied and partially not implied by the system that measures their truth; barring these cases, a thing is either implied or it is not implied, it is either true or it is not true, and there's an end of the matter. The proposition, "This particular piece of paper is white," can not be described as less true than one that Taft is president or that I must eat in order to sustain my life, even though these three propositions have various degrees of usefulness.

It is not easy to dissuade oneself that most pragmatists, when they say that the truth of a thing depends on its practical consequences, mean just what is ordinarily meant by practical. What a business man would mean, for instance, if he employed the term. But we have been given plainly to understand that it was never meant to oppose it to the purely cognitive.⁶ If we had known that we should never have been so startled! For it ought not to be hard to convince any one that when we think of something as true we have some purpose on hand for which that thing may have value; and in estimating the truth of that thing it may be confessed that we select the system of relations by which we measure it. But no matter how subtly usefulness be defined or redefined, it will always admit of degrees,—provided the term be not subjected to our unrecognizable distortion. And hence whatever meaning "usefulness" may come to acquire, if truth be made a function of it, there will always be some truths less true than other truths because the latter happen to be more useful.

Pragmatists have so frequently challenged their opponents to define their own view of truth that the question came to the writer's mind, "What is it which the non-pragmatists assert, which the pragmatists deny?" The present discussion, however crude its form, serves to hint at the fundamental issue. And yet to what extent the relational account is in utter disaccord with the central meaning of the pragmatists, I should incline rather to ask than to state. I do not see how the essential thesis of relationalism, with whatever particular errors I may have expounded it, can be successfully contradicted by any doctrine. Phenomenalism, for instance, is by no means inconsistent with relationalism. Indeed I hope that it has been shown that distinctly human truths (statements of color, etc.) are quite as absolute in character as are truths that are less obviously human. Relationalism seems to be presupposed—even though unconsciously—in every consistent philosophy. Cer-

⁶ *Phil. Rev.*, January, 1908.

tainly it is not so presupposed by a pragmatism that interprets the term, "practical" "in the narrow sense." Mere utility will not inevitably drag along the implication relation. But wherever statements are made that ideas are true because they "work," because they successfully "lead" to other ideas and to other realities,—there we are simply listening to descriptions of the implication relation in certain concrete manifestations. For that one thing can imply another means nothing more than that things go together in our experience; and hence that one thing may "lead" to the other. And without this implication, this togetherness, all value would fade into nothingness.

EDMUND JACOBSON.

CAMBRIDGE, MASS.

ON METHODS AND METHODOLOGY

THE science of methodology has, for many years, been recognized as a branch of logical theory, but, concerning its objects and its methods there appears to be neither general agreement nor clear discussion. It is universally asserted among philosophers that there is a body of knowledge called science, that this has been obtained by a certain vaguely defined scientific method, and that this method should not be ignored in the elucidation of logical theory; but here agreement seems to end. Since the period of Mill and Bain, the results of the study have been meager. The study appears to have become entangled with metaphysical subtleties and to have been barren of definite conclusions which have any recognizable bearing on the sciences from which they have been abstracted. The errors of the old empirical writers have been discovered and pointed out, but no clear and useful conclusions appear to have taken the place of those which have been criticized and abandoned.

This barrenness appears to me to be due to the fact that modern logicians have been largely occupied with the metaphysical foundations of their science, and so have lost touch with the scientific methods which form the rightful subject-matter of their study. The present barrenness and indeterminateness points to the conclusion that a valid and fertile methodology should proceed by the empirical rather than by the metaphysical method.

It is instructive to note that a similar conclusion has been reached by another course of reasoning. This line of thought is best illustrated by some of the views of Professor Dewey. In a criticism of some contemporary logical theory he remarks that "Logical theory will get along as well as reflective practise when it sticks close by

and observes the directions and checks inherent in each successive phase of the evolution of the cycle of experiencing. The problem in general of the validity of the thinking process as distinct from the validity of this or that process arises only when thinking is isolated from its historical position and its material context."¹

The above striking quotation, which I have removed from its context (and with the context of which I must not be understood to express full agreement) well illustrates the standpoint of the present essay. The value of philosophical controversies is often found in the truths which emerge incidentally rather than in any considerable addition to our knowledge of the topics nominally under discussion. In the present instance, whatever opinions we may hold concerning unsettled logical controversies, the view expressed above is one that well deserves careful thought.

The discussion of the metaphysical nature of judgment and of its relation to reality, which forms so large a part of some modern logical theory, has no doubt considerable value from a certain point of view. But, from the standpoint of the objective philosopher, it is more important to distinguish clearly between good judgment and bad judgment. The degree of abstraction in the more abstruse discussions is too great to be of practical use in assisting us to evaluate the logical processes involved in the actual work of positive science.

Without insisting too dogmatically on this view so far as it relates to pure logic, or attempting to limit the methods which may conceivably be used by theoretical logicians in such inquiries, it will be sufficient for me to point out that whatever cogency such remarks may possess in their relation to logic, is vastly increased when we apply them to methodology.

The process of thought is as old as mankind, and, in its rudiments, is probably a faculty inherited from our primeval ancestry in the remote geologic past long before the species man could be said to exist. Certainly more than traces of the thought process are to be found in the higher animals, and, consequently, a subjective analysis of the thought process will have as its subject-matter a mass of ingrained hereditary material. While reasoning that can truly be called logical is not of such remote antiquity, yet it is universal among mankind. Observers of the most backward savage races or of the very youngest children who have acquired the power of speech are often astonished at the penetration displayed in actual practical

¹ "Studies in Logical Theory," p. 62. The present essay is in no way concerned with the relation of metaphysics and logic or with the theories of Lotze and others which Professor Dewey criticizes; but it strongly maintains the necessity of removing methodology from the metaphysical to the practical side of logical theory.

inferences when the subjects discussed are of such a nature as to form a real part of the experience of the individuals concerned. While children and savages would not express their ideas in syllogistic form, it would be idle to deny the applicability of the term logical to any process of thought by means of which it is possible habitually to advance from valid premises to correct or even to plausible conclusions. Indeed, it can surely be accepted as a fact of history, independent of all theory, that a vast amount of logical thinking in the concrete must precede the development of a science of logic in the abstract worthy of the name.

The application of this conception to methodology is obvious. While reason is universal among mankind and can, therefore, be inferred to have descended from a remote antiquity, that development of the process of human thought which can rightfully be described as scientific investigation is of comparatively recent origin. No doubt the first rough principles are implicit in all correct observation and logical thinking. Germs of the method and some of its practical results can be traced to the dawn of history. The primitive steam-engine of Hero of Alexandria, the universal fame of Archimedes and the principles with which his name is associated are two prominent examples. Yet, there is no evidence that any such investigations had advanced beyond the earlier stages when their development was not great enough to supply material for a special branch of logical theory.

For all practical purposes, we can trace the rise of any considerable body of scientific investigation to the sixteenth and seventeenth centuries. This development having existed during so brief a period, it is evident that there is an enormous antecedent improbability against the assumption that, by a metaphysical method, or by an examination of the thought process as such, it is possible to deduce valid principles of methodology. In this region of thought it is also clear that there is a special danger in too great abstraction. When the process is carried too far, the results are liable to lose any intelligible connection with the particulars from which the abstractions have been made.

Examples of this tendency can be seen when intellectualist logic touches the borders of methodology. One striking instance is seen in the modern treatment of cause and effect, concerning which the conclusion of one school of theorists is concisely expressed by Professor Bosanquet, who identifies this relation with "complete ground."²

² See "Logic the Morphology of Knowledge," Vol. I., p. 276. "Now it is plain from what has been said that the distinction of cause and effect is self-destructive. It is utterly impossible to be successful in the investigation of a

It is outside the scope of this essay to enter into a full discussion of the idea of cause or of the elimination from it of the time element; but, without entering into metaphysical reasoning, it will well illustrate the standpoint of this thesis to examine its meaning with regard to science. If "complete ground" be regarded from one point of view, it may be interpreted as a very indirect assertion of the ultimate unity of nature and of the principle that no phenomenon or section of phenomena is in reality isolated, but all take their place in the greater cosmic unity. If it means this, it asserts a principle that few, and certainly not I, are concerned to deny, and it is only open to criticism in that the method of stating it is confusing and entangled with much unnecessary controversy. If, on the other hand, it is intended to be of any practical value in science or in methodology it can readily be seen that it fails to accomplish this object.

The scientist, for the purposes of his actual investigations, is by no means concerned with the nature of cause as such (if indeed the degree of abstraction in such a conception is not so great as to have taken from the term all concrete meaning), but of the interrelation of particular causes and particular effects.

It is the essence of the scientist's conception of cause that it is not complete ground, that it is possible to repeat in time certain conditions which we call causes and obtain thereby certain other conditions which we call effects. A scientist finds by experiments that one specimen of nitrogen which he obtains from the air is heavier than another which he obtains from nitrites. The cause of this is not "complete ground" (which is equivalent to saying that the experiment can not be repeated), but the presence of argon in the air. After a long period of careful research, this particular "cause" of the observed effect is discovered. It is in the unraveling of particular conditions such as these that the phenomenal advance of science has come about, and it is only in so far as methodology can throw light on the character of such interrelations that its treatment of cause or of any other scientific conception has any meaning or value in connection with the sciences from which it has been abstracted.

causal relation without reducing it to the intelligible unity of a complete ground." It is obvious in a case of this kind that immediately the relation becomes reciprocal (complete ground) it becomes identical and we obtain the tautology air = air or argon = argon. And so long as we retain the incomplete relation heavy nitrogen we do not necessarily imply argon. Any event that can be repeated in time is necessarily incomplete ground or "concrete events or groups of incomplete relations" (*ib.*, p. 268), and if we advance beyond this to Professor Bosanquet's intelligible unity we reach a sphere where scientific investigation has no meaning. The metaphysical unity we then obtain is an assumption which antecedes the whole investigation. In short, such a treatment of cause has no bearing on scientific work.

The kind of methodology which we may call abstract maintains its relation to the metaphysics from which it has been obtained, but it has lost its connection with science. Such methods as these do not assist scientific investigation, they only occasion confusion. To this kind of investigation the scientist gives a very effective reply by ignoring it altogether, and the quality of his work does not appear to suffer in consequence. Whether or no the metaphysical treatment of methodology be theoretically possible, it seems not unlikely that other lines of treatment may give more practical results. Even if in a remote future it be possible to carry the process of abstraction to a higher degree, yet, for the present, we require a more careful and detailed study of methods in particular and a wider area of data on which to build our generalizations.

The conclusion of this line of argument obviously points to the desirability of reverting to a more empirical treatment, and to the methods of the great founders of inductive logic and scientific methodology. While some of the special ideas of Mill and the other empiricists are open to criticism in detail, there can be no doubt that in their close adherence to actual instances of scientific investigation, in their abstraction of methods from real researches in which they had been used, they discovered an invaluable instrument of research. In the use of this instrument, modern methodologists must not shirk the task of criticizing, and where necessary criticizing adversely, the methods used by the scientist and the manner in which he applies them. Here is a difference between the standpoint of the early methodologist and that which should be adopted by his successors.

In the early stages of the science it was necessary to find some universal starting-point and this was obtained by the analytical examination of processes of investigation which were clear and straightforward. But, after the first results have been gleaned in this manner, there is a danger that further conclusions concerning method, drawn from researches where there is no possibility of difference concerning methods or results, should be of the nature of truisms. No doubt there are still interesting problems of methodology implicit in the analysis of researches on the formation of dew or in the theories of induced electricity, but such do not lie on the surface. At any rate, there should be possible a new kind of methodological investigation which maintains an even closer relation between theory and practise. Such an investigation will endeavor to distinguish between valid and invalid methods in their application to actual problems, and, from instances of their use and misuse, to exhibit the main principles which underlie them.

Some attempts have already been made by philosophers to accom-

plish these more practical aims. The recognized distinction between the individual and the statistical methods is a case in point. Owing to philosophic criticism, no one, outside the sphere of popular journalism, would maintain that so many people must commit suicide in London or New York every year. Such a work as the second volume of Sigwart's "*Logik*" contains many cogent criticisms of the valid and the invalid application of scientific method. But, as a rule, such investigations are somewhat remote from the actual theories of the contemporary scientist. Standard works tend too much to assume the form of a dictionary of theory. They are ignored by the scientist, who most needs their help, and by the philosopher they are studied without sufficient regard to concrete application.

An attempt to establish a closer relation between theory and practise will be found in my own "*Principles of Applied Mathematics*," an essay which originated entirely from a study of the problem of secular cooling. That any scientist of note, much less the great Lord Kelvin, should have put forward as probable fact, a theory of geologic time which contained so many patent fallacies, appeared to me so strange that I endeavored to discover the reason. It was soon apparent that the mathematical physicist was hypnotized by the form of his mathematical instrument and that he failed to inquire where it was and where it was not applicable. My own article was an attempt to place this matter on a sound theoretical footing.

This, I am sure, is not the only case where such investigations are possible, and I sincerely hope that similar work will be undertaken by other philosophic writers. The scientist will then find that he can not ignore the philosopher, and the philosopher will discover that he has a rightful sphere a little nearer earth than he has been accustomed to look. Wherever methodology may end, it is here that it should begin.

For such work as this, the rise of modern specialism offers many opportunities. In recent scientific investigation, the range of the individual worker has tended to become so narrow, and his outlook over the main field of science so limited, that errors are continually liable to occur in the application of the results of one branch of knowledge to another. The mathematician dogmatizes over the whole field of cosmological speculation. The biologist makes unproved and far-reaching assertions concerning the methods of evolution which affect our ideas on the nature of man and of society. In all branches of science and in all fields of knowledge this is the age of the specialist.

In the careful examination of the methods of the special sci-

ences, in the determination of their nature and of their necessary limits will be found a large and fertile field for the investigation of the methodologist.

H. S. SHELTON.

ASHFORD, MIDDLESEX, ENGLAND.

CONTINGENCY IN AN INFINITE WORLD

IN the number of this JOURNAL for February 3, 1910, Mr. W. H. Kilpatrick champions the thesis that "if the actual universe be conceived as quantitatively infinite," definite and final determination "antecedent to the act of eventuation" is excluded. The event on arrival is, indeed, the inevitable outcome of the actual conditions, but in an infinite universe it can never be inevitable—that is, predictable by an adequate intelligence—before it arrives. *A priori* it is necessarily contingent, since the most perfect deduction is necessarily made subject to the proviso that the conditions remain unchanged. This is what can never be guaranteed in an infinite world, a quantitative infinity offering endless possibilities of new factors appearing in the field of even the most perfect calculation.

The question raised is evidently purely speculative. All actual human prediction is, of course, contingent; but Laplace and his followers have been wont to maintain that for a conceivable superhuman intelligence the future, and indeed all time to its smallest details, would be an open book; or, better, a mathematical formula capable of making infallible disclosures without limit in the past and the future. Mr. Kilpatrick denies this speculative possibility on the ground that it requires the postulation of a closed and finite universe, which is "substantially different from what science assumes our actual universe to be."

But in what sense does science assume the universe to be infinite? Mr. Kilpatrick indicates the correct answer when he explains that he uses "the word infinite . . . in the mathematical sense, to indicate, that is, such a variable number as may surpass any arbitrarily assigned number, however great." At this point difficulty appears, for such an infinite is essentially a positive and not a negative term; it is in itself a perfectly definite quantity. However much it may transcend human grasp and be "infinite" relative to human capacity, it is for the superhuman calculator of Laplace a finite quantity; and it does not appear why such an intelligence should not deal with it successfully, and, if not otherwise hindered, compute with entire accuracy and in utmost detail the whole course of events. Nor is any true infinite regress involved in the consideration of the

new factors furnishable from the stores of a universe infinite in the mathematical sense. The regress would be limited to the extent of the "infinite" in question, which the imaginary calculator would doubtless find little difficulty in exhausting.

Even were Mr. Kilpatrick to cut loose from the support of physical science, and postulate a universe truly infinite, in the metaphysical sense, it does not seem evident that sure prediction by superhuman intelligence would necessarily be excluded, for the organization of the universe might be of a serial character, consisting of an endless repetition of organized systems each of which had relations indeed with its neighbors, but relations of a purely compensatory nature, so that in the course of a given cycle each received from its environment impulses precisely equivalent to what it gave and no more. In that case even in a universe metaphysically infinite, one fails to see why the determination within each system might not be so complete that perfect prediction on the part of an adequate intelligence should be possible.

Suppose, however, we concede to our author the existence of a truly infinite world with universal articulations, what is the practical bearing of his conclusion? Is it more than the overthrow of an incidental speculation? It does not seem to apply to the matters usually at issue in the determinist controversy. For example, the cosmic contingency for which he pleads offers no word of promise to the principle of individuality as this faces the hostile forces of wholesale mechanism. The human individual is immediately known to us as a seat of efficiency, or immanent activity. Determinism, however, goes behind the returns, and resolves this fundamental content of consciousness—which to mature men is perhaps the thing of supreme worth yielded by experience—into illusion, substituting for the perceptual datum the concept of a moving plexus of cosmic agencies, with our consciousness of self as a mere epiphenomenon, the phantasmally continuing rainbow over the stream of mechanical process.¹ Now, just this and nothing more the human individual seems to remain, so far as any bearing of our author's contingency is concerned. If the outcome in a given life is never absolutely predictable, it is none the less true that, whatever the outcome proves to be, it has been determined completely by cosmic and not at all by purely individual factors; and what does it matter to one that his acts are not altogether predictable so long as they are not his, or his only in an epiphenomenal, illusory sense; and so long as he

¹ The only individual which is a reality for determinism (as for Spinoza) is the universe itself; and this, if the determinism is of the naturalistic order, only in half-way fashion, since, while it credits the universe with immanent activity, it finds in it no place at all for ultimate values.

himself, so far as he exists at all, is really a spectator and not an agent in the world, even as regards the activities he calls his own?

Then, the conscious individual normally regards himself and other minds as centers of ultimate, and not merely instrumental, values. To him values are their own *raison d'être*. Nothing good is called to account by normal consciousness unless it be in view of some greater good. Again, however, determinism exposes the sawdust in the doll. Unless it be theological determinism—in which case its empirical grounds are far to seek—values, too, are linked by it into its endless causal chains, and made mere instruments of cosmic selection, happy hits of nature for ulterior purposes, shrewd devices by which she induces certain parts of herself to maintain useful types of function. Now, from this situation also, one looks in vain for relief to any contingency due merely to the infinitude of the universe.

Indeed, it seems evident that out of absolutely determined materials none but a determinist structure is likely to be built. So long as the mechanical philosopher is allowed to quarry the stone, that is, permitted without protest to reify and virtually apotheosize abstractions from the field of perceptual physics, so long are blocks of thought likely to fit into no edifice not inscribed with the name of Destiny.

WM. FORBES COOLEY.

COLUMBIA UNIVERSITY.

REVIEWS AND ABSTRACTS OF LITERATURE

Psychologie de l'Enfant et Pédagogie Expérimentale. Second edition, revised and enlarged. DR. ED. CLAPARÈDE. Genève: Librairie Kündig. 1909. Pp. viii + 283.

This neat little volume is an attempt to furnish practical teachers with the elementary facts of mental growth together with some suggestions and illustrations of how educational questions may be investigated by the experimental method. The first 190 pages are devoted to an informal discussion of various problems of child-psychology. The author is firmly convinced that psychology, especially that of the child, is of the utmost value for the teacher. An interesting and careful historical survey of the development of child-study in all civilized countries is presented.

Next follows a discussion of problems and methods. The problems of an educational psychology are in brief: preservation of the child in health, development of the mind and body through gymnastics, the equipment of the memory and education as such; that is, the development of character. The chapter on methods simply aims to state in a general way for the teacher the different modes of approach to the subject, such as the method of introspection, observation, experimentation, etc., without attempting to go into technical details.

Under "Mental Development" he states in a popular manner various facts regarding physical growth, relation of this phase to mental growth, the importance of play and imitation in the mental development, the meaning and function of infancy, interest in education and the development of interests. Throughout he shows much familiarity with various American studies and refers to them repeatedly. The treatment is interesting and up to date, but presents nothing new to the advanced student, being, as we have said, written as an introduction for the rank and file of the public-school teachers. All the chapters are accompanied with good bibliographies from the German and English as well as from the French.

The last section of the book deals with the problem of intellectual fatigue. Here the material is more valuable for the advanced student, although the mode of presentation continues to be direct and non-technical. He offers a good *résumé* of the complexities of the problem, the factors entering into it, etc. The problem of the "fatigue coefficient" of the different subjects of study, the influence of physical work on mental fatigue, the hypothesis of a reservoir of energy, over-work, and the rest are treated quite fully. The discussion contains much that is suggestive, although the application of the doctrine of the reservoir is sometimes rather fanciful. Brief *résumés* of the ordinary fatigue tests and criticisms are included.

The main criticism to pass on the book is that it is scrappy and does not attempt to present a systematic account of mental development such as the teacher should have. Possibly, however, there is some justification for a rather full discussion of certain pertinent topics instead of a presentation of all phases in a more restricted form.

IRVING KING.

STATE UNIVERSITY OF IOWA.

Contributions to the Study of the Affective Processes. TAIZO NAKASHIMA.
The American Journal of Psychology, April, 1909, Vol. XX., No. 2.
Pp. 157-193.

The author's chief purpose in this investigation is to study "the mechanism of the affective judgment," and this phrase, particularly the word "mechanism," furnishes the key to the general method and attitude adopted in the getting and in the interpretation of the data. The secondary purposes were to test the usefulness of the *Reizmethode* to secure pertinent results bearing on "current affective problems," and to study affective processes by the discrimination reaction method.

In the first place the investigator appears to assume the existence of affective elements, or to work from this hypothesis. By using the method of paired comparisons and by repeating the harmonical experiments of Titchener and of Hayes he wishes to confirm directly the results in regard to affective judging incidentally got by these experimenters. Introspective analysis is the primary object, introspective records being given very fully, especially those of one subject. The data are interpreted to show that the feeling judgment is not a mediated nor resultant experience, but is as immediate as the sensory judgment; this too, contrary to the expectation

of two of his observers. Rarely is there any reason for these judgments. Something of feeling quality is intrinsic in the stimuli, although organic reactions are often mistaken for feeling itself. Tones, for example, are as directly pleasant or unpleasant as they are loud or soft. For color the same thing holds.

Using the *Reizmethode* to discover how feeling differs from sensation, no specific results were obtained and the method, for this purpose, was condemned. The author does ascribe invariable temporal precedence to sensation, opposing Wundt's view that feelings may come beforehand pre-saging the coming sensory experience. As incidental results the conclusion is practically stated that the pleasant-unpleasant dimension is a simple one qualitatively, the same in all sense departments, although one observer thought he found differences within this dimension. The author suggests that these differences may be sensational. Only one subject finds "mixed feelings." The author questions their existence. Likewise for the few reported cases of localization, it is suggested that on a certain hypothesis they too can be explained away.

The discrimination reaction method determines the time relations to be longer than sensible discriminations, yet that these affective processes are amenable to tests by this method.

The study shows an industrious scrupulousness, numbering, counting, calculating by highly approved methods, and quantificating even the most obvious results. It strikes the reviewer that there is something lacking, not wrong necessarily, in this method, if one judges entirely by the effect on one of a study of the exposition itself. There appears to be something mechanical and superficial about concluding for the element theory of feeling from the fact simply of the quantitatively considered immediacy of the affective judgment. In a sense the author, and Titchener also, would seem to make the feeling judgment so direct, so purely acquisitive functionally, so merely and separately a product of stimulation, as to forget, overlook, or deny its reactive, essentially active, emotive, or evaluating side altogether. Feeling, as we find by introspection when no particular theory is lurking near, genuine immediacy in the Bradleyan sense when Bradley is psychologizing,¹ is something more and something deeper than an extra item added to or in juxtaposition with the sense part of an ordinary experienced situation. It is different in kind in a deeper psychological sense than this analysis reveals. This quantitative sort of distinction above, this distinction of which time-relation tests are typical, is a literal sort of demonstration which is well enough, but which for any significance at all rests upon a profounder qualitative distinction. This latter distinction is tantalizingly assumed throughout all investigations of the type described above, which attempts laboriously to use in a new field a method originally devised for sensational data conceived by pre-supposition to be different.

Incidentally the reviewer is glad to note that the author (in a foot-

¹ F. H. Bradley, "On our Knowledge of Immediate Experience," *Mind*, N. S., No. 69, pp. 40-64.

note), and Titchener also, admit the existence of feelings without the pleasant-unpleasant dimension. It is interesting to speculate upon the theoretical modifications likely to follow concessions of this kind, such possibly, for example, as dimensionless feelings, since all of the other Wundtian possibilities have already been rejected by this school.

CHAS. HUGHES JOHNSTON.

UNIVERSITY OF MICHIGAN.

Time-Relations of the Affective Processes. TAIZO NAKASHIMA. *Psychological Review*, N. S., Vol. XVI., No. 5, September, 1909. Pp. 303-309.

The purpose is to test the time of affective arousal and the dependence of affective intensity upon the duration of the stimulus.

For colors the shortest time ranged from .84 to .98 second, and for geometrical figures, .72 to 1.08 second. The feeling arousal always followed the sensory arousal. The time sense was very definite and there were few cases of mixed feelings. The reaction time, for complex visual impressions also, proved to be somewhat longer than the cognitive reaction time, for simple colors it being considerably so. Practise shortened the time a good deal, although only a slight effect was noticeable for tones.

The conclusions from this testing of the time relations in the different sense departments, and their relations to the physiological expressions, are as follows: These judgments are as immediate as sensory judgments of psycho-physics; the time-relations, aside from being invariably longer, show relatively the same variability as those of sensory; the method of reaction is here similarly applicable; the time relations of affective to sensory processes vary in the different sensory fields, being close in the tactual and olfactory senses and remote in the color sense; and all vary with the variation of the stimulus.

The two ways of accounting for the longer time necessary for the affective arousal are sharply contrasted. One view is, that affection is a definite resultant of a sensation, sensation-idea, or idea complex, and that it is experienced after these complex processes have been consummated (his own interpretation of Münsterberg). The other view (Titchener's) is that the delayed appearance of feeling is due primarily to its lack of distinctness, reinforced by the further fact that affective judgment in complex sensory or apperceptive states is reached as quickly or more so than in the purely sensory cases. The author prefers the latter, although he does not deny affective clearness and affective attention.

The similarly possible directness of judgment in affective as well as in sensory process is stressed as a point of kinship. One feels that the author, maybe unconsciously, is nevertheless trying by some other than a direct exhaustive introspective method, or at most by a sort of nose-counting tabulation of answers, to establish qualitative likeness here. The way they objectively seem to act after measuring their tardy time of entering consciousness (as compared with sensory process), even if figures should show such absolute similarity or identity in behavior, would in no sense invalidate their absolute qualitative unlikeness.

We have certainly an introspectively clear case of qualitatively disparate and unlike mental elements or functions. It may be due to the reviewer's incorrigibly prejudiced attitude, but he can not see how the real feeling problem is illumined by these experiments, bolstered up as they are with such respectable methods; nor can the reviewer altogether agree with the interpretation of the data given, feeling, perhaps unwarrantably, that the writer too easily relegates what some of his subjects call "feelings" to his own category of "emotions" or organic or kinesthetic sensations, or that he too easily and too surely speaks of his own subjects' "alleged" qualitative differences in simple affections, or too lightly perhaps of "mixed feelings," by each one of which rejections hangs a controversy.

CHAS. HUGHES JOHNSTON.

UNIVERSITY OF MICHIGAN.

La mémoire affective et l'expérimentation. TH. RIBOT. *Journal de Psychologie normale et pathologique.* Juillet-Aout, 1909, IV. Pp. 289-292.

Külpe at the recent Philosophical Congress at Heidelberg reported certain results of an experiment planned to verify Wundt's tridimensional theory of feeling. These unpublished results constitute the topic for this discussion by Ribot.

Külpe's experiment consisted in gathering under defined conditions introspective data from seven subjects. The four series were as follows:

(1) The reproduction of certain sense feelings, (2) the reproduction of certain more complex sensuous situations, (3) the reproduction of certain types of complex emotions, and (4) the attempted placing in memory of the emotional experience aroused by unknown but expressive portraits.

The results were that four subjects could reproduce excitement and tension, but not pleasantness and unpleasantness. One thought that she experienced a genuine feeling image of pain or pleasure, but tended to confuse the reproduced excitement and tension with kinesthetic sensations. The other two occasionally evoked affective images, although in one case it was difficult to distinguish the feeling from its image. Both reproduced excitement and tension. All seven could reproduce pain and distinguish it from displeasure. Several thought that the affective image lost none of its original intensity. Recalled pleasantness and unpleasantness seemed to some very real, to others hallucinatory. In the fourth series the subjects did not appear to be able to refer the revived feeling to any particular former experience.

There is clearly nothing conclusive from these data. Ribot would naturally expect a greater range of individual differences than one would find in intellectual memory. Nevertheless he concludes that, very likely, as artists and designers can throw most light on the visual type of imagery, and musicians on the auditory, so we should possibly find distinguishable affective types who could possibly best clarify for us the workings of the affective recall. As is well known, Ribot believes both in the conservation

and in the reproduction of affective states. These may reproduce themselves spontaneously or we may voluntarily call them up. The former occurrence is the more common, the latter indeed being entirely unanalyzable by many persons.

The issue of the discussion, interesting as a Ribot theory, not as Külpe's interpretation of his own data, is apparently that we probably may add the affective as a memory type comparable in its specialized appearance in certain individuals to that of the motor or the visual in others. Whether we may speak in any intelligible sense of feeling imagery as we may of feeling recall the author does not discuss.

CHAS. HUGHES JOHNSTON.

UNIVERSITY OF MICHIGAN.

Studies from the Psychological Laboratory of the University of Illinois.

Vol. I., No. 1. STEPHEN S. COLVIN. Baltimore, Md.: The Review Publishing Co.

Two studies in animal psychology and three in the psychology of learning from the University of Illinois constitute the psychological monograph published by the *Psychological Review* in November, 1909. The volume is edited by Stephen S. Colvin, who also shares in the authorship of two of the studies—on the color perception of three dogs, a cat, and a squirrel, with C. C. Burford, and on the development of imagination in school children and the relation between ideational types and the retentivity of material appealing to various sense departments, with E. J. Myers.

The work with the animals differed from the well-known experiments of Professor Thorndike, in that the animals were kept as nearly normal and allowed as much freedom as possible. Colored paper was pasted on receptacles containing food that was accessible, paper of different colors on other boxes and pans into which the animals could not enter; certain colors were thus associated with satisfaction and other colors with failure. It was found that the animals could not only discriminate one color from another, though with considerable individual differences, but were able finally to "abstract" the colors, so that orange, for example, would be picked out by a dog immediately in whatever location or circumstances it might appear. Violet and green seemed to have less power, on the whole, of impressing these animals' minds than orange and blue.

The other study by Professor Colvin, made in collaboration with E. J. Myers, was an experiment on five hundred and twenty children in public schools and two hundred and seventy-five students of elementary psychology, with the aim of determining the predominant ideational type at different ages. Cards on which were drawn geometrical figures, nonsense characters and nonsense syllables were the material used. Later a story was read to the subjects in which auditory, motor, and visual ideas were artfully combined, in order to determine whether the visually minded would or would not remember more of the visual ideas, the motor minded of the motor ideas, and so on.

The children up to the age of ten were predominantly visualizers.

In later childhood, auditory imagery—that is, verbal imagery—appeared. Motor imagery, it appears, plays less of a rôle than has generally been supposed. A fairly definite correspondence was established between ideational type and kind of material—visual, auditory, motor, etc.—most readily remembered by each type. Incidentally it was found that the rapid falling off of the memory curve, established by Ebbinghaus and others, did not hold when the test of memory was the amount retained instead of economy in relearning, and when sense instead of non-sense material was used.

In an interesting study on “The Analysis of the Factor of Recall in the Learning Process,” Edwina E. Abbott shows that it is better in learning to pause at intervals and try to reproduce, rather than to go on uninterruptedly jamming the material in. The experiments were made both with nonsense syllables and words, and the subjects were five students from the psychological laboratory. The relative value of “jamming in” and recalling differs with individuals, those having strong “inner-speech” tendencies being more helped by recall than those who depend on reimagining.

Another study by the same author, “On the Analysis of Memory Consciousness in Orthography,” establishes certain facts concerning the mental processes of one who learns to spell words. The author found that her four trained subjects invariably substituted visual imagery for the heard letters when the words were spelled out to them, and that the heard letters were never recalled in terms of auditory imagery. Vocalization of the letters when words are presented visually is a hindrance; vocalization of syllables, a help. In general, whatever aids visual presentation, helps along the learning process.

A paper by F. Kuhlmann, on the “Development of Instincts and Habits in Young Birds,” gives the results of his observation of young birds in their nests from the time of hatching until they flew away. He recorded their rate of growth in weight, the time of appearance of various motor coordinations and the stages of the appearance of fear. A number of excellent photographs accompany the article.

ABRAM LIPSKY.

NEW YORK.

Über den Aufstieg der Druckempfindung. G. F. ARPS. Wundt's Psychologische Studien, Bd. IV. (1908). Pp. 431–471.

The article reports a series of experiments carried on in the Leipzig laboratory with the purpose of measuring the period of rise of a pressure sensation, in other words, of determining the relation that exists between the duration of a tactual stimulus and the intensity of the resulting pressure sensation. To this end two stimuli were presented to the subject successively, a normal stimulus of constant weight but variable duration, and a comparison stimulus of constant duration but variable weight. The rise of intensity of the sensation from the standard stimulus was measured by determining for each duration of the standard the weight of the

variable stimulus (of constant duration), which gave a sensation of subjectively equal intensity to that given by the standard.

The stimuli were two round pieces of ivory 0.5 cm. in diameter, which were set down on the dorsal side of the first phalanx of the subject's first and second fingers, respectively. The rather complicated apparatus used was mainly electrical, though the comparison stimuli were given by means of a pneumatic pressure-balance. Experiments were made both by the method of limits and by the method of constant stimuli. There was no essential difference in the results obtained by the two methods. Two different standard stimuli were used, the first 134.2 gr., the second 58.5 gr., each with variable durations of from 13 σ to 1385 σ . There were also two comparison stimuli used, of 1 sec. and 500 σ duration, respectively, each with varying weights. Four subjects were tested, although the full series of experiments, using both standard stimuli, both comparison stimuli, and all four combinations of the time-space order, was carried through with only one subject. The steps between the various comparison stimuli were sufficiently small to enable the author to plot with relative accuracy the curve of the rise in intensity of the sensation from the standard stimulus.

The most important result of the experiments was to show that the rise of the sensation seems to be to a great degree independent of the intensity of the standard stimulus—at least for the stimuli here tested. The curves for both standards (134.2 gr. and 58.5 gr.) reach their maxima at about 980 σ and sink again slightly beyond that point. For all curves there is also a secondary maximum at 380 σ , followed by a drop at about 432 σ and then a comparatively steady rise to 980 σ , the absolute maximum. These results hold for all four subjects tested and for both comparison stimuli (1 sec. and 500 σ), though the absolute values of the results differ, of course, in the different cases.

The time-error and position-error are different for the several subjects. All subjects show a tendency to overestimate the standard; for example, a comparison pressure of 156.4 gr. and 1 sec. duration is judged equal to a standard pressure of 134.2 gr. and 980 σ duration. The author explains this overestimation as due partly to the fact that the standard received a "subjective emphasis" for the subject because of the sudden starting up of the electro-magnetic apparatus. Besides this, the attention seemed to the subjects to be directed especially to the standard pressure, and this fact may have caused it to be overestimated. There are several other points of interest, including fluctuations in the attention of the subjects during stimulation, effects of contrast and assimilation both between standard and comparison pressures and between succeeding comparison pressures, and the influence which the intensity of a pressure sensation had on its apparent duration. The author does not attempt an analysis of the different factors, physiological and psychical, which are involved in the main result of these experiments, the long rise of the pressure sensation and the apparently constant character of its curve, regardless of the intensity of the sensation.

HELEN D. COOK.

WELLESLEY COLLEGE.

JOURNALS AND NEW BOOKS

MIND. January, 1910. *Observations on the Case of Sally Beauchamp* (pp. 1-29): W. L. MacKENZIE.—"The most probable view is that 'Sally' was either the main mental system of a profoundly hysterical person ready to develop illusions, or delusions, out of everything, or a 'hypnotic state' unawakened, and having all the same mental qualities. When the 'real' Miss Beauchamp was formed, Sally 'goes back to where she came from'—a pathetic euphemism. Probably it is nearer the truth to say that, in going away, she 'awoke' from her 'deeper trance' and that she no longer wears into a state of super-suggestibility and delirium the new, if not the real, Miss Beauchamp. That the new Miss Beauchamp does not remember Sally's experiences as such is no proof that Sally's experiences are not playing apart in some other form or lying dormant as dispositions or traces that support the whole psycho-physical life, and may yet emerge if occasion should require." *The Present Phase of "Idealist" Philosophy* (pp. 30-45): F. C. S. SCHILLER.—Idealism overlooks "the essential selectiveness of thought." The ideal of knowledge as all-inclusive is false. Knowledge distinguishes and separates what is given together. It does not put together what is given as separate. Bradley illustrates the consequences of "verbalism" in logic, and of abstracting thought from the personality of the thinker, so that it ceases to be conceived as a human function. *On Evolutionary Empiricism* (pp. 46-62): H. S. SHELTON.—With regard to "*a priori*" principles, neither the apriorism of Kant, the empiricism of Mill, nor the postulate theory of Schiller exhausts the possible alternatives. The writer's theory admits "with the Kantians the apriority of certain ideas to the experience of the individual. With the empiricists it ultimately explains all knowledge in terms of experience. With the humanist it admits the importance of postulation and the progressive character of axioms and necessary truths. *Association and Æsthetic Perception* (pp. 63-81): J. SHAWCROSS.—The writer assumes "the generally received definition of beauty, considered as a quality of the object, namely, that it is the sensuous or material expression of an immaterial content." "Considered as a normal activity of the mind, association is indispensable to the appearance of any sensuous form as *expressive*; *i. e.*, unless certain associations are aroused in the mind of the beholder, no object, however beautiful in itself, can inspire in him a sentiment of beauty." *Critical Notices.* J. A. Stewart, *Plato's Doctrine of Ideas*: A. E. TAYLOR. William James (colleagues of), *Essays in Honor of William James*: HORACE M. KALLEN. W. R. Boyce Gibson, *The Problem of Logic*: S. H. MELLONE. C. and W. Stern, *Die Kindersprache*: W. H. WINCH. C. and W. Stern, *Erinnerung, Aussage und Lüge in der ersten Kindheit*: W. H. WINCH. A. E. Taylor, *Plato*: J. A. STEWART. Henry Jones, *Idealism as a Practical Creed*: J. H. MUIRHEAD. *New Books. Philosophical Periodicals. Notes.*

REVUE PHILOSOPHIQUE. February, 1910. *La logique de la contradiction (1er article)* (pp. 144-172): F. PAULHAN. — A study of the principle of contradiction in relation to intellect, feeling, and action, with special reference to its practical utility and value. *L'automatisme dans la criminalité* (pp. 144-172): MARRO. — All causes which put the mental organism in a state of inferiority tend to further the translation of motor images of criminal actions into relative movements. *L'art de l'éducation* (pp. 173-198): A. MARCERONA. — A study of the weaknesses of education and educators, with the appropriate remedies. *Analyses et comptes rendus*. Carveth Read, *The Metaphysics of Nature*: A. PENJON. Albert Steenbergen, *Henri Bergson's intuitive Philosophie*: J. BENRUBI. *Notices bibliographiques*. Anna Strong, *The Psychology of Prayer*: L. ARRÉAT. Giovanni Gentile, *Il modernismo e i rapporti tra la religione e filosofia*: L. ARRÉAT. C. Myers, *A Text-book of Experimental Psychology*: CH. LALO. H. Ebbinghaus, *Précis de Psychologie*: CH. LALO. W. James, *Précis de psychologie*: CH. LALO. B. Christiansen, *Philosophie der Kunst*: CH. LALO. H. Siebeck, *Grundfragen zur Psychologie und Aesthetik der Tonkunst*: CH. LALO. *Revue des périodiques*.

A Modernist. Letters to His Holiness Pope Pius X. Chicago: Open Court Publishing Company; London: Kegan Paul, Teubner, Trench & Co. 1909. Pp. xx + 280.

Boutroux, Emile. Wissenschaft und Religion in der philosophie unserer zeit. Leipzig and Berlin: B. G. Teubner. 1910. Pp. vi + 309. \$1.40.

Dewey, John. The Influence of Darwin on Philosophy and other essays in contemporary thought. New York: Henry Holt & Co. 1910. Pp. vi + 309. \$1.40.

Finck, F. N. Die Haupttypen des Sprachbaus. Leipzig: B. G. Teubner. 1910. Pp. 114. M. 1.25.

Foucault, Marcel. L'illusion paradoxale et le seuil de Weber. Montpellier: Coulet; Paris: Masson. 1910. Pp. 213. Fr. 4.

Gillette, John M. Vocational Education. New York: American Book Co. 1910. Pp. viii + 303.

Kisch, E. Heinrich. The Sexual Life of Woman in its Physiological, Pathological and Hygienic Aspects. Translated by M. Eden Paul. New York: Rebman Co. Pp. xii + 686. \$5.

Lazzati, Luigi. Liberté de conscience et liberté de science. Translated by J. Chamard. Paris: Giard and Brière. 1910. Pp. 453. Fr. 10.

Nietzsche, Friedrich. Thoughts out of Season. Parts I. and II. Part I. translated by Anthony M. Ludovici, part II. by Edwin Collins. Edinburgh and London: T. N. Foulis; New York: The Macmillan Company. 1910. Pp. xxxviii + 204, xix + 201. \$1.25.

Nietzsche, Friedrich. The Will to Power. Vol. I. Translated by Anthony M. Ludovici. Edinburgh and London: T. N. Foulis; New York: The Macmillan Company. 1910. Pp. xiv + 384. \$1.75.

- Nietzsche, Friedrich. On the Future of our Educational Institutions, Homer and Classical Philology. Translated, with introduction, by J. M. Kennedy. Edinburgh and London: T. N. Foulis; New York: The Macmillan Company. 1910. Pp. x + 170. 2s. 6d. \$1.25.
- Nietzsche, Friedrich. Human all-too-Human. Part I. Translated by Helen Zimmern. Edinburgh and London: T. N. Foulis; New York: The Macmillan Company. 1910. Pp. xiii + 407. \$1.75.
- Nietzsche, Friedrich. Birth of Tragedy, or Hellenism and Pessimism. Translated by William A. Haussmann. Edinburgh and London: T. N. Foulis; New York: The Macmillan Company. 1910. Pp. xxix + 194. \$1.25.
- Talbert, Ernest Lynn. The Dualism of Fact and Idea in its Social Implications. Chicago: University of Chicago Press. 1910. Pp. 52. \$0.53.
- Varisco, Bernardo. I massimi problemi. Milano: Libreria Milanese. 1910. Pp. xi + 331.
- Verworn, M. Die Mechanik des Geisteslebens. Leipzig: Teubner. 1910. Pp. 114. M. 1.25.
- Volkman, Paul. Die Eigenart der Natur und der Eigensinn des Monismus. Leipzig and Berlin: Teubner. 1910. Pp. 34. M. 1.

NOTES AND NEWS

At the meeting of the English Folk-Lore Society on February 16, the Rev. J. H. Weekes read a paper on "The Congo Medicine Man and his Black and White Magic," of which the following account is from the *Athenæum* for February 26:

"Mr. Weekes said that there were some fifty different *ngangas* in the Lower Congo, there being one for every known disease and every possible emergency that could occur in native life, and that they appear to practise both black and white magic. Any person, rich or poor, man or woman, who was sufficiently artful and energetic, could become a *nganga*. Mr. Weekes went on to describe at length some of the more important of the *ngangas* and their method of practising, including one who employed thunder and lightning for inflicting injury on his client's enemy, one who had control of the rain, and one who alone could perform the ceremonies necessary to enable a man or woman to remarry. If a family suspects that one of its members is under the ban of a *nganga*, the ceremony of "marrying" the fetish into the family is gone through to restrain its eagerness for harm. The power of the fetishes belonging to the *ngangas* resided in small bundles comprising various articles, according to the nature of the power to be exercised; small portions of these bundles were placed in holes in the head or stomach of the fetish when his aid was to be invoked. Mr. Weekes laid great stress on the fact that the fetishes were not worshipped. Their powers were feared and implicitly believed in—

even to the extent of leaving a man to die when once a *nganga* had declared his approaching death—but the fetishes were never bowed down to or praised.”

“LITTLE has hitherto been known of the language of the Yana tribe of Indians, who occupy part of Shasta County, in the northern region of California. This want has now been supplied by Messrs. E. Sapir and R. B. Dixon, who have contributed to the ninth volume of the Publications of the University of California a series of legends recorded from the lips of the two last survivors of those learned in the tribal traditions. One of these tales is a remarkable variant of the Prometheus type of legend, describing how Fox, Sandpiper, and Coyote stole the fire, how the world was burned, and how the thieves escaped in a basket which Spider hauled up to heaven by his thread. Another and less complete version of the tale has been published by Mr. J. Curtin in his ‘Creation Myths of Primitive America.’ The present collection of tales, recorded in two dialects, will preserve for the use of philologists a language which is fated before long to disappear.”—*Nature*, April 7.

At the meeting on April 4 of the Aristotelian Society, Mr. H. W. Carr read a paper on “Bergson’s Theory of Instinct,” of which the following abstract is from *The Athenæum* for April 16: “The philosophical aspect of the problem of instinct is concerned with the question whether instinct, as we observe it in examples such as ants and bees, is a form of knowledge, different from and comparable with intelligence, or whether it is a form of reflex action that may develop into or result from intelligence. M. Bergson holds that instinct and intelligence are two forms of psychical activity which are completely different from one another in the method of their action on inert matter; that they represent two powers which must be supposed to have lain together in the original impetus of life, and which appear to have been evolved at the expense of one another; and that they correspond to two forms of knowledge which we may distinguish in our own consciousness, viz., intelligence, which gives us our knowledge of the external world of solid matter, the subject-matter of the physical sciences, and intuition, which is a knowledge of life by life.”

THE Society for Philosophical Inquiry held a memorial meeting in honor of the late Dr. William T. Harris, formerly U. S. Commissioner of Education, at the George Washington University, on Tuesday, May 3, 1910, at 4:45 with the following program: “The Genesis of the Philosopher,” by Rev. Dr. J. Macbride Sterrett; “His Philosophy,” Dr. Edward E. Richardson; “Dr. Harris as U. S. Commissioner of Education,” Dr. Elmer Ellsworth Brown, U. S. Commissioner of Education; “Dr. Harris as Interpreter of Dante,” Rev. Dr. Sewall; “Impressions of Dr. Harris as Teacher of Philosophy,” Rev. Dr. U. G. Pierce.

MR. H. FOSTER ADAMS, fellow in the University of Chicago, has been appointed instructor in psychology in the University of Kansas.

PROFESSOR ARTHUR H. PIERCE, of Smith College, will assume editorial charge of the *Psychological Bulletin* in September.

MR. J. A. SMITH has just been elected Waynflete professor of Metaphysics at Oxford University, in place of Professor Case.

THE JOURNAL OF PHILOSOPHY

PSYCHOLOGY AND SCIENTIFIC METHODS

BORDEN PARKER BOWNE

BORDEN PARKER BOWNE, LL.D., professor of philosophy and dean of the Graduate School, Boston University, died suddenly on the afternoon of April 1. His death was entirely unexpected, for he was in active service, and he had even lectured as usual in the forenoon. The loss to Boston University, to the great number of men and women who had been his enthusiastic pupils, to the public that reads philosophy, and to the ecclesiastical circles in which he moved will be severely felt.

His Boston chair is the only academic position in philosophy that he ever held. Born at Leonardsville, N. J., January 28, 1847; graduated from New York University (then University of the City of New York), in 1871; for two years a student at the universities of Paris, Halle and Göttingen; then for a brief period assistant professor of modern languages at his *alma mater*, and also for a time a member of the editorial staff of *The Independent*, in 1876 he was called to the office which, after nearly thirty-four years of distinguished service, he has now laid down. The inherent attractiveness of his idealism, together with a brilliant style of exposition, which never lacked the grace of wit, brought throngs of students to his academic lectures. The same qualities have given his printed writings a wide circulation.

The keynote of his entire career as a philosopher was struck in his first published work, "The Philosophy of Herbert Spencer" (New York, 1874). If the style of this production betrays the exuberant audacity of youth, its argument, nevertheless, displays surprising keenness. It came at a time when Spencer's deduction of the definite from the indefinite, of consciousness from "nerve shocks," and of morality from the laws of the redistribution of matter, still seemed plausible. Bowne's interest in exposing the fallacies of this whole method was largely religious. The ancient faith that the world has meaning, and that this meaning can be known, was to be defended. To maintain human freedom against the purely

deterministic interpretation of natural law; to resist sensationalism, associationalism, and whatever else analyzes away the real unity of the mind; to show that the higher categories are the fundamentally real ones, and that the world can be articulately thought only in terms of personality—these were his central aims from first to last. He was purposely and frankly an advocate, not a dispassionate onlooker. He conceived philosophy, in the ancient and accredited way, as existing for the purpose of furthering the interests of life. This dominance of the practical explains in part his method, which was, as he himself said, the reworking of categories somewhat after the manner of Herbart. The result was not a system of speculative idealism but rather an idealistic interpretation of life like that of his revered teacher Lotze.

The same spirit and method went into his theological activities, which were by no means unimportant. His effort was always to think theological problems in terms of life, and as a consequence, though he was by no means a radical, he was commonly regarded as one. An unflinching defender of learning and liberty in the affair of his colleague, Professor Mitchell, a wit who could discomfit a theological adversary with a *bon mot*, a nature as religious as it was courageous, he has left his mark upon the ecclesiastical life of his time.

A list of his major philosophical publications is here appended. "The Philosophy of Herbert Spencer," 1874; "Studies in Theism," 1879; "Metaphysics," 1882, revised 1898; "Introduction to Psychological Theory," 1887; "Philosophy of Theism," 1888, revised under the title of "Theism," 1902; "The Principles of Ethics," 1892; "Theory of Thought and Knowledge," 1897; "The Immanence of God," 1905; "Personalism," 1907.

GEORGE A. COE.

UNION THEOLOGICAL SEMINARY.

THE SYSTEM OF VALUES

THE year 1909 was marked by the birth of a new philosophical discipline—the philosophy of values. In saying this, I do not, of course, mean to imply that the problem of values is in any sense a new one, but that during the past year for the first time the systematic description, classification, and explanation of values was entered upon quite independently by several of our foremost thinkers. Professor Montague's brief discussion of "The True, the Good, and the Beautiful from a Pragmatic Standpoint" appeared in April,¹ following presentations of diverse aspects of the general problem by

¹ This JOURNAL, Vol. VI., No. 9.

Professors Coe, A. W. Moore, and Tufts during the preceding year;² in May, two books of the first importance saw the light—Professor Urban's psychological analysis of *Valuation*, and Professor Münsterberg's metaphysical system of *The Eternal Values*; and finally, as the year drew to a close, and in recognition of this new interest, we had the "Value Number" of *The Psychological Bulletin*,³ containing Professor Münsterberg's *apologia*, and a further contribution and review by Professor Tawney, and introducing us to certain foreign discussions of the same topic. Surely such a wide-spread movement is significant, and the subject worthy of continued attention. In offering a further contribution to the discussion, it will be unnecessary, in view of the fact that the material recently presented is of easy access to all, to review it at any length in these pages, further than to state briefly the definitions and classifications of each for the purpose of comparison and criticism, and as a basis for further systematization.

I. RECENT THEORIES OF VALUE

Dr. Montague offers no definition of value as such, but describes his three types in terms of the adjustment of the organism to its environment. These three types are: (1) "the cognitive value of *truth*," yielded by the adjustment of "individual perceptions and judgments to the facts of the environment"; (2) "the conative value of *good*," yielded by the adjustment of "the facts of the environment to the desires of the individual"; and (3) "the affective value of *beauty*," yielded by "the spontaneous and unenforced adaptation of individual needs and environing facts to one another."

Dr. Münsterberg's treatment is epistemological. He defines value in terms of identity of content between two moments of experience, the second of which fulfills an overpersonal demand called for by the "pure will" in the first. His classification is the most thorough and systematic of all those which we have to consider. The four types of identity, and the corresponding types of value are: (1) the identity of every part with itself, yielding the logical values of conservation; (2) the identity in some sense of all the parts with one another, yielding the esthetic values of agreement; (3) the identity of that which changes throughout the process of change, yielding the ethical values of realization; and (4) the ultimate identity of all these values with one another, yielding the metaphysical values of completion. The further details of the classification will appear in the appended table. (Table I.)

Dr. Urban approaches his subject from the view-point of scientific psychology. He defines value in terms of a felt harmony between

² This JOURNAL, Vol. V., pp. 253, 429, and 517.

³ Vol. VI., No. 10.

the object and my subjective dispositions, which is relatively independent of my perceptions of existence and my judgments of truth. His classification is genetic rather than logical: economic, esthetic, and ethical values all make their first and embryonic appearance on the lowest level of "simple appreciation," but each develops and acquires new meaning during the progress of the "value movement." The following scheme sums up his treatment:

- I. Primary values: values that appertain to objects which serve immediately to satisfy certain fundamental instinctive tendencies.
 1. Values of simple appreciation, or sub-personal condition worths.
- II. Secondary or derived values: values which develop from the "pursuit, acquisition, and consumption of the primary objects," which are first "imputed, as additional values, to the primary objects," but later are abstracted from them, and so become objects of higher value.
 2. Values of characterization, or personal worths: those which "presuppose explicit reference to the ideal or concept of the person."
 3. Values of participation, or impersonal (rather, overpersonal) worths: those that are imputed to an act "because it is instrumental to certain social, over-individual ends, and satisfies certain impersonal demands."

Dr. Tawney defines value in terms of consistency, or the tendency of reflective experience to maintain itself throughout all its phases. Values are classified into three groups—(1) constitutive or presentative, including logical values; (2) imperative or motor, including ethical values; and (3) purposive, including esthetic and economic values—each of which may be viewed either as determined by habit or as reconstructed in experience. This classification, like Urban's, is genetic, though reminding us also of Münsterberg's distinction between naïve life values and developed culture values.

Finally, Dr. Orestano—whose book, "I Valori Umani," is reviewed in the *Psychological Bulletin* ("Value Number," p. 360)—defines value in terms of interest regarded as belonging to the object which produces it; and distinguishes five types—economic, intellectual, esthetic, religious, and moral.

II. CRITICISMS AND COMPARISONS

The fatal defect of all these classifications consists in a confusion between factual, ideal, and transcendental values—a confusion so

great as to involve in most cases the entire neglect of the last two groups. Only these last two may be called eternal or absolute values; and relativists, like Urban, Tawney, and Orestano, have consequently no room in their systems for them at all; but in the case of such an absolutist as Münsterberg, the charge must be one of confusion rather than of neglect. Thus, such values as those he calls "logical," and all the "ethical" values except those of "morality" and perhaps of "self-development," are phenomenal, and have to do with facts or events in time, whereas only the others are pure and timeless; on the other hand pleasantness, to which he denies the name of value altogether, has as much or as little right to that name as has the utility ("industry" value) or existence of any phenomenon in time.

The distinction between the actual and the ideal I have stated elsewhere⁴ in terms of attitude. Our attitude in the presence of facts I there described as dualistic—the "brute" facts of the actual world stand over against me to be taken as they are, apart from the question of their value for me at all; our attitude in the presence of ideals, on the other hand, is a monistic attitude—an ideal is an object which I regard as in harmony with my own nature, which manifests an underlying unity with myself. So, whatever "value" may mean, *factual* values—values asserted of facts in time—become *ideal* (and so timeless) so soon as, and so far as, our attitude changes from a dualistic to a monistic one—so soon as, and so far as, the object of my contemplation loses its aloofness and self-sufficiency, and becomes a part of myself, and I "absorbed" in my object.

Perhaps the source of the confusion can be got at best by a consideration of two quite distinct but often confused kinds of "truth" value. I have pointed out (in the article referred to) the sharp distinction between logical (scientific and philosophical) truth, which is derived mediately, through inference, and toward which our attitude is dualistic; and spiritual or religious truth, which is attained immediately, by imagination, and toward which our attitude is monistic. Each may be defined pragmatically, though in so far forth vaguely, the former as that which is fulfilled in our ordinary experience, and the latter as that which harmonizes with the demands of our spiritual nature. So far as we argue about truth, we are concerned with the facts of science or the realities of metaphysics; so far as we claim (note the verb: time does not permit of its defense here) immediate insight into truth we are concerned rather with the ideals of the religious imagination. Münsterberg's "logical values" have to do with truth in the lower sense of the term, and are factual values—the life-values are the truths of every-day experience, the

⁴ "Western Reserve University Bulletin," Vol. XII, No. 3.

culture-values are the truths of science. Truth in the higher sense includes what he calls the metaphysical values of "holiness"; and in the metaphysical values of "absoluteness" we have a return to logical truth, but on a higher plane—that of philosophy.

Urban's and Tawney's theories, excellent as they may be for the psychologist, yield confusion worse confounded to the metaphysician. This confusion, however, is due to the point of view, and that not being our own present point of view, we may pass on at once. Orestano's classification, finally, again, brings out clearly the distinctions between economic, logical, esthetic, ethical, and religious values, and binds them together by his theory of interest; but his list is an enumeration rather than a classification, as the distinction between the group of economic and logical values and that of esthetic, ethical, and religious values is lost; and is furthermore defective in its omission of what we shall refer to later as affective and transcendental values.

An arrangement of the most pregnant terms in each of the definitions above quoted or paraphrased, in the order of increasing intension, would give us—interest, adjustment, consistency, harmony, identity: the difference is one rather of terminology and degree of force than of essential meaning. Of the terms used, interest is the broadest and most colorless, but it is also vague, and weakens rather than strengthens the intension of the word "value." "Adjustment," the next in line of intension, however, is free from this objection, and may well serve as a nucleus of our definition and analysis. In any case, value is some kind of a relation between the object and a contemplating subject (Montague, Urban, Orestano), or between different moments of the experience of such a subject (Münsterberg, Tawney).

III. A CONSTRUCTIVE SYSTEM OF VALUES

Let us make our approach to a definition of value by way of the definition of life. Life is commonly defined as the mutual adjustment of internal relations and external relations, or of the organism as a whole to its environment as a whole; and whatever advances any of these adjustments, and so furthers the life-purposes of the organism, possesses value. Values in the broadest sense are of three general types—(I.) factual values, or values of adaptation, merely, which advance the adjustment of the organism to its environment, without producing an actual felt unity between them; (II.) ideal values, or values of harmony, which do produce such a felt unity between the organism and some part of its environment; and (III.) transcendental values, or values of perfection, which arise from a com-

plete harmonization between the organism and its entire environment. The facts of the phenomenal world yield values of adaptation, which become values of harmony as soon as these facts become transformed into ideals, and the attitude of the self to its object becomes monistic.

The values of adaptation are threefold (cf. Montague): (a) whenever and so far as in the adjustment of our organism to its environment our individual judgments are completely adapted to the facts of our environment, we have the logical value of truth; (b) whenever and so far as in this adjustment the facts of our environment are adapted completely to the desires of the individual, we have the economic value of utility; (c) whenever and so far as there is such a spontaneous and unenforced adaptation of individual needs and environing facts to each other as to produce an inner harmony in the mind, we have the affective value of agreeableness. Judgments, desires, and feelings may be particular and transitory, or universal and necessary—hence the distinction between the logically true, the useful, and the agreeable on the one hand, and the ideally true, the good, and the beautiful on the other: in the first case there is adjustment and adaptation merely, in the second case there is complete harmony, unity, and absorption.

The values of adaptation were classified according to the kind of adaptation which they arouse between the organism and the environment; the values of harmony are classified according to the nature of the harmonious environment or object. (a) Harmony in the physical environment—the world of the senses—favoring harmony within the organism, yields the esthetic value of beauty, which corresponds to agreeableness among the factual values; (b) harmony in the social realm, which is sensuous in its manifestations but transcends the senses in its inner reality, yields the ethical value of goodness, corresponding to utility among the factual values; (c) harmony in the spiritual or entirely supersensuous realm yields the religious value of truth, corresponding to logical truth among the factual values. To quote from the article above referred to, the beautiful “is a revelation in the sensuous world of that common nature which we find also in ourselves, and the same may be said with regard to the good in the social and the true in the spiritual environments. Whatever our senses acknowledge as in harmony with itself and with our own inner nature, our esthetic consciousness regards as beautiful; whatever deed of ourselves or of our fellow men tends toward a closer binding together of man to man, that our moral consciousness calls good; whatever in the supersensuous realm touches most deeply the essential needs of our spirits, that our religious consciousness acknowledges as true.”

Finally, the complete harmonization of all the ideals to one another produces the transcendental value of perfection. By the transcendental as distinguished from the actual and the ideal is meant the ultimate and complete as contrasted with the instrumental and fragmentary. No facts are absolutely unideal, no ideals are absolutely unreal: either the merely dualistic or the merely monistic attitude by itself is partial, and a completely rational and comprehensive attitude toward the world is won only by a thorough recognition and realization of the harmony of all reality, and of the duality-in-unity of our relations with it. But for man as he is at present constituted this attitude is not yet, and his nearest approach to it he finds in the life of the ideal, which is not by any means the completely rational life, but is a striving toward it in which is won an occasional fragmentary glimpse of the ultimate harmony—the only complete and final “vital equilibrium” between self and environment toward the attainment of which all else is merely instrumental. Further description, classification, and analysis of the values of perfection is a metaphysical task into which we can not at present enter.

Any discussion of values must include not only a description and classification of the object-values themselves—a task which is now completed so far as our present needs are concerned—but also an account of the relations between those values and the self—(1) of the process of determining those values (the process of evaluation), and (2) of the conscious purposive reaction of the personality to the values (the reaction-values); for each of these possesses the characteristic of being valuable.

Furthermore, the process of evaluation must always be considered in connection with its conditions and its results. The psychological condition, stimulus, or incentive of the evaluation process is in any case a feeling of adaptation, at least, between the individual and his environment; our attitude toward the evaluated object is twofold—(1) an intellectual attitude of recognition or acknowledgment, and (2) an immediate emotional attitude of appreciation; finally, the ultimate psychological result of the process is a general feeling of satisfaction—a sense of inner harmony produced by the evaluation process. We shall consider these various factors under each head in the following order: (1) the subjective psychological condition of the evaluation process, and the kind of satisfaction produced thereby; (2) the process itself, in connection with our attitude the evaluated object.

Evaluation of facts involves interest as its general psychological condition, interest being definable as a feeling of the importance of

the object for the individual; and the satisfaction of this interest yields pleasure as its psychological result. Pleasure is itself an inner harmony, but it is a harmony produced by some adaptation between the individual and his environment; as soon as the inner harmony comes to correspond to an outer one, pleasure becomes transformed into happiness, which is also an inner harmony, but produced by an outer one—by some harmony in the environment, and between the environment and the individual. Happiness, then, is the general psychological result of the contemplation of the ideal, whereas the general psychological condition of such contemplation is love, which is definable as a feeling of harmony between the contemplating subject and any ideal object.

The evaluation of logical truth is a testing of our judgments, and is attained through a process of ratiocination; the evaluation of utilities we call utilization, which is a process concerned in the satisfaction of desire; the evaluation of agreeableness consists in an exercise of the feelings, resulting in the enjoyment of the agreeable object. The evaluation of ideals always consists in an extended “enjoyment” process called contemplation; and the organ of esthetic evaluation we call taste, the organ of ethical evaluation conscience, and the organ of religious evaluation faith. The acknowledgment of *factual* values consists in a recognition of the adaptability of the organism to its environment, or of the environment to the organism, or of their mutual adaptability—appreciation is the immediate emotional response of the individual to the actual process of adaptation; the acknowledgment of *ideal* values consists in the recognition of an objective harmony among the various parts of the object—appreciation is the immediate emotional response of the individual to the actual process of harmonization.

Finally, reaction to these various object-values and evaluations yields a third set of values—values of organization. There are six varieties of these reaction-values in the factual realm—three forms of conscious reaction to the values in nature or the physical environment, and three forms of conscious reaction to the values in personality or the social environment. Conscious reaction to the physical environment yields the logical reaction-value of science (the organization of natural truths), the economic reaction-value of industry (the organization of natural utilities), and the affective reaction-value of play (in the sense, not merely of the spontaneous overflow of surplus energy, but of organized sport); conscious reaction to the social environment yields the logical reaction-value of history (the organization of truths about personalities), the eco-

conomic reaction-value of law (the organization of active social relations), and the affective reaction-value of friendship (pleasurable social intercourse). In the ideal realm, reaction takes the form not only of organization, but of realization or creation: realization in the esthetic field yields the reaction or organization value of art, in the ethical sphere of morality, and in the spiritual realm of religion.

Having constructed a skeleton system of values, we are now in a better position to clear whatever confusion may subsist in Professor Münsterberg's system, and to orientate his various values in relation to our revised scheme. His "logical values" we saw have to do with logical truth, and so are factual. His "values of unity" are not so much esthetic as hedonic, or rather a mixture of hedonic and ethical; except "harmony," which is purely esthetic, and belongs with the next group. "Love" is harmony in the social sphere, "happiness" is harmony among the inner volitions; love is in itself ethical, but in its broadest sense it is the psychological condition, and happiness the psychological result of every contemplative experience. Münsterberg's "value of harmony" and "values of beauty" are esthetic in the true sense. His "ethical values" are partly ethical, but chiefly economic merely—"growth," "progress," "industry," and "law" are purely economic, and so merely phenomenal and temporal; "self-development" as he restricts it is also purely economic, and only "morality" is strictly ethical. His "values of holiness" refer to the spiritual world, and so are religious; and, finally, his "values of absoluteness" are transcendental.

I append the second table for the purpose of placing before us in orderly form the classification and correlation of the values.

TABLE I. PROFESSOR MÜNSTERBERG'S SCHEME OF THE ETERNAL VALUES

	Conservation. Logical Values.		Agreement. Esthetic Values.		Realization. Ethical Values.		Completion. Metaphysical Values.	
	Life.	Culture.	Life.	Culture.	Life.	Culture.	Life.	Culture.
	Existence.	Connection.	Unity.	Beauty.	Development.	Achievement.	Holiness.	Absoluteness.
Outer physical world. Nature.	Things	Nature	Harmony	Fine arts	Growth	Industry	Creation	World
Social world. Society.	Persons	History	Love	Literature	Progress	Law	Revelation	Mankind
Inner spiritual world. Selfhood.	Valuations	Reason	Happiness	Music	Self-development	Morality	Salvation	Overself

TABLE II. PROPOSED SCHEME OF VALUES

Object-Values.	Evaluation.				Reaction-Values or Values of Organization.	
	Condi- tion.	Function.	Process.	Satis- faction.		
Factual values— Values of adaptation.	Interest				Natural values of orga	Personal values nization
Logical values— Truth.		Judgment	Ratiocination	Pleasure	Science	History
Economic values— Utility.		Desire	Utilization		Industry	Law
Affective values— Agreeableness.		Feeling	Enjoyment		Play	Friendship
Ideal values— Values of harmony.	Love				Values of realization	
Esthetic values— Beauty.		Taste	Contemplation	Happiness	Art	
Ethical values— Goodness.		Conscience			Morality	
Religious values— Truth.		Faith			Religion	
Transcendental values— Values of perfection.						

J. S. MOORE.

WESTERN RESERVE UNIVERSITY.

THE PARADOX OF VOLUNTARY ATTENTION

THERE are two ways in which will is commonly supposed to be related to attention: first, in the voluntary reproduction of ideas; second, in fixing attention. Upon examination, it will be observed that this division is exhaustive of the ways in which will may be concerned with psychical processes. In so far as there are voluntary processes of knowing, these owe their beginning and continuance to attention. If it should be admitted that there is direct voluntary control of the feelings and emotions, such restraint would be primarily due to attention. Consequently in determining the relation of will to attention, we are really determining the relation of will to every psychical process.¹

With respect to the first of the two divisions just noticed, it must be said that there is no direct reproduction or recall of ideas.² In order to attend to an idea, it must already be before consciousness:

¹ See Stout, "Analytical Psychology," I., pp. 123, 124.

² V. Hartmann, "Phil. d. Unbewusst," I., p. 247. Fichte, "Werke," II., p. 567. Lipps, "Grundtatsachen," p. 49. Höffding, "Psych.," p. 23. Cf. Wundt, "Grundriss der Psych.," p. 294. "Die Associationen sind demnach Erlebnisse, die ihrerseits Willensvorgänge erwecken können, selbst jedoch nicht unmittelbar durch Willensvorgänge beeinflusst werden."

and in order voluntarily to reproduce it, it must be attended to. That can not be voluntarily attended to or reproduced which is not known, that is, which is not before consciousness. It is thus quite evident that in order voluntarily to reproduce an idea we have to know what it is which is voluntarily to be reproduced. But there is also no indirect voluntary reproduction of ideas. Münsterberg has shown that if a certain idea *a* be associated with another idea *b*, so that when *b* is recalled the recalling of *a* follows, there is no will involved in the process. But he continues: "If on the contrary I can not think of *a*, search for it in my memory, recall the place at which I saw it, remember the connection in which I heard it, and at length *a* emerges in my consciousness, it was plainly will which brought to light that which was sought."³ But plainly the latter process does not differ essentially from the supposed direct reproduction of the idea. The question is not why *a* emerges, but why I search for *a*. I search for *a* not arbitrarily, but because an idea *b* has suggested some idea or group of ideas associated with *a*, yet not identical with it. According to Münsterberg's statement it would follow that my will to recall *a* must be a will to recall something indeterminate. To will to recall it, I must know what it is which is to be recalled. It is the idea with which *a* is associated which causes the emergence of *a*. For example, some one is asked to name the seventeenth letter of the alphabet. Very few could answer the question offhand. The letter desired is not discovered by summoning it *ex nihilo*, from the "storehouse of memory," but probably by counting off the alphabet until Q, the seventeenth letter, is reached. Experience teaches that ideas thus successively associated tend to suggest one another, and when the first of a known series has been represented, ideas associated in temporal contiguity may be represented. There has been a will to recall the seventeenth letter, but not to recall Q, otherwise Q would be present to consciousness. A given clue⁴ has been used, but the last result is involuntary. If there were no clue, the search would be vain: and the idea Q has emerged not because there was a will to have it emerge, but because an idea already before consciousness was associated with Q. If then one can not voluntarily reproduce a single idea and so pay attention to it, so neither can one voluntarily reproduce the ideas which are linked or associated with the idea sought. The associated ideas must be already present before that with which they are associated has been attained. When the latter are found it is not a result of volition, but the effect of association. The associated ideas, as has been shown,

³ Münsterberg, "Die Willenshandlung," p. 64.

⁴ Cf. Stout, "Analyt. Psych.," I., p. 47. Bain, "The Senses and the Intellect," p. 560. Jodl, "Lehrbuch der Psych.," p. 505.

were not voluntarily reproduced, and so the missing idea has not been voluntarily reproduced.⁵

If inference and reasoning be generically distinguished from the process of association and suggestion, then, as Münsterberg says, the reasoning by which a missing idea is reached, sometimes appears to be more voluntary than mere reflection, that is, there is more effort and "inner activity." But here evidently the question is not whether an idea can be voluntarily reproduced, but whether the process of reasoning can be voluntarily begun, that is, whether attention can be fixed upon it. From any point of view whatever, the beginning of the reasoning process is conditioned by an act of attention, and unless it is continued automatically as is often the case, it must be continued by renewed processes or acts of fixed attention.

Strümpell, who admits that an idea can not be directly recalled by the will, says: "On the contrary, will can indirectly determine the beginning of the train of ideas, in that first of all a general idea serves to give a direction to the involuntary reproduction, which excludes every other."⁶ As an example he gives the general idea "Latin word" which reacts upon the unconscious psychical content, and as a result, a particular Latin, not a German or a Greek word rises into consciousness. Yet here it is difficult to perceive that the will accomplished anything. The general idea is present, it is not voluntarily recalled, and the particular word which it suggests is not recalled; otherwise it would be unnecessary to have the general idea before consciousness to effect the suggestion. Strümpell holds also that the stream of thought may be reversed voluntarily, may be interrupted or brought to a conclusion. Strictly speaking, however, the mere idea of changing or stopping the stream can not be voluntarily presented to consciousness, and its changes lie beyond the control of the conscious subject.

The objection so often made to the introspective method in general is particularly forcible with respect to the introspective observation of attention. It is objected that in introspection we necessarily change the natural qualities of subjective processes. The attentive process is altered and distorted by the very attempt to attend to it. When any one is directed to fix his attention, what he generally does is to try to apprehend and understand the object: but this is really a rumination and wandering over the field presented to him. Or he may fix his attention more narrowly, in which case a very artificial and really inattentive state of mind ensues. In many cases, instead

⁵ See Uphues, "Psych. des Erkennens," pp. 141, 150, and Schwarz's inconclusive reply, *Archiv für syst. Phil.*, N. F., III., 3. Lasson, *Zeitschrift für Phil.*, 89, *Beigabeheft*. Lipps, "Tatsach.," p. 50. Strümpell, "Grundriss," p. 252.

⁶ Strümpell, "Grundriss," pp. 68 f.

of attending to the given object, he attends or tries to attend to the act of attention itself. Thus what he was to observe is likely to be misapprehended, and the way in which he tries to observe it leads him astray. Lalande reports the case of one who has the power of reproducing auditive experiences with such intensity that they seem objectively real: "but if at the moment of their greatest intensity the observer *wills to pay* attention, the sound immediately becomes confused and disappears."⁷ It is possible that some observers are able to conquer these difficulties: but unless I am much mistaken, any one who says virtually: "I will try to discover what happens when I fix my attention," fails to fix anything. His mind passes from the object attended to, to his own feelings, and then back to the object or to ideas associated with the object or with his own feelings. Thus the natural characteristics of attention are distorted. Paradoxical as it may seem, the more one is conscious of making an effort to attend, the less attention there actually is: and the more absorbed the attention, the less consciousness there is of the process and the more consciousness there is of the object attended to. Most of the qualities which psychologists describe as belonging to voluntary attention can be observed only in these highly artificial experimental cases. Normal attention has no defined subjective characteristics. Having made this kind of preliminary *caveat*, I shall consider somewhat more specially this subject of voluntary fixed attention.

The term "stream of thought," "stream of consciousness" [*Verlauf der Vorstellungen*]⁸ denotes at once the succession and the continuity of phenomena. They correspond to what Kant called the *matter*, the *manifold* of sensation. Whatever opinion may be held as to the more complex problems of conscious life, there can be no dispute as to the existence of this flowing stream. It is not the passing of separate units like soldiers in procession. The progress of the stream is continuous and the objects which make up the stream are coterminous. They do not pass in single file, but rather are crowded together in companies, sometimes in mobs, yet for the most part according to the general laws of association.⁹ The term fixed attention denotes an interruption of this stream. It implies that the observer may intrude upon the passing throng of ideas and stop it even if its direction can not be changed. In fixed attention, the procession seems to halt in order that one of its detachments may be inspected. In what does this supposed arrest of attention consist?

⁷ Lalande, "Sur un effet particulier de l'attention," *Revue Phil.*, March, 1893, p. 284.

⁸ James, "Principles of Psychology," Vol. I., *passim*. Von Volkman, "Lehrbuch der Psych.," I., p. 64. Lotze, "Logik," pp. 3, 4.

⁹ Cf. Jodl, "Lehrbuch der Psych.," p. 110.

The diffusion of attention is regarded as the normal state: the fixation of attention as the exceptional. And in the intelligent adult this is the case. But in some cases the reverse is true. The physiological or psychological principle underlying every act of attention is of course inhibition in order to concentration—the shutting out of irrelevant matter in order to examine some central point. Such inhibition would be superfluous were not consciousness made up of reaction on a multitude of stimulations. That which distinguishes the highly developed organism is the complexity of these reactions and the necessity of inhibiting the irrelevant field of consciousness, that the light may be thrown intensely on a certain limited area. If the organism had to react only upon a single stimulus, attention would be the rule, and inattention the exception. For example, perfect attention is presented in catalepsy where consciousness is shut up to a single idea. Just before returning from a cataleptic to a normal state, the mind seems exhausted and unable to fix in attention more than a single object.¹⁰ But when we consider the variety and complexity of stimulus and reaction in our own organism, it is easy to see that a great part of the time our attention is unfixed. At any rate, inattention and fixed attention are at opposite poles, and either may be regarded as positive according to the individual disposition. All that I would here affirm is that the stream of consciousness can be neither voluntarily arrested nor changed. The cause of fixed attention is not volition. The process is due wholly to the nature of the object attended to and the sensations and feelings associated with our consciousness of that object. These propositions are not easily accepted, but careful analysis gives assurance of their validity. Such an analysis shows that attention has a peculiar rhythmic character: and that what appears to be fixed is really intermittent and discontinuous. The object of fixed attention is not held stationary at the central point [Blickpunkt] of consciousness. As Wundt says: “to retain an idea with the attention is, moreover, as experience shows, impossible: the fixing of attention is thus a process, not a permanent state. A constant impression can be retained only during the alternating moments of fixed and relaxed attention.”¹¹ The object appears to be fixed for a moment, but in reality it is no more fixed than the rest of the flowing stream of which it is a part. It may return again and again in alternation with other objects. This alternation would probably be regular and perfectly rhythmic,¹² were it not for the complexity of the influences

¹⁰ Janet, “*L'Automatisme psych.*,” p. 192.

¹¹ Wundt, “*Phys. Psych.*,” II., p. 284; “*Grundriss*,” p. 252. Cf. Jodl, “*Lehrb. der Psych.*,” p. 112.

¹² For general notice of the rhythmic organic processes, see Paulhan, “*Les lois de l'activité mentale*,” p. 381.

which are required to make attention effective. In attention, then, the stream of consciousness is not arrested: and the object of "fixed" attention comes and goes, differing only from objects unattended to fixedly in that it reappears. There are physiological as well as psychological reasons for this. Chief among the former is the influence of respiration.¹³ It is a matter of common observation that when we pay attention to an object, we "hold our breath": and that usually the recurrence of expiration and inspiration is an occasion for the readjustment of attention. This is instinctive and unconscious, and is common to many of the lower animals and to man. When the attention is closely fixed, there is the breathlessness of suspense; when it is relaxed there is the sigh of relief—changes which of course are associated with cardiac action. It need not be added that fixed attention is impossible when the respiration is abnormally rapid. Moreover, during the process of attention, there is an involuntary effort to hold the body motionless, which modifies the breathing.

Attempts have been made to establish a law for these phenomena of fluctuating attention. This is difficult to do, because the variety of interruption is so great. Even when allowance has been made for disturbing external causes, account must be taken of the subjective feelings which modify the attentive process.¹⁴

The physiological causes which condition and modify attention are complicated with psychological causes. Attention oscillates between the point to which it is first directed and ideas associated with the latter. These intrude and, as it were, "elbow" the attention away from the original *Blickpunkt*. The case is like that of a man who is trying to hold an upright position in a swaying crowd. The greater his care to maintain himself on a certain spot, the greater the probability that he will lose his equilibrium. It is only by partially yielding to the movement of his neighbors, and by enlarging slightly the extent of his station, that he can keep his footing. In attending to very minute objects, this oscillation and alternation may be observed more distinctly than when the area of attention is wider: for the more extensive the field, the more room will there be for the mind to wander. If I try to fix attention on the point of a pin, the point of the pin will at once suggest ideas associated with it, and my attention is diverted: but if the object of attention be a wide surface, the tendency to inattention is less. If I try to fix attention on the

¹³ See Philippe, "La conscience dans l'anesthésie chirurgicale," *Revue Phil.*, May, 1899, p. 509.

¹⁴ Delabarre, *Revue Phil.*, June, 1893, p. 639. J. E. Lough, "Proc. of the Am. Psych. Soc.," December, 1898. Stricker, "Studien über die Bewegungsvorstellungen," p. 25. Giessler, "Die Atmung im Dienste der vorstellenden Tätigkeit."

multiplication table, there is a comparatively wide field over which my mind can stray without getting away from the limits of the object. But if I try to fix attention on a certain number, then the longer the continuance of the process, the more considerable the alternation and fluctuation. The material to which one attends is, as it were, quickly exhausted. It is, however, the rapid dissipation of attention from the original point to ideas associated with it which seems to make the object more clear. When we attend to an unfamiliar object, it is difficult at first to determine its relation to other objects, to affirm *what* it is even after we are aware *that* it is. Whether this increasing clearness be attributed to apperception, to a reflective judgment or to association, it is not the *fixity* of attention which clarifies it, but rather the prolonged alternation between the object and ideas associated with it.¹⁵ It may be objected that the constant return of attention to the original point is effected voluntarily: but if fixed attention were under voluntary control, then whenever this return took place there would have to be a will to attend to that upon which attention had ceased to be engaged, a will to recall what was not present to consciousness. As has been proved above, this is impossible. It can not even be maintained that at the very beginning of the process there is a voluntary fixation of the process: for that means simply that we will attend to that which is already involuntarily an object of attention.

Külpe¹⁶ defends the proposition that the will can modify the course of ideas. His criticism is directed against the statements of Lipps,¹⁷ who holds that unconscious factors may determine the direction of our thinking. But the grounds of his criticism are unsatisfactory. He asks what difference there would be between conscious orderly thinking and the disorder of dreams, if the stream of thought were not determined by the will; and what would distinguish action with a purpose from the half deliberate, half automatic movement of our limbs? I confess that I can not see what the intrusion of the *will* would have to do with the matter. The explanation of the differences just referred to is quite independent of voluntary attention and voluntary movement. If will be characterized as Külpe affirms, chiefly by conation or effort [*Streben*], then the latter is quite as prominent in dreams as in waking. Indeed, the most distinctive symptom of nightmare is the fruitless effort of which the dreamer is conscious. Dreaming is disordered and fantastic not because we dream involuntarily: but, on the contrary, that which keeps our

¹⁵ On the origin of this oscillation, see Münsterberg, "Beiträge," II. Pace, *Phil. Stud.*, VIII.

¹⁶ Külpe, "Die Lehre vom Willen in der neueren Psychologie," pp. 33 f.

¹⁷ Lipps, "Grundtatsachen," p. 49 f.

thoughts, in a waking state, from becoming dreams is the effect of influences which we have no part in producing. As for the half automatic, half deliberate acts, they are distinguished from conscious deliberate acts by the presence of a purpose and the feelings which accompany it. But Külpe insists further that the "activity" of psychical processes is not unconscious, but conscious, and must have a consciousness as its vehicle [Träger]. The latter he finds in will. "What do I know of the unconscious?" he asks. "My consciousness is my actuality, in my consciousness I experience activity, and this inferred that the only interruption of the stream of consciousness must be caused by conscious volitions: but how do the latter happen to occur? Irrespective of any view which may be taken of the unconscious, it is irreconcilable with our every-day experience to suppose that each idea can be traced to its source—that its cause experience I call volition."¹⁸ From such a statement, it might be must have been an object of consciousness.

From the consideration of the general subject of voluntary attention, as given above, I conclude that neither in the recall of an idea nor in fixing an idea which has been recalled, is it possible to prove that will as a special psychical process has any part.

It may be objected that the conception of the will here adopted is too narrow, and that psychical activity of every kind involves will or is an expression of will. To reply at length to such an objection would take me beyond the modest limits of this article. But to predicate will of all psychical activity is to presuppose that will has already been observed as a concrete datum of consciousness. Aside from the fact that it is very doubtful whether there is such a datum of consciousness, there seems to be no more reason to say that psychical activity is will than to say that psychical activity is knowing or feeling.

ARCHIBALD ALEXANDER.

GENEVA, SWITZERLAND.

SOCIETIES

THE FIFTH ANNUAL MEETING OF THE SOUTHERN SOCIETY FOR PHILOSOPHY AND PSYCHOLOGY

THE Southern Society for Philosophy and Psychology held its fifth annual meeting at Charlotte, North Carolina, on Tuesday, December 28, 1909. It met in conjunction with the Southern Educational Association. The meeting comprised two sessions, forenoon and afternoon. About one fourth of the members were in attendance. The range of the topics presented by the papers and the character of the discussions which followed marked this as one of

¹⁸ Külpe, *ibid.*, p. 34.

the most profitable meetings held by the society. The keen interest maintained throughout the meeting showed the advantage that is assured when the soliciting programs of other scientific bodies are not present to attract the attention of those members who journey to such meetings.

In discussing "The Functions of the Anterior and Posterior Association Areas of the Cerebrum," Professor Franz presented the status of our knowledge regarding cerebral localization, and reviewed the results of recent experimental, clinical, and pathological studies. On this basis he suggested an hypothesis as to the functions of these areas, which, for the most part, specifies that the frontal lobes are motor-associational, and the posterior sensory-associational.

The report of Professor Hill on "Tests made with a Modified Binet-Buzenet Esthesiometer" included a description of some simple devices convenient to carry on the work of ascertaining the general effects of practise upon the median line of the forehead in the discrimination of cutaneous stimuli. The new instruments were designed to eliminate the errors attendant upon the use of the compass-type of æsthesiometer, such as the increase of arm-tremor of the operator, the errors in readjustments, and the delays.

The communication of Professor Barnes on "Voluntary Isolation of Control in a Group" reported the results of attempts to obtain voluntary control of the movements of the ring finger without moving the other fingers, and thereby secure further information as to the conscious processes involved in the movements. The difficulties of proper instrumentation have delayed a completion of the experiments, but the results show that the voluntary isolation of control of movement in a group is a problem of attention.

Further information concerning the four raccoons already reported upon in Professor Cole's published paper "Concerning the Intelligence of Raccoons," was presented in the communication sent by Dr. Shepherd on "The Discrimination of Articulate Sounds by Raccoons." These six-months' old animals in the course of eighteen days appeared to be able to discriminate articulate sounds perfectly as involved in their names. The individual differences varied from two hundred and seventy to five hundred trials. In view of these differences, it was urged that experimenters use too few animals, and so draw from their results too broad conclusions.

In his paper on "The Relative Value of the Affective and the Intellectual Processes in the Genesis of the Psychosis called Traumatic Neurasthenia," Mr. Williams contended, after reviewing current opinions and citing illustrative examples in his own practise, that emotional shock has no power to perturb for long unless maintained ideationally.

In the preliminary report of his investigation of "The Consciousness of Meaning," Professor Ogden offered some results obtained by employing the method used at Würzburg. Four series of experiments, with four observers offer a variety of results. The reaction times in part are regular, and in part irregular. In all observers, imageless thoughts predominate over images, while the presence of images tends to be relatively independent of the concrete or abstract character of the stimulus word.

In his paper on "The Psychology of Prejudice," Professor Morse presented analyses which led to the rejection of the view that prejudice is the same as apperception. Prejudice is rather the refusal or inability to apperceive, and arises from an undue prepossession for or against an idea, an object, or an act.

In analyzing "The Concept of the Laws of Nature," Dr. Richardson's paper considered the special views of Pearson and Taylor and endeavored to show "that purposiveness was not inconsistent with mechanical or scientific calculation, and natural laws have an ontological significance."

In his presidential address, Professor Lefevre contributed to the observance of the Darwinian semi-centenary by tracing in an ample way "The Growth of the Concept of Evolution Among the Greeks." The logical necessity of evolution was shown in the growth of viewpoints from the early physiologists to Aristotle. The latter's concept of potentiality, development, and entelechy, or his teleological evolutionary idealism, was regarded as the logical consummation of the growth of the concept of evolution among the Greeks.

At the Wednesday forenoon session of the Southern Educational Association, the secretary presented a detailed account of the history and the work of the society.

EDWARD FRANKLIN BUCHNER.

JOHNS HOPKINS UNIVERSITY.

REVIEWS AND ABSTRACTS OF LITERATURE

Idealism as a Practical Creed: being the Lectures on Philosophy and Modern Life delivered before the University of Sydney. HENRY JONES. Glasgow: James Maclehose & Sons. 1909.

The title of this book is at once a paradox and a challenge. Idealism and practicalness! Can these be harmonized? "I always thought," says the ordinary man, "that if there was one thing more unpractical than another it was an ideal, and that if a man would be real he must come down from the hazy heights of dreamland and stand upon the solid earth of actuality." Nay, says Professor Jones, it is the idealist who is in touch with reality and the world of experience can only be rightly inter-

preted by its ideals. We make our own world and it is thought which legislates. And so idealism is a creed just because it is an interpretation of life. It is the key to nature and experience. Other keys have been tried, but they have proved inadequate. This is the only one which has been found to fit the lock, and give man entrance not only to the kingdom of heaven, but to the kingdoms of this earth as well.

Professor Jones is a Welshman and he has all the verve and intensity of the Celt. He is a seer not less than a thinker and his pages glow with color and his words strike fire as they come forth. The note of personal conviction constantly recurs. He utters here his assured belief—"the hypothesis of my life"—and he truly says that "no man has ever helped the world with what is to himself a 'may be' or 'perhaps.'"

The contents of the book were originally delivered as lectures before the University of Sidney, and in addressing the youth of a young country full of hope and enterprise his words not only take appropriately a practical shape, but aim at creating a spirit of patriotism and social responsibility. He begins his lectures with a suggestive quotation from Hegel's inaugural address at Heidelberg, to whose philosophy more than one sympathetic reference is made; and in his general tone he reminds us of Fichte's famous "Reden an die Deutsche Nation," which nearly a century ago aroused the enthusiasm of his countrymen. Professor Jones would remind this young Australian commonwealth that it is righteousness alone that exalteth a nation. Not military glory, not material prosperity, alone, valuable as these may be, but truth, spiritual ideals, great thoughts concerning man and God are "greater far than all these things." "I can form no higher wish for you than that it may be your destiny to try by actual experiment how far this faith of the idealists will stand the strain of a nation's practise."

The meaning which the author attaches to idealism is thus indicated. "Philosophy," he says, "is an attitude of mind rather than a doctrine." It is no finished, cut and dry formula. A final theory is not attainable nor is a fixed system to be sought. Experience changes and grows, and philosophy is experience becoming reflective, the mind or ego becoming conscious of itself and the world. It was Hegel who first gave to philosophy its modern form, its higher idealistic outlook. But this "way of looking at life" is confined to no school, it is the possession of all our noblest thought and greatest poetry.

If the author confines himself in these lectures to this particular form of philosophy it is because, as he believes, it is that "which is most in touch with our modern life and most akin to the poetry in which that life has found its best expression," and "the principles of this philosophy have entered deeply into the theoretic and practical life of our times." For, after all, ideas are the only agents in man's life. "Man is always pursuing *ends* great or small." "It is the *idea* of that which seems to him desirable, not his mere muscles or nerves, or bare sense and impulse, which carries him to his every act." But if idealism is the reflective or purposive view of life as distinguished from the irreflective and instinctive, it is no less the poetic or imaginative, as contrasted with the prosaic,

hence philosophy and poetry are really one in their aim. And indeed in another aspect of it, it is the religious view as opposed to what Martineau calls "the profane." In short, the conviction shared by all greatest minds alike "seems to me that of the unity and the spiritual purpose of the world—why indeed may I not call it the hypothesis of the Nazarene teacher as to the nature of God?"

In lectures two, three, and four, under the headings "First the Blade," "Then the Ear," "After that the Full Corn," our author works out the development of idealism in history. All history, he shows, is sacred, and right and truth and freedom are gradually being evolved. The civilization of mankind is the process of evolving the idea of freedom and he seeks to show how the spirit of freedom "has been influenced by the idealism which is itself the effluence and manifestation of that life." The freedom of the individual and of society is at first a blind movement towards an unknown good which gradually attains to consciousness and self-knowledge. The eastern peoples had no genius for statecraft. Among them, as Hegel says, only one, the monarch, was free. Freedom first began to dawn on Greece, but it took at the outset the form of imagination. With the rise of reflective thought among the sophists, and especially in Socrates, the product of the imagination was destroyed. The individual conscience claimed universal rights. Hence gradually the old institutions perished and humanity was launched on a new enterprise. But emancipation is only the "alphabet of true freedom" and this negative aspect reaches its full expression in the French Revolution.

A process of restoration must follow the epoch of criticism and disintegration. Gradually must we learn to reconcile ourselves "to the conditions under which we must necessarily live, without compromising either their authority or our own freedom." The citizen must find himself in the state and the state express itself through the citizen. Positive freedom is arrived at when morality is socialized and society is moralized. If Professor Jones speaks of restoration he is no champion of conservatism, nor does he advocate any resuscitation of old forms and old traditions. The new freedom restores the ancient world, but reinterprets it. The life of humanity is for him a growth, a progress, an evolution. But it is no blind or mechanical process. "The one-increasing purpose" in which one good custom yields to a better is taking place through the free action of the individual reason not less than the pressure of experience. Ideals do not come to us ready-made from without. They are forged in the laboratory of our own experience. They arise in the course of our traffic with reality. While, in one sense, we make them, in another they make us. They are therefore aspects of one continuous rational development in which are revealed the true character and purpose of man.

In a fine chapter, which may be regarded by way of illustration of this principle, he treats of the idealism of Wordsworth and Browning. Both in their own way pled for the spiritual interpretation of the world and of man. It is the unique quality of the great poet as of the great philosopher that in all things they see the whole, viewing the world *sub specie aeternitatis*. There is something inspiring in the view of life

inculcated by such choice spirits. They show us that there is one principle in the universe and that principle is spiritual. It is a splendid and heartening faith. But the question is, have they a right to it? Is it true?

This question naturally prepares the way for the two final chapters in the book, entitled "The Call of the Age" and "The Answer of Idealism," in which objections are met, and, after some subtle criticism of alternative solutions, the case for idealism is presented.

The last chapter is in one sense the most interesting, and for philosophy the most important in the volume, for in it lies the crux of the whole position. But to appreciate the cumulative force of this section it must be read as a whole.

Professor Jones has no faith in "hybrid theories" which avoid ultimate issues. Man is at his best only when he is in touch with ultimate issues. A theory can not stop short of unity, or take refuge behind its own incoherence. A God who is not infinite but limited is a God who is neither self-subsistent nor self-determined; a God above God, an absolute higher than an absolute is an impossible conception.

The objection of course has often been brought against the absolute of Hegel and all forms of the absolute idealism, that it stultifies human effort. If all is already achieved and man is but "thinking God's thoughts after him," is the world not an illusion? Professor Jones admits there can be no final reply of philosophy to this question. Philosophy has but to interpret experience, not to say what it ought to be or how it might be other than it is. It is not a finished world, if you like. God is working in us and through us. It is the part of knowledge to discover the order already existent in the world; and of a moral agent to reveal the ideality of the world, recognizing and obeying its laws and making himself their willing instrument. "The moral agent who can raise himself and his world to the condition in which they 'ought to be' must contain the possibilities of that change within himself and find them also in his world." "Man reveals himself by means of it (the process) and it reveals its nature by means of man." "Verily it is *man* who is in the making, and not the great universe nor his God."

We are "thrown back upon absolute alternatives." Professor Jones does not minimize the pathetic scene of human history, or attempt to call evil good. If we learn through error and find through evil that good is best, we must not overstep experience or flee to an imaginary realm where knowledge and goodness have no possible opposites. We will not take refuge in Mr. Bradley's absolute, in which all the differences of finite experience are transcended because finite predicates have lost their earthly significance. Good and evil are vitally connected and correlated. But correlation does not mean that both terms of it are of equal worth. The unity in which the opposites of experience meet is not a "tertium," separate and above them, but is one of those opposites themselves. "This view, I believe, is true." "The process of morality is a process of interpretation, of obedience, and of the appropriation of that which is, and which is deemed right and good." The two sides of the correlation are not merely abstract ideas. When a man speaks of "duty," "moral good,"

"right," he has already invested these conceptions with absolute authority and he has, so to speak, thrown his own personality into the balance. The "good" carries with it its own justification; it exists in its own right. And the recognition of it as good is the acknowledgment of its complete autonomy and self-sufficiency. "In obeying its behests the moral agent is aware that he is bowing to a necessity which is complete, whose claim upon him is absolute, capable of no compromise." "Man's conception of the good may be, and is, inadequate . . . , but at every stage it stands before him as absolute in its worth and authority, a necessity he dare not question and, in the degree to which he is moralized, does not desire to question, but to obey."

Without following our author further, we may say a stronger or more satisfactory plea for the idealistic interpretation of life has seldom been made. It is the plea of a man who has thought in earnest. It is no mere theory, it is, he believes, a working faith—"the sanest hypothesis that the mind of man has discovered as yet." Tried by all the tests which reason knows, it will be found to stand. It does better justice to the meaning of the world than materialism. The idea of order "works better" than disorder. "It is a hypothesis which distorts reality less; which finds reasonable room for more of its facts." If Professor Jones seems in these sentences to acknowledge the test of pragmatism, a perusal of his book will not fail to prove that he has no sympathy with the view that a theory is true simply because "it works best." But tried even by this test, these conceptions "will be admitted to be essentially constitutive of the experiences of our day as expressed in its greatest poetic, philosophic, and religious literature." This does not show that the conceptions are true, nor even that they have practical import and real value. In one sense the conception of the unity and spiritual nature of reality has very great value, "even though it should prove—as Comte thought—to be only the departing shadow of a religious superstition." "It has been an incomparable anodyne to a suffering world." But we can not conclude from this fact alone that the conception is true. It may be only the "noble lie" which leads to truth. "The argument from desire"—that these ideas must be valid which meet man's deepest wants—is not convincing. "It rests upon optimistic presuppositions which have themselves to be verified." There is, in fact, no way of testing any truth except by reason. This does not mean that only the logical understanding can apprehend the truth. Poetry justifies itself in other ways, and poetry may convince "all the more effectively because it makes no logical pretensions." "For Reason is no abstract faculty, but a name for the whole man, who is himself the living totality of his own experience, when engaged upon discovering the true and the false."

Man is discovering his own nature and where his true good lies, through much failure and at a great cost. He is coming to himself through his intercourse with his fellows and the world, and interpreting them also in the process; and the one discovery which he is making, it seems certain, is that he is spirit—a mind set on knowing, and a will

fixed on good and finding it, seek it where he will, nowhere except in the things of the spirit.

This hypothesis, Professor Jones says, is at least worthy of being tried. For nations and for individuals it can only mean good. "I can form no higher wish for you as a nation," he says to his hearers, "than that it may be your destiny to try this faith by actual experience"; and for himself he concludes: "Nothing would I so willingly or gratefully make my inheritance forever as the example of those who have made its light the guide of their faltering footsteps."

ARCHIBALD B. D. ALEXANDER.

LANGBANK, SCOTLAND.

The Idea of the Soul. A. E. CRAWLEY. London: A. and C. Black. 1909. Pp. viii + 307.

Readers of Mr. Crawley's previous books, "The Mystic Rose" and "The Tree of Life"—the latter a somewhat amusing attempt to justify (Anglican?) Christianity by an appeal to anthropology—will know what to expect in this present volume. They will find much new matter on a deeply interesting theme, many fresh observations, and abundant material for cogitation and discussion. But their gratitude for the author's independence and originality will be tempered with regret at his constitutional inability to set forth his ideas in simple and connected fashion. Mr. Crawley's statements are dogmatic to an extreme; he appears to carry always a scientific chip on his shoulder. He moves from one topic to another with such rapidity that the reader grows breathless in pursuit of the fleeting thought. The whole discussion has a vagueness and generality which, one fears, must have been borrowed from its subject-matter.

Mr. Crawley begins with Tylor's theory of animism as set forth in the classical "Primitive Culture." He acknowledges the value of that work as a starting-point for further inquiry, but thinks that Tylor was more concerned with the place of animism in the evolution of culture than with its origin as a philosophical conception. In Tylor's explanation "there is no psychological precision—the fact being that his explanation was completed before the development of experimental psychology" (pp. 3-4).

As a general criticism, Mr. Crawley argues that Tylor, and one may add Spencer and his followers, over-estimated the importance of certain mental states as direct or indirect sources of animism. The "trance" is pathological. "Visions," or hallucinations of sight, are pathological. "It is illegitimate to base a universal phenomenon on abnormal facts" (p. 13). Epilepsy, hysteria, delirium, and mania, if they might substantiate notions already existing of the separable soul, have themselves nothing to do with the origin of the soul-idea.

We come next to dreams. Mr. Crawley asks whether inferences from and about dreams are really sufficient to originate the idea of the soul. He considers the dream-theory "psychologically impossible" (p. 15). Figures seen in dreams are not "phantoms"; to the savage they are more real, sometimes even larger, than what is seen when awake. Yet the idea of the soul in all its stages is that of "an ethereal, rarefied, and often

miniature entity," inferior to the body in the qualities of solidity and extension. Dreams might corroborate such a notion; they could not give it birth.

Lastly we have the question, What causes sleep and death? According to Tylor, the savage answers, the "life" of the man, a thing separable from the body, and able to go away and leave it insensible or dead. According to Crawley the "life" notion is a *late* abstraction of primitive thought. The contrast between waking and sleeping did not impress the naïve mind of the savage. Primitive perception, again, noticed a difference between the sight of a living body and a dead, but did not proceed to explain it by supposing that its "life" had now left it forever. Indeed, the savage mourner treats his dead, for a time, as being still alive, just as the civilized mourner will refuse to believe that the loved one has really departed. And inference, when it does come, will not lead at once to the idea of a vital principle, thus emphasized by contrast. Concepts like "life," "force," "energy," are not abstracted by early thought from the things in which they appear.

So much for Mr. Crawley's critique of the anthropological theory of animism. That magnificent generalization is meeting some heavy assaults these days: frontal attacks like Crawley's directed against its psychological validity, side attacks like Lang's with his doctrine of "high gods" who never were souls at all; attacks in the rear like Marett's theory of "pre-animistic religion." Meanwhile the animists stand by their guns and await only the publication of Professor Tylor's Gifford lectures to leave their intrenchments and rise and smite their foes.

Mr. Crawley by no means confines himself to negative criticism. He has a very positive theory of his own. The idea of the soul is an "intellectual product" (p. 23) to be studied in savage languages rather than in primitive worship and ritual. It is the outcome of "elementary mental processes" (p. 25) in the lowest stage of intellectual evolution we can infer. Memory-images, chiefly visual in character, the stored results of his acts of perception, are what first gave man his notion of the soul of a thing. Thus the soul is neither a phantom nor a double; nor an illusion, since it is not mistaken for the reality; nor a shadow, since it has three-dimensional volume, form, feature, and color; it is not a ghost. "Spiritual existence is mental existence; the world of spirits is the mental world. Everything that can through perception lay the foundation of a memory-image can claim the possession of a soul, an existence in the spiritual world here and hereafter" (p. 78).

Having advanced this explanation of the origin of the soul, Mr. Crawley devotes a lengthy and valuable chapter to Pre-scientific Psychologies. In this he sets forth with some approach to completeness the doctrine of the soul in certain great ethnological areas such as Australia, Polynesia and Melanesia, Africa and America. Whatever be the value of the author's psychological disquisitions, this collection of evidence based on the latest and best authorities in English, German, and Dutch, is a distinct addition to the scanty literature of the subject.

The remainder of the book deals with such attributes of the soul as its

size, substance, and separability, its power of embodiment and transmigration, the notion of plurality of souls, the soul as a guardian-spirit, and so on. The author explains these and allied features on the basis of his theory that the soul-idea is the mental duplicate of reality. This supplies him with a broad generalization which he does not hesitate to apply to all spiritual philosophies from the rude imaginings of the savage to the latest and most advanced speculations on the absolute. At this point we may leave him to the consideration of the metaphysicians.

HUTTON WEBSTER.

UNIVERSITY OF NEBRASKA.

JOURNALS AND NEW BOOKS

REVUE PHILOSOPHIQUE. March, 1910. *Les tendances vives de la philosophie contemporaine* (pp. 217-248): A. CHIAPPELLI. - The tendencies of our day are unsystematic and express themselves in a radical empiricism or in objective idealism. *Les phénomènes qui commencent* (pp. 249-274): F. LE DANTEC. - An analysis of such phenomena as the realization of a new species, the beginning of a cancer, or a chemical process, with a view to establishing the meaning of stability in such cases. *La logique de la contradiction (2e et dernier article)* (pp. 275-303): F. PAULHAN. - No absolute contradictions exist, and it is the task of logic to develop relative contradictions and partial identities into fruitful harmonies. *Revue critique. La théorie des valeurs*: A. LALANDE. *Analyses et comptes rendus*. M. Landrieu, *Lamarck, le fondateur du transformisme*: H. DAUDIN. A. Wagner, *Les fondements de l'économie politique*: A. LANDRY. Headley, *Darwinism and Modern Socialism*: S. JANKÉLÉVITCH. Croce, *Filosofia della pratica*: S. JANKÉLÉVITCH. Prat, *Contes pour les métaphysiciens*: L. DUGAS.

Goebel, Karl. *Die Vorsokratistische Philosophie*. Bonn: Karl Georgi. 1910. Pp. 400. M. 7.50.

Renda, A. *L'Oblio, saggio sull' attività selettiva della coscienza*. Turin: Fratelli Bocca. 1910. Pp. viii + 229. L. 3.

Stumpf, C., und Menzer, P. *Tafeln zur Geschichte der Philosophie*. Dritte verbesserte und vermehrte auflage. Berlin: Verlag von Speyer und Peters. 1910. M. 1.50.

Volkelt, Johannes. *System der Aesthetik*. Bd. II. München: C. H. Becksche Verlagsbuchhandlung. 1910. Pp. xxii + 569. M. 10.50.

Vorträge; Naturgesetzlichkeit und Vitalismus, K. Siegel; Erkenntnis-kritik und Erkenntnistheorie, O. Ewald; Das Zeitproblem, A. Stohr; Lebenskraft oder Lebensstoffe? H. Prizbram; Darwins 100 Geburtstag, B. Hatschek; Der Zweckbegriff im psychologischen und erkenntnistheoretischen Denken, K. v. Roretz. Leipzig: Johann Ambrosius Barth. 1910. Pp. 98. M. 3.

NOTES AND NEWS

Science for May 6 contains the paper on "The Psychology of Social Consciousness implied in Instruction" read by Professor George H. Mead before the section for education of the American Association for the Advancement of Science, at Boston, in December, 1909. The following passage is taken from it: "The child in entering into his heritage of ideas and methods should have the emotional response which the boy has in a primitive community when he has been initiated into the mysteries and the social code of the group of which he has become a citizen. We have a few remainders of this emotional response, in the confirmation or conversion and entrance into the church, in the initiation into the fraternity, and in the passage from apprenticeship into the union. But the complexities of our social life, and the abstract intellectual character of the ideas which society uses have made it increasingly difficult to identify the attainment of the equipment of a man with the meaning of manhood and citizenship."

THE first volume to be published of the "Harvard Studies in Comparative Literature" will be "Three Philosophical Poets—Lucretius, Dante, and Goethe" by Professor George Santayana, of Harvard University.

PROFESSOR E. B. MCGILVARY, of the department of philosophy of the University of Wisconsin, was elected president of the Western Philosophical Association at the recent meeting at the University of Iowa.

MR. A. G. BALFOUR has revised his Romanes lectures on "The Criticism of Beauty" published from a shorthand report last November. The new edition is to be published immediately by the Oxford University Press.

PROFESSOR ERNST MEUMANN, of the University of Halle, has been called to the University of Leipzig to replace Professor Max Heinze.

DR. ARTHUR O. LOVEJOY, of the University of Missouri, has been appointed professor of philosophy at the Johns Hopkins University.

THE JOURNAL OF PHILOSOPHY

PSYCHOLOGY AND SCIENTIFIC METHODS

THE SCIENCE AND PHILOSOPHY OF THE ORGANISM¹

THOSE who wish to gain some insight into the biological philosophy known as "vitalism," or at least to become acquainted with the maturer views of one of its leading exponents, will find the present volumes of the greatest service. To English and American students, in particular, it will be a boon to have at last a presentation of Driesch's views in the English language. Most readers will probably find it sufficiently difficult to follow this writer's rather devious trains of thought, even without the added obstacle imposed by a foreign idiom. And we may regard it as a hopeful sign of the times that the number of these readers appears to be considerable.² It is surely a subject for congratulation when our working biologists are willing to pause in their labors long enough to make such a wide excursion into philosophy, especially when this particular brand of philosophy stands in flat contradiction to some of their most cherished dogmas. It is not uncommon to hear any effort of the scientific imagination dismissed with the contemptuous epithet of "metaphysics." But problems there are which force themselves upon our attention even though they baffle us, and any sincere attempt to face such problems certainly deserves praise. All this we may say without agreeing with any particular solution which may be offered us.

One of these volumes of Driesch's, comprising the first half of his Gifford lecture course, has already been reviewed in this JOURNAL by Professor T. H. Morgan.³ I have not found it possible, however, to deal with the second volume independently of the first, and accordingly I shall here consider the work as a whole. This procedure seems all the more allowable since the point of view of the two

¹The Gifford Lectures delivered before the University of Aberdeen in the years 1907 and 1908. By Hans Driesch. London: Adam and Charles Black, 1908. Vol. I., pp. xiii + 329; Vol. II., pp. xvi + 381.

²To the knowledge of the reviewer this work has already been used as the basis of "seminar" courses in the zoological departments of two of our leading universities.

³This JOURNAL, Vol. VI., No. 4.

reviewers differs sufficiently to render unlikely any considerable duplication of thought.

The work as a whole is divided into two sections, which do not, however, correspond with the division into volumes. Section A presents The Chief Results of Analytical Biology, while Section B discusses The Philosophy of the Organism. The first section comprises Part I., The Individual Organism with Regard to Form and Metabolism; Part II., Systematics and History, and Part III., Organic Movements. The second section comprises I., The Indirect Justification of Entelechy; II., The Direct Justification of Entelechy; III., The Problem of Universal Teleology, and IV., Metaphysical Conclusions. The further division of the work into subsections of various grades is altogether too intricate to be kept in mind by the reader, and we can not see that it serves any useful purpose whatever.

In Section A we meet with such biological data as the author offers in support of his thesis, and here it is, also, that we find his three "proofs" of vitalism. In commencing Section B, however, we part company with concrete reality, and wander through a rather bewildering maze, first of theoretical mechanics, and later of Kantian metaphysics, with incidental excursions into psychology and ethics.

Taking up, in the order of presentation, the three "proofs" of vitalism, we find as the first of these the existence of what the author calls "harmonious-equipotential systems." His argument is based chiefly upon some of the well-known phenomena of "restitution"—well known, it may be added, as a result of researches in which Driesch himself has played a leading part. During the cleavage stages of certain eggs, we may remove a part—indeed any part, within rather wide limits—without interfering with the production of a normal organism. Or we may readjust and misplace the cells at will, without preventing these from becoming organized in a normal fashion. Similarly, in the case of certain adult organisms, rather low in the scale of life, a new whole will be produced from a fragment of sufficient size cut out in any plane or from any part of the body. From experiments such as these, Driesch was years ago led to his now rather celebrated declaration that the "prospective value" of a cell in a developing embryo was a "function of its position." Such a complex, in which each portion may, in emergency, be forced to play any rôle in the future development of the animal, the author terms a "harmonious-equipotential system."

After defining a "machine" as "a typical configuration of physical and of chemical constituents, by the acting of which a typical effect is attained" (Vol. I., pp. 138, 139), Driesch grants that such

a machine "might very well be the motive force of organogenesis in general, if only normal, that is to say, if only undisturbed development existed, and if a taking away of parts of our systems led to fragmental development" (p. 139). But—and here comes the proof of vitalism—"there may be a whole development out of each portion of the system—above certain limits—which is, say, of the Volume V. Good! Then there ought to exist a machine, like that which exists in the whole undisturbed system, in this portion V also, only of smaller dimensions; but it also *ought* to exist in the portion V_1 which is equal to V in amount, and also in V_2 , in V_3 , V_4 and so on.⁴ Indeed, there do exist almost indefinitely many V_n , all of which can perform the whole morphogenesis, and all of which therefore *ought* to possess the machine. But these different portions V_n are only partially different from each other in spatial relation. Many parts of V_2 are also parts of V_1 and of V_3 and of V_4 and so on; that is to say, the different volumes V_n overlap each other successively and in such a manner that each following one exceeds the preceding one in the line by a very small amount only. But what then about our machines? Every volume which may perform morphogenesis completely must possess the machine in its totality. And now every element of one volume may play any possible elemental rôle in every other, it follows that each part of the whole harmonious system possesses any possible elemental part of the machine equally well, all parts of the system at the same time being constituents of different machines. A very strange sort of machine indeed which is the same in all its parts!" (pp. 139, 140).

"Therefore," our author concludes, "*there can be neither any sort of a machine nor any sort of causality based upon constellation underlying the differentiation of harmonious-equipotential systems*" (p. 141).

No attempt will be made to meet this or the next following "proof" of vitalism until the close of this review.

The second proof of vitalism is found by Driesch in the phenomena of heredity. The aggregation of reproductive cells, in this author's terminology, constitutes a "complex-equipotential system." This type of system differs from that just considered in that, while in the "harmonious" system each part plays but a *single* rôle (the latter depending upon circumstances), in the second type *complex* acts are performed by each single element. Since the germ-cells constituting the gonad are the most complex of all in the outcome of

⁴This argument is illustrated by a diagram showing how an indefinite number of portions, of equal or of different sizes, and overlapping one another in various degrees, might be chosen from the organism.

their growth activities, the latter represents "the clearest type of a complex-equipotential system which exists."

"Could such a theory," Driesch asks us, reverting to the "machine" theory, "irrespective of all the experimental facts which contradict it—could such a theory stand before the *one* fact, that there occurs a *genesis* of that complex-equipotential system of which our one single egg forms a part? Can you imagine a very complicated machine, differing in the three dimensions of space, to be divided hundreds of times and in spite of that to remain always the same whole?" (I., p. 225).

Passing mention is made of the phenomena of hybridization, particularly to those which we know as "Mendelian." The concept of "unit characters," which has been formulated by various biologists in explanation of the Mendelian phenomena, certainly has an atomistic (*i. e.*, a mechanical) flavor. But Driesch reasons quite otherwise: "What is shown, in the first place, by these discoveries is the importance of an arranging and ruling factor in spite of all units. The organism is always one *whole*, whether the paternal properties prevail or the more complicated maternal ones; in other words, all so-called properties that consist in the *spatial relations of parts* have nothing to do with 'units' or 'allelomorphs,' which indeed can not be more than necessary means or materials, requiring to be ordered" (pp. 232, 233).

Driesch's third proof of vitalism he finds in the field of organic movement, particularly in that of intelligent action. It rests upon what he terms the principle of "individuality of correspondence" between stimulus and response.

After discussing the rôle played by human speech, in the course of which some slight difference in the sound of a single word (*i. e.*, in the auditory stimulus) may result in a totally different course of action on the part of the person addressed, while two totally different sentences, perhaps in different languages (*i. e.*, widely different stimuli), may have the same effect, he says: "There can be hardly a clearer expression of the fact that it is the *totality in its specificity*, both of the stimulus and of the effect, that comes into account in acting, and nothing else. . . . The totalities of stimulus and effect have a 'meaning,' and their meanings do not at all depend on one another piece by piece" (Vol. II., p. 71).

To this argument an air of mathematical precision is given by a schematic presentation (pp. 70, 71) which seems worth reproducing here: "Firstly, change the stimulus from *a, b, c, d, e, f, g, h, i* into *a, b, γ, d, e, f, g, h, i*, and the effect may be transformed from *a₁, b₁, c₁, d₁, e₁, f₁, g₁, h₁, i₁* into *m, n, o, p, q, r, s, t*.

And secondly, change the stimulus from *a, b, c, d, e, f, g, h, i* into *α, β, γ, δ, ε, ζ, η, θ, ι, κ*, and the effect may remain *a₁, b₁, c₁, d₁, e₁, f₁, g₁, h₁, i₁*, in spite of that change.

Once more: "The dog, 'this dog,' 'my dog' is 'the same' stimulus, seen from any side or at any angle whatever: it always is recognized as 'the same,' though the actual retina image differs in every case. It is absolutely impossible to understand this fact on the assumption of any kind of preformed material recipient in the brain, corresponding to the stimulus in question, even if we intentionally neglect the fact that the material recipient would have been created *by* the stimulus in the individual's life: a recipient for the dog seen from the side would not suffice for identifying the dog from behind!" (p. 73).

An identical argument was offered tentatively (pp. 41-45) for some phenomena of instinct, although the author did not believe the case to have been wholly proved for these.

Another aspect of the same difficulty is stated somewhat later: "But it (the brain) *only* can store engrammata in the sense of given combinations of given elements, and therefore nothing but the psychical phenomena of simple recognition and of association by contiguity is immediately related to cerebral processes: it is absolutely inconceivable how the brain *qua* bodily brain could accomplish the new and free and 'logical' rearrangement of the elements of the engrammata, following the lines of individuality" (p. 98).

While any satisfactory attempt to answer this argument would lead us far into the field of psychology or of brain physiology, we may ask in passing how Driesch would account for the almost infinite complication of association paths in the human brain. Is it not here that we find the mechanism by which any element of our experience may be brought into association directly or indirectly with any other element? And how, indeed, is "meaning" to be explained except in terms of association? That several widely different stimuli, having the same meaning (*i. e.*, having certain associations in common), can bring about an identical response would seem, on the face of it, no more difficult to understand than that several very differently shaped keys can open the same lock. And conversely, that a slight difference in the stimulus (involving a change of "meaning") can bring about a complete change in the character of the response would have its parallel in the fact that a very slight modification of a key may destroy its adaptedness to one lock and render it suited to an entirely different one. These are confessedly very crude parallels, and leave out of account the almost infinite complexity of the mechanism which we are considering. But it is this complexity, we believe, and not any in-

herent impossibility, that makes a satisfactory formulation of the brain's action "absolutely inconceivable" at present.

Certain other lines of evidence are discussed by Driesch, though he makes no claim that these constitute independent proofs of vitalism. Such are the "equifinality of restitutions" and various phenomena of "adaptation," morphological and physiological. Under the first head he includes cases in which several different methods are at the disposal of the organism in its endeavor to repair itself after a given injury, the outcome, however, being the same in all cases. To the word "adaptation" he gives a much more restricted meaning than that adopted by many evolutionary writers, for he distinguishes between mere "specific adaptedness" and "adaptation." The latter term is reserved for useful responses, either structural or functional, to some external condition which is new to the organism in question.

Regarding the phenomena of selective permeability, which have frequently been urged as proofs of vitalism, since they seem to contradict the ordinary laws of osmosis and diffusion, Driesch takes a conservative position: "Nothing, indeed, is against the assumption that this organization may include factors which actually drive ions or compounds to the side of higher concentration, which indeed drive them by 'doing work,' if we like to speak in terms of energy; and these factors included in organization may very well be of a true physical or chemical nature." And here he adds an avowal of his mental attitude in approaching these questions: "We must hold to the so-called 'machine theory' of life as long as possible, we must hold it until we are really forced to give it up" (I., p. 187).

The phenomena of "immunity," however, he regards as offering far greater difficulties to the mechanistic point of view. Concerning one phase of the subject he says: "This phenomenon in particular—the production of *more* of the antitoxin or the 'precipitin' than is actually necessary—seems to render almost impossible any merely chemical theory of the facts" (I., pp. 207, 208). We may well query, however, whether such an over-production harmonizes any better with a teleological explanation.

If all these various facts are not to be explained by reference to the laws of physics and chemistry, how are we to interpret them? Driesch's answer constitutes the positive side of his teaching. His special solution is introduced tentatively, early in the course of his lectures. Its "justification" he leaves to a later stage. "Let us then borrow our terminology from Aristotle, and let that factor in life phenomena which we have shown to be a factor of true autonomy be called *entelechy*, though without identifying our doctrine with

what Aristotle meant . . . " (I., p. 144). A considerable part of the second volume is devoted to an endeavor to give this word a positive meaning.

We are told that entelechy is an "intensive manifoldness," *i. e.*, that its diversities are not temporal or spatial. Again, it "uses the conductive and specific faculties of the brain as a piano-player uses the piano" (II., p. 97). But entelechy, even of the sort which is responsible for intelligent actions, "has nothing of a psychical nature" (p. 138). The words "soul," "mind," and "psyche" are carefully avoided, since they would lead us into "pseudo-psychology." For Driesch, "the terms 'conscious' and 'consciousness' do not belong to that part of the Given which we call Nature; they belong to the Ego, to 'my' Ego, and to my Ego exclusively. It is not even possible to express with clearness what is meant by saying that there 'is' consciousness in any being in Nature" (II., p. 37). For " 'being' relates to bodily movements and changes, in that sense of 'being' which is the only starting-point of all science, the sense of 'being given to my Ego' " (p. 38). Accordingly, he proposes the "very neutral name of 'Psychoid' for the elemental agent discovered in action. 'Psychoid'⁵—that is, a something which, though not a 'psyche,' can only be described in terms analogous to those of psychology"⁶ (p. 82).

Now, "it is by no means difficult to get a good idea of part of the manifoldness concerned in 'psychoids' by a psychological analysis. In fact, we have merely to apply such concepts as perceiving, liking, judging, willing to a psychoid in a metaphorical manner in order to have a good *picture* of what is happening in every natural event where psychoids come into play" (II., pp. 139, 140).

But "the problem becomes very complicated as soon as we turn from the facts to the 'how,' as soon as we inquire the meaning of the primary faculties of those entelechies in which an historical basis does *not* play *any part at all*. We indeed are in a rather desperate condition with regard to the real analysis of the fundamental properties of morphogenetic, adaptive, and instinctive entelechies: for there *must* be a something in them that has an analogy not to knowing and willing in general—as it may be supposed to exist in the primary faculties of psychoids—but *to the willing of specific unexperienced realities*, and to knowing the specific means of attaining them. And we are by no means able to understand such a specified primary knowing and willing in even the slightest degree" (p. 142).

⁵It is clearly implied, though I believe nowhere explicitly stated, that the "psychoid" is to be regarded merely as a species under the genus "entelechy."

⁶In general, quotation-marks and italics are fearfully overworked by Driesch.

It is likely that the greater number both of biologists and of psychologists will agree in regarding the position of such a hypothesis as "desperate" in the extreme. In fact, it seems to represent more than anything else the weakness of the whole vitalistic position.

As has already been pointed out, "psychoids" appear to be conceived by Driesch merely as entelechies of a higher order. We are plainly told (II., p. 150) that "we may speak of an order concerning the rank of dignity of entelechies, comparable with the order of ranks or dignities in an army or administration. But all entelechies [in a given organism] have originated from the primordial one, and in *this* respect may be said to be one altogether" (p. 150). Again, after referring to "psychoids," in particular: "one might say that a higher sort of psychoid governs the main brain, a lower one the thalamus opticus, the cerebellum, the medulla, and so on," although, "it may well be true . . . that all motor entelechy is *one* and the same in one individual" (II., p. 105). In another place, on the contrary, he states that it is false to assume "that there are in space as many entelechies as there are individuals" (II., p. 317). Such passages suggest that even in the mind of Driesch himself the concept of entelechy is not without its contradictions.

Driesch is insistent in his claim that "in dealing with entelechy we are not dealing with anything psychical, or absolute or metaphysical: we are analyzing an agent at work in nature" (II., p. 259). Yet his method of characterizing this "natural" agent has at times a strong flavor of medieval scholasticism: "entelechy means the faculty of achieving a 'forma essentialis'; being and becoming are united here in a most remarkable manner: time enters into the timeless, *i. e.*, into the 'idea' in the sense of Plato" (II., p. 149).

Modern science is above all pervaded by the spirit to which, of late, the name "pragmatism" has been given. Is not this in its essence a mere insistence that when we speak we shall actually *mean* something? But what, in the presence of this touchstone, becomes of such a deliverance as that last quoted? Whether or not the whole conception of "entelechy" would not likewise dissolve into nothingness each reader must decide for himself.

Of great importance for an appreciation of Driesch's speculations are the author's attempts to define the relations of entelechy to matter and energy, on the one hand, and to mind on the other.

To begin with, he regards entelechy as in no way conflicting with the "concept of univocal determination" or with the principle "no effect without a cause." "The facts in the universe that originate in entelechy will be univocally determined as such whenever entelechy is such as it is, and entelechy is either of this or that determined kind" (II., p. 154).

"Entelechy may be aroused to manifestation by a change in bodily nature, such as is effected by fertilization or by some operation, or by some motor stimulus; and, on the other hand, entelechy may on its own part lead to changes in bodily nature" (p. 156). But entelechy is not energy: it "*lacks all the characteristics of quantity: entelechy is order of relation and absolutely nothing else*" (p. 169). It is thus not even allowable to speak of "a vital kind of energy." Such an energy "would be an energy *with differences in itself*, which is contradictory to the concept of energy" (p. 178). We may readily agree that the concept of "vital energy" has been the product of a good deal of loose thinking. Driesch has pointed out very clearly some of its weaknesses.

Much ingenuity is displayed by our author in his endeavor to avoid a conflict with the so-called laws of energetics. Entelechy, he tells us, is "unable to cause reactions between chemical compounds which never are known to react in the inorganic world. In short, entelechy is altogether *unable* to create differences of intensity of any kind.⁷ But entelechy *is* able, so far as we know from the facts concerned in restitution and adaptation, to *suspend* for as long a period as it wants any one of all the reactions which are *possible* with such compounds as are present, and which would happen without entelechy. And entelechy may *regulate* this suspending of reactions now in one direction and now in the other, suspending and permitting possible becoming whenever required for its purposes" (p. 180).

"Let it be well understood: we do *not* admit that entelechy may transform potentials into actual happening by means of a so-called 'Auslösung' in any sense. Entelechy, according to our view, is quite unable to remove any kind of an 'obstacle' to happening, such as is removed in catalysis;⁸ for such a removal would require energy, and entelechy is non-energetical. We only admit that entelechy may set free into actuality what it has *itself* prevented from actuality, and what it has suspended hitherto" (p. 180). And again: "Suspending the compensation of uncompensated differences of intensities among coupled kinds of energies and relaxing that suspension are in fact not acts that would require any amount of energy"⁹ (p. 185).

⁷ It is true that he later attributes this admission to "cautiousness" and tells us that "perhaps it will really become necessary some day to admit that entelechy not only suspends potentials, but that it creates potentials . . . and thereby creates energy" (II., p. 236).

⁸ He tells us, to be sure (II., p. 187): "In the formation or activation of ferments we hypothetically see the fundamental rôle played by entelechy." These ferments are not, however, "created" by entelechy.

⁹ This conception suggests, of course, the celebrated "demon" of Clerk Maxwell, and Driesch himself points out the analogy.

Whether or not such a process (*if it occurred*) would require energy, we must leave for decision to the special student of energetics. We may, however, call upon Driesch to tell us (1) whether nature offers any parallel to such a process as he has assumed; and (2) whether such a hypothesis is capable of being translated into terms of experience at all.

So far as we have been able to discover, no answer whatever is given to the first of these questions. Several attempts have, however, been made to answer the second, *i. e.*, to give us a "snap-shot" of entelechy at work. One "concrete" illustration is offered us on page 193 (Vol. II.): "A harmonious-equipotential system may consist of n cells, each of them composed of m different (chemical) constituents. In each cell every constituent is *able* to react with every other; in other words, there exist chemical potentials or affinities between each possible pair of constituents in each cell. So far the given 'diversity of elemental composition,' kept in mere potentiality by the suspending action of entelechy. But now entelechy proceeds to actuality, and it does so by enlarging the amount of 'diversity of distribution' in the system in question: *actually* out of *all* the *possible* reactions in each cell, only *one* is allowed to *happen* and this actual reaction which determines the 'prospective value' of the cell, is *different* in each" (p. 193).

Again, after endeavoring to explain how entelechy may affect the movement of a body (though itself unable to "create" motion), he further illustrates his position as follows: "The mechanical process we have imagined is represented very clearly by an inelastic body moving with a velocity V and entering during its motion into an elastic ball. It will move into this ball for a certain time with decreasing velocity, come to rest for a moment, and then move in the opposite direction with increasing velocity again: let this process be stopped at the moment when the inelastic body has traversed say one third of the path into the elastic mass. There is no contradiction to energetics in such an event, *provided, of course, that after the suspension has ceased the mechanical and energetic events continue their course from the point where it was broken*" (pp. 220, 221).

Here, as in H. G. Wells's story of "The Man who Could Work Miracles," all the effects of one miracle are abolished by another miracle, and nature resumes her old course, leaving nobody the wiser for her temporary aberration! In the field of philosophy, "common sense" is notoriously a sort of poor relation, whose opinions no one would offer by way of serious argument. Yet it will probably be conceded that any hypothesis must at least be viewed with suspicion which offers such an affront to our habitual modes of thought.

To the reviewer there would seem to be no essential difference

between this view of Driesch's and that by which Descartes endeavored to make plausible the interaction between mind and body—i. e., that mind (we may substitute entelechy) might affect the *direction* of the motion, though not its amount. But to this last view Driesch recognizes the force of the objection that “a certain amount of energy would be necessary for any ‘turning’ of a mass element” (II., p. 222).

Entelechy, we are told, “is affected by and acts upon spatial causality as if it came out of an ultra-spatial dimension; *it does not act in space, it acts into space*; it is not in space, it only has points of manifestation in space” (p. 235). And with commendable frankness, the author points out the analogy of this view “with some theoretical views that are advocated by so-called spiritualists.”

From his proposition that “entelechy may set free into actuality what it has *itself* prevented from actuality,” and nothing else, Driesch draws one curious corollary: “If entelechy always must *have done* something in order that it may do anything in the present and future, there can, of course, never be any real beginning of its acting, but this acting must be continuous. And this is what the fact of inheritance teaches us . . . a certain portion of matter that stands under the control of entelechy is handed down from generation to generation. And thus entelechy always *has* already acted!” (II., p. 181). The problem of the primary origin of life is regarded as an insoluble one (p. 262).

Driesch's conception of the relation of entelechy to mind has already been indicated in part: entelechy is totally different from mind, and yet can be understood only by the aid of an analogy with mind. His attempt to define the relation between the “psychoid” and the individual consciousness (which last was banished at an earlier stage of the discussion) carries us into an attenuated atmosphere which surely has little in common with that of the biological laboratory. After a subjective and objective analysis of the train of events which take place between an act of perception and the appropriate motor response, he is led to recognize “the most remarkable fact that certain processes which we are forced to regard as going on in my body may show a *gap* in the midst of them. . . . There is ‘reality’ between the two halves as far as states presented to consciousness are reality, but there is no reality between them as regards ‘my body.’ . . . But now there must be created some sort of *scientifically* [!] legitimate correlate to the intra-psychical series of the *subjective* point of view as advocated before. Here then we meet our old friend the ‘*psychoid*’ again, a sort of entelechy as a natural factor” (II., p. 282).

Ordinary psycho-physical parallelism Driesch will have none of; and indeed his reasons for rejecting this doctrine are stated with clearness and force. But, "now apparently our discussion ends in a sort of parallelism again! For there can be no doubt that the immediate conscious experience of the intra-psychical series is 'parallel' to the part played by the 'psychoid'" (pp. 293, 294).

And once more (this from Driesch the metaphysician, not from Driesch the biologist): "we may say that the intra-psychical series, or briefly 'the psychical,' 'the conscious,' is parallel to, or rather an epiphenomenon of a certain metaphysical happening (unexplainable in detail, but most certainly not resembling anything mechanical, not even by analogy) which interferes with the metaphysical correlate of so-called mechanical reality" (p. 294).

Psycho-physical parallelism may or may not be an accurate description of reality. But the invariable correlation of certain states of consciousness with certain physical changes—if, at least, this correlation is regarded in a purely temporal sense—is in any case conceivable. The hypothesis is capable of translation into the commonest facts of experience. Can as much be said for this new parallelism of "psyche" and "psychoid"?

Let us now consider Driesch's attitude toward certain other of the leading problems of biology and philosophy. Early in the lecture course, after a discussion of some of the phenomena presented by a developing egg, our author concludes: "Morphogenesis, we have learned, is 'epigenesis' not only in the descriptive, but also in the theoretical sense: manifoldness in space is produced where no manifoldness was; real 'evolutio' is limited to rather insignificant topics. But was there nothing 'manifold' previous to morphogenesis? Nothing certainly of an *extensive* character, but there was something else: there was an entelechy, and thus we may provisionally call entelechy an '*intensive manifoldness*.' That then is our result: not evolutio, but epigenesis—'epigenesis vitalistica'" (I, p. 144).

At a deeper level of the analysis he is led, however, to an exact reversal of the foregoing conclusion: "moreover, any *single* spatial occurrence induced or modified by entelechy has its previous *single* correlate in a certain *single* feature of entelechy, as far as it is an intensive manifoldness . . . our assumption leads to the consequence—strange as it is—that nothing really new can happen anywhere in the universe. *All happening is 'evolutio' in the deepest meaning of the word*"¹⁰ (II, p. 154). And the same point of view is restated

¹⁰ This phase of Driesch's doctrine has been ably criticized by Spaulding (*Philosophical Review*, July, 1909).

with equal emphasis on page 198: "Also in organic systems diversities are only created on the basis of preexisting diversities, even if external agents are excluded, . . . in short, differentiation is 'evolutio' in the ontological sense of the word."

It may not be fair, perhaps, to charge Driesch with any such inconsistency of thought as might be inferred from the passages quoted. That there are, however, glaring inconsistencies in his various statements regarding "evolutio" and "epigenesis" is self-evident. And this is but a single instance of a looseness of construction which pervades the whole work.

As regards the theory of "evolution" in the more modern sense of the word (not to be confused with the "evolutio" of the foregoing discussion), Driesch displays very little appreciation of the tremendous conquests which have so greatly enlarged the boundaries of our knowledge during the past fifty years. Whatever may be our estimate of "Darwinism" in the narrower and more technical sense of the word, we seldom hear a dissenting opinion as to the importance of the scientific awakening for which Darwin was in a large measure responsible.

Driesch prefers the term "theory of descent" to "evolution," since "there must be a real 'evolving' of something, in order that the word evolution may be justified verbally: and that is not the case in so-called phylogeny" (I., p. 250). The theory of descent explains the similarities among organisms, not the diversities (pp. 254, 255), hence it "leaves the problem of systematics practically where it was, and adds really nothing to its solution" (p. 256). If "so-called phylogeny . . . is based only on the pure theory of transformism, there is nothing explained at all. It was for this reason that the philosopher Liebmann complained of phylogeny that it furnishes nothing but a 'gallery of ancestors'" (p. 256). And even this "gallery," he tells us (not without justice) is largely mythical.

Passing from the theory of descent itself to the chief explanatory hypothesis, Driesch finds that natural selection is "to some degree self-evident"; but to regard it "as a positive factor in descent would be to confound the sufficient reason for the non-existence of what is not, with the sufficient reason of what is" (pp. 263, 264).

To Lamareckism Driesch grants more than do many recent evolutionary philosophers, even those of a less skeptical frame of mind. "Congenital histological adaptedness," he thinks, "may be regarded hypothetically as due to an inheritance of adaptive characters which had been acquired by the organism's activity, exerted during a great number of generations" (p. 290).

Both theories, however, are, in the opinion of our author, open

to the same fundamental objection: "the *contingency* of the typical organic form" is maintained alike by Darwinism and Lamarckism (p. 284). Thus, "Lamarckism of the dogmatic kind, as will easily be seen, only differs from Darwinism in this respect, that what according to the latter happens to the organism passively by means of selection, is according to the former performed actively by the organism by means of a 'judgment'—by the retention and handing down of chance variations" (p. 285). Thus one element "of dogmatic Lamarckism, invented with the express purpose of defeating Darwinism and taking the place of its fluctuating variability . . . is liable to just the same objections as dogmatic Darwinism itself"¹¹ (p. 282). For Driesch denies most strenuously "that *specific organization proper* is due to *contingent* variations, which accidentally have been found to satisfy some needs of the individual and therefore have been maintained and handed down. . . . The process of restitution, perfect the very first time it occurs, if it occurs at all, is again the classical instance against this new sort of contingency, which is assumed to be the basis of transformism. Here we see with our eyes that the organism can do more than simply perpetuate variations that have occurred at random and bear in themselves no relation whatever to any sort of unit or totality" (I, p. 286). The same opinion was offered earlier (p. 218), in especial application to the views of Jennings regarding the possible rôle of the "trial and error" principle in morphogenesis. We shall refer to this point again.

In any defense of vitalism, we naturally expect to hear much regarding "teleology." Driesch, indeed, devotes considerable space to an analysis of what is meant by organic teleology. The acts of other persons we regard as purposeful by analogy with our own acts. As regards the lower organisms, however, and of morphogenetic processes everywhere, "mere analogy would fail here to justify the application of the term, for, in fact, we can not imagine ourselves in the position of a newt repairing its foot: we are certainly unable to regenerate our own foot if it is lost in an accident, and even if our body could repair it, the process would probably go on in a so-called unconscious manner. We must then seek for a somewhat different criterion of teleology without leaving the analogy with our own acting quite out of sight" (II, pp. 131, 132).

Nor would it meet the point, he thinks, "to say that physiological

¹¹This agreement of the two theories in respect to contingency was pointed out by the present reviewer in a critique of Pauly's "Darwinismus and Lamarckismus" (this JOURNAL, August 27, 1908, p. 487). It was there shown that the much-anathematized principle of selection had unconsciously been made one of the foundation stones of the Lamarckian theory, or at least of Pauly's version of that theory.

and morphogenetic processes are teleological simply because they serve to form and to preserve the organism; for this argument, taken by itself, would not imply that there is something which *ought* to be formed and preserved" (p. 132).

Driesch's own idea of what is signified by organic purposefulness is herewith presented in his own words. The reviewer regrets his inability to abstract or to simplify this statement. He regrets his inability even to understand it in any real sense. He therefore cites the original text in the hope that other readers may fare better: "Every organic process indeed, morphogenetic or physiological, is 'purposeful' for the reason that it serves to form and to preserve a specific constellation which occurs in indefinite exemplars, and whose specificity has no other reason than the existence of a previous specificity of the same type; for this reason and no other is an organic process 'teleological.' For *only on this basis* is there an analogy with phenomena to which the predicate teleological *has already been given by our previous analysis*, viz., the phenomena leading to indefinite exemplars of specific constellations called machines, or objects of art and industry in general, that is, the phenomena of human *acting*" (p. 132).

At a later point in the work, teleology and contingency are contrasted. The latter, it is said, only acquires a clear meaning when opposed to the former. In reality, of course, nothing is contingent in the sense of being undetermined; "but as to events at this very point of space and at this very moment of time, philosophy may speak of the contingency of their happening here and now, whenever it is not possible to discover anything like a wholeness or a plan to which their local and temporal appearance is due. Contingency in this sense is the same as non-teleology" (II., p. 352). "Teleology is by no means 'causality seen from behind' as many of our dogmatic philosophers maintain" (II., p. 335).

After a discussion of "harmony in nature," he tells us (II., p. 353) that the common objection to a teleological explanation "is generally a sort of enlarged Darwinism." But, "we again object on our part that this presentment of the facts is powerless to do away with the simple truth that, Givenness being what it is, one thing does occur in *favor* of the other" (p. 354). If by this our author simply means that, however produced, harmonies do exist in nature, and that they may therefore be regarded as part of a universal plan, we must grant him his right to this opinion; but such a statement is in no way incompatible with a full acceptance of Darwinism. It is but a repetition of the time-honored declaration of the up-to-date theologian that natural selection is merely the way in which the Creator creates.

Taken as a whole these lectures of Driesch's are in some measure calculated to reassure those who have feared that modern biology has shaken the foundations of faith. In fact his general attitude toward the larger theological problems, though not dogmatic, appears to be rather surprisingly conventional and orthodox.

Although his "natural science" point of view forces him to be deterministic, an analysis of freedom leads to the usual "antinomy," and he concludes with the declaration that "freedom thus escapes analysis altogether, for analysis would mean subjection to necessity" (II., p. 305). Earlier he had told us that "the common opinion about life phenomena, which of course is neither analytical nor theoretical in any sense, claims that 'I' can move my body by my 'will,' and that every living being has a so-called 'soul' by which it can do the same. This view, suggested by ordinary unscientific experience, can now be said to have been transferred from a non-analytical and non-theoretical to an analytical and theoretical sphere, and to have been proved and psychologically justified in this sphere. In fact 'I' am a link in the univocally determined series of phenomena, so far as I 'will'; my volition is both influenced and influencing" (II., p. 285).

Thus, "vitalism is the highroad to morality: morality would be an absurdity without it. . . . To a convinced theoretical materialist, to whom his neighbor is a real mechanical system, morality is an absurdity" (p. 358). The reviewer finds the marginal comment "nonsense!" opposite the foregoing passage. This was not courteous, of course, but I can not refrain from citing that first impression.

As regards a future existence, the doctrine of entelechy has nothing to say. "What science knows about death is simply this: a certain amount of matter that was formerly controlled by entelechy becomes freed from this control, and then obeys the laws of physico-chemical causality exclusively" (II., p. 262). Science ought, we are told, to deal with the so-called phenomena of spiritualism "even at the risk of finding a mere chaos of defective criticism and actual fraud; but one single fact, positively established, would well repay the hard work of generations"¹² (p. 261). In the present temper of the scientific world, even such a conservative utterance as this requires courage. We can only express our assent in principle, though willing for the present to confine our own attention to more promising fields of exploration.

The "primary entelechy in the universe" lies at the apex of Driesch's edifice. "This *primary entelechy* would not have created absolute reality, but would have ordered certain parts of it, and

¹² Driesch regards telepathy as "established beyond all doubt."

these parts, therefore, would show a sort of non-contingent constellation whilst all other constellations of the elementalities of the universe would be contingent." This, he grants, "is downright dualism."¹³

Now "in this sense of a *primary entelechy of order of constellation in the world* . . . the concept of God therefore appears as an eternal task of science; unintelligible in the last resort, as all religions maintain, and only approachable by analogies, like all absoluteness" (pp. 370, 371). Such a view "does *not* contradict the concept of God as formed by the reasoning imagination. . . . But science, and the doctrine of entelechy in particular, most strongly contradicts any form of so-called 'pantheism.' Entelechy and matter are different and external to one another throughout" (p. 372).

Whatever else may be said of Driesch's speculative writings, we can not but grant that he has rendered us a service of a high order in compelling our attention to certain very real problems in the field of biological philosophy. He has also done us an important service in forcing us to realize how very hazy and unformed are many of our ideas concerning those very mechanical principles which we so stoutly affirm to lie at the foundation of all the phenomena of life. That Driesch himself has been able to offer as an alternative anything more than a pseudo-solution of these difficulties we do not believe. His "entelechy," even though he justifies it by the creation of a new "ontological category," remains an empty name. Based upon mind as a prototype, and only intelligible by analogy with mind, it still is something utterly different from mind. It merely does the same sort of things which mind does—or rather, which it would do *if it could*, for in reality, we are told, mind can do nothing at all. Only the "psychoid," the "natural" even though utterly inconceivable factor, can really act. How much simpler the panpsychic type of vitalism represented by Pauly! For him no necessity for a third unimaginable mode of existence: nothing but concrete acts of perception, judgment and will.¹⁴ Driesch's oft-reiterated assertion that entelechy is a "natural" factor does not help his case in the least. From the major premise

¹³ The same dualism is thus expressed with relation to the organic sphere: "even in the only field where dynamically effective individuality is known to us—in the biological individual—this individuality seems not to be concerned in the minutest details: the *single cells* of a tissue are *not* as such a really *essential* constituent of organization" (p. 367). Again: individuality (= entelechy) "interferes—or has interfered—with causality here and there, but not everywhere" (p. 368).

¹⁴ It is true that Pauly does not consistently live up to this standard, but lapses at times into the purest mysticism.

"everything that is is natural" may be deduced the "naturalness" of any figment of the imagination whatever. Have we not all listened to a similar justification of belief in miracles, not to speak of that latter-day witchcraft which, under various names, still flourishes in our midst?

Driesch expresses his "firm conviction that we can not avoid the admission of vitalistic autonomic agents possessing no experience . . . and yet endowed with *specific* knowing and willing." There must be something, in other words, which *foresees* (if, indeed, unconsciously) the end to be attained, and directs the organism toward its attainment. No piece of mechanism imaginable, he believes, could explain the phenomena in question.

The issue here involved is certainly a fundamental one. It is another phase of the same problem which confronted Darwin: how are "teleological" results to be explained without the need of invoking final causes? For, whether we consider the life of a race or of an individual organism, phenomena constantly come to view which *seem* like the manifestations of conscious purpose directed toward a definite goal. As is familiar to all, Darwin's special contribution to the subject lay in his formulation of the principle of natural selection, *i. e.*, the perpetuation of favorable variations, which were conceived of as "accidental" in the sense of being unrelated to the end to be attained.

Darwin's hypothesis has been subjected to a most searching criticism, and the general verdict seems to be that it is not in itself a sufficient account of the motive principle underlying organic evolution. But it is significant that every real causal explanation of evolution which has compelled serious attention has embodied, at least implicitly, the selective principle. "Mutation" needs selection in order to explain advance. Without it, we should have to fall back upon some postulate of "orthogenesis," which, of course, has no explanatory value at all, but is merely the restatement of our problem. The same may be said of the various attempts to account for evolution by "isolation." Even Lamarckism, which has figured historically chiefly as a rival theory, and an alternative to natural selection, is, in last analysis, based upon the selective principle.¹⁵ For unless we assume some inscrutable foreknowledge on the part of the organism (or its entelechy), as does Driesch, we must suppose that the responses of the latter are in the first instance random and non-adaptive. There is a survival (*i. e.*, retention by the organism) of these responses which satisfy a given need, and these are fixed in the race through heredity.

In fact, it would seem impossible to frame any purely mechanical

¹⁵ As has already been pointed out above (p. 322).

(i. e., non-teleological) explanation of those structures and functions which we call "purposeful" without postulating a selection of some sort. And the materials for this selection must, in the first instance, have been "contingent" in the sense of not having been determined in their nature by the need to be satisfied. The only alternative would seem to be a revival of the "special creation" hypothesis under a new name and a mysticism fatal to any further advance along these lines.

Jennings has recently extended his "trial and error" hypothesis (i. e., selection in its purest form) to the problems of organic regulation. According to this view, based originally upon the reactions of infusoria to stimuli, any interference or disturbance in the physiological processes of the organism "causes a change of behavior and varied movements, subjecting the organism to many different conditions. One of these conditions relieves the interference with the internal processes, so that the changes in behavior cease."¹⁶ Thus, if we behold merely the end results of this process, we may readily be led to believe that the organism actually *seeks* favorable conditions and *avoids* unfavorable ones. Now, if we substitute "metabolism" or "processes of growth" for the word "behavior" in the foregoing formula, we arrive at a conception which may be applicable to various processes of restitution and form-regulation. This application of his principle Jennings himself has not hesitated to make, though in a tentative way.

Mention must here be made of another hypothesis, in no sense contradictory to the foregoing, although emphasizing a different aspect of the problem. It is of interest as an attempt to formulate in some detail the mechanical working out of certain processes which have furnished some of the chief arguments for vitalism. In an extremely suggestive and ingenious paper,¹⁷ S. J. Holmes has called to his aid the analogy of symbiosis, in an attempt to explain the close interrelation and interdependence of the various parts of the body. "The harmonious functioning of an organism," he believes, "is mainly secured by a system of automatically acting checks which we may conceive to act in a manner more or less remotely analogous to the governor of a steam-engine or the forces which regulate the motions of the planets. . . . In these cases deviation from the normal is the cause which automatically sets up activities by which the normal is regained." So too, "the self-regulation of organisms may . . . be in a measure understood if we assume that their parts stand in a relation of mutual dependence such that the undue growth or functioning of any part is held in check by the reactions thus

¹⁶ "Behavior of the Lower Organisms," p. 343.

¹⁷ "Archiv für Entwicklungsmechanik der Organismen," 1904, Bd. XVII.

brought about by other, and especially the contiguous structures. If we suppose that the various cells constituting the body have each a different kind of metabolism, and that the products of each cell are in some way utilized by the neighboring cells, so that each derives an advantage from the particular association in which it occurs, we may understand, in a measure, how this checking may be brought about." And here an analogy is pointed out with the relations which obtain in "symbiotic" communities, such as those composed of animal cells and certain unicellular algae.

The cases of functional hypertrophy among higher animals are completely in harmony with such a conception. "Removal of one kidney causes an increased growth in the other kidney in response to the greater demand upon its activity. . . . The connection of these cases of functional hypertrophy with regeneration is intimate. Remove one of a pair of organs and its fellow increases in size. Remove a part of one of these organs and the remaining portion grows, forms new tissue, and regenerates the missing part." That such a process may be conceived of in chemical terms is suggested by some of the phenomena of "chemical equilibration." "The decomposition of compounds in solution proceeds until there is a definite relation established between the amounts of the old compounds and the new. If the chemical equilibration thus established is disturbed by the removal of one of these compounds more of that compound will be produced; and the more rapidly the compound is removed the more rapidly it is formed."

This hypothesis of Holmes's is closely related to that of Jennings (as Jennings himself has been quick to point out), though no explicit reference is made by the former to "trial and error." At one point, however, we are told that "cells which develop in the direction of the missing part receive those advantages which the symbiotic relation afforded the cells whose place they take. Differentiation in any other direction deprives them of these advantages and subjects them to other unfavorable conditions." The author avows his adoption of Roux's principle of the "struggle of the parts," though in a modified form. "We have conceived the parts of an organism to be engaged in a struggle for existence, but, as the parts are mutually dependent, the struggle leads to an adjustment to a norm instead of the elimination of some parts and the survival of others." Thus, although there is no selection of elementary parts for survival, there is assumed a furtherance of those activities of each which conform to the needs of the whole and a checking of those activities which do not conform to these needs.¹⁸

¹⁸ It is true that something more is assumed than the selection of *contingent variations* in the activities of the parts; but the conception is none the less mechanical throughout.

Holmes has obviously given us a mere sketch of a theory of form-regulation, as was indeed inevitable in the present state of our knowledge. I have dwelt upon it here at such length, inasmuch as it undoubtedly helps us to conceive in physicochemical terms certain phenomena which have long been the mainstay of vitalism. We can not say as much of the various references to crystal formation and other analogies with inorganic nature which have so frequently been offered in rebuttal.

Now it must be remembered that Driesch himself, in a passage already cited, has recognized and endeavored to meet the class of explanations which we have just discussed. "The process of restitution, perfect the very first time it occurs, . . . is the classical instance against this new sort of contingency. . . . Here we see with our own eyes that the organism can do more than simply perpetuate variations which have occurred at random." What we see with our own eyes, it may be replied, is only a series of visible stages in the process of restitution. We *do not* see the inmost morphogenetic processes, physical and chemical, by which this end is attained. How do we know that each step has not been, as Jennings suggests, the outcome of much blind groping on the part of the living units concerned? In the case of certain physiological "regulations" Jennings has pointed out that there is some evidence for such a process of gradual adaptation. It is quite possible, therefore, that in this particular instance, Driesch has raised an issue which we may put to experimental test. For any indication of a profiting by "experience," *i. e.*, of a shortening of the time required to effect a given regulative response, would harmonize well with the hypothesis that the response was at first effected through tentative steps.

As regards the phenomena of "intelligent" action, it is quite certain that the principle of selection (trial and error) may be applied with illuminating results. This has been pointed out by Bütchli,¹⁰ in his well-known critique of vitalism, and indeed the idea is rather a fundamental one in psychology. We must remember that the vitalist projects his own conception of "purposeful" human conduct backward throughout the whole realm of organic activity. Is it not possible that a more accurate analysis of the actual development of rational behavior in the human individual would have led to a very different conception of organic purposefulness?

In conclusion, it may be well to add that I do not regard the mechanical views here advocated as being in any sense more "materialistic" than those of Driesch. While the dualistic interpolation of non-physical causes in the physical chain of events has been de-

¹⁰ "Mechanismus und Vitalismus," Leipzig, 1901.

nied, nothing has been said in any way inconsistent either with a thoroughgoing idealism of this, that, or the other variety, or with the doctrine of psychophysical parallelism. These concepts, however, belong to metaphysics rather than to biology, and I believe that the issues raised by the vitalists may be met without having recourse to them.

FRANCIS B. SUMNER.

NAPLES ZOOLOGICAL STATION.

REVIEWS AND ABSTRACTS OF LITERATURE

The Right to Believe. ELEANOR HARRIS ROWLAND. Boston and New York: Houghton Mifflin Co. 1909.

Miss Rowland's book is an examination into the claims of religious belief to acceptance on the part of those who wish to believe all that is intellectually permissible, but nothing more. The book consists of six chapters and a short introduction. The introduction defines the object of the book; the first chapter defends the rationality of adopting religion as a working hypothesis while its truth is under discussion, and defines religion in a general way; the remaining chapters are devoted to a detailed account of the author's religious beliefs and to an attempt to establish their claims not only to be used as experimental working hypotheses, but to be accepted as truths: their right to belief.

What the book really contains is a religious creed for unimaginative persons desirous of being supplied with one, together with an argument for bringing their conflicting reason and desire into harmony.

As the title suggests, William James's religious philosophy forms the theoretical basis, and apparently also the practical inspiration of this little book, which seems indeed to have caught a breath of his spirit. In style it is direct, concise, and colloquial, and therefore eminently readable for the layman, for whom, among others, it is meant. It contains many keen and well-put observations on life and living, and is interesting in the sense in which all books presenting the personal experience of a lively mind are interesting. Its value as a contribution to religious philosophy, or, if it disclaim such a classification, to thought about religion, appears to me to be slight, and for the following reasons.

The argument, we are told, is addressed, not to the emotional believer or unbeliever, but to the mind which demands reasons for its affirmations and negations, and has in this case found none. It is to this doubter that the religious hypothesis is recommended as a working hypothesis, until grounds for its rational acceptance shall have been found; the practical grounds for its adoption in the interim lying solely in the greater satisfaction afforded from the ethical point of view, and evidenced by "general assent" (page 11). The doubting reader is inclined to let this argument pass unchallenged, first because to him, who by definition is asking for proofs, the practical attitude is uninteresting, and second, because religion, not having been defined, is still sufficiently vague to

lack even the amount of materiality necessary to permit it to conflict with anything else, or to produce any concrete results, satisfactory or otherwise. No sooner, however, has the reader, for the sake of continuing the argument, agreed to give the religious hypothesis the chance of proving the best working hypothesis, than religion is defined as "essentially" comprising five affirmations: the existence of God, the divinity of Christ, the freedom of man, the efficacy of prayer, and the immortality of the soul. The doubter, who has more or less reluctantly accepted his own religious ideal as a temporary guest, now finds himself embarrassed by a form of Christianity which, in the name of the author, refuses to be dislodged until its host shall have "disproved" the five affirmations in which it consists.

Here is truly an extraordinary situation. A perfectly arbitrary definition of religion has been made, this religion has been asserted on the authority of a few persons to be a "satisfactory" view of the world; this burden, and in addition to it the burden of proof, has been shifted to the shoulders of the poor reader, if he wishes to "disbelieve." As he is still "doubting," however, he turns hopefully to the next chapter, in which the author has promised to establish not only his opportunities, but also his right to believe.

Here he is confronted with the first religious affirmation, the existence of God (who is conceived as a disembodied personality, whose motive in creation was the desire for ultimate companionship), and is again challenged to "disprove" it. The author, undertaking to do so for the reader, shows that there is no evidence of either a sensational or a deductive character, that is, no *proof* in support of God's existence. She concludes, however, that as absence of proof is not disproof, and as, unless you disprove a statement you have no logical right to disbelieve it, you must now admit that God's existence has at least half a chance of being true. But, continues the author, if you have failed to find proof or disproof for religion, you have done something decisive in its favor, nevertheless; you have placed it outside the sphere of scientific treatment altogether; you have protected it once for all from the chance of being affected by scientific results; religion and science are now seen to be running on separate tracks. In this position outside the influence of science, the author finds much company for religion; laws of nature, ultimate concepts, and even such fundamental facts as other minds, the self, and the connection between mind and body, are cited as analogies, as mysteries without sense-evidence or logical necessity. "Our acceptance of God's existence depends, as does our belief in the real personalities of others and of ourself, on our desire to so believe where proof is impossible" (p. 41).

It would seem unnecessary to do more than present such statements in order to exhibit their falsity, but for the sake of clearness let it be said that the laws of nature are affected by scientific results, are tested and verified by sense experience, and are not only within the pale of science, but constitute the instruments with which science operates; that ultimate concepts are, even when not definable in other terms, arrived at by logical processes from the fountain head of perceptual experience; that

personality in self and others is a fact of experience or derived from such fact, as is also the connection of mind and body, and that it is in the interpretation of such experiences only that theories differ; and lastly, that even if the foregoing were not the case and there were no sense-evidence in favor of any of these beliefs, they would, nevertheless, form no analogies to religious belief inasmuch as they are held as matters of knowledge, and are dealt with by methodological and philosophical theory as matters of real or potential knowledge, to be clarified, interpreted, and tested by their relations of other facts and their scientific systematization. It remains the unique achievement of the author's religious "thinker" to have removed all knowledge not sensational in character from the sphere and influence of scientific method, to call it "faith" and run it along parallel tracks; in short, to split the world in twain and feel comfortable in it. "Now faith is the substance of things hoped for, the evidence of things not seen," says the book, "and the crux of the whole situation is, what do we hope for?" (p. 42). And yet it appears that after all it is not sufficient to hope for a thing in order to assert its reality, for when about to embark on a voyage of discovery of the nature of our hopes, the author once more undertakes to determine what kind of *evidence* would weigh the balances in favor of the existence of religious facts, and whether such evidence obtains. Finally, after following through many intricacies, the goal of this whole inquiry, the right to believe, is reached, and the evidence for the validity of religious affirmations is located. It is termed "qualitative" evidence, and consists in the God-experience of the "high" and "valuable" witness in his most "significant" and "best" moments. If such a man, provided he be otherwise normal, testifies to holding communion with a disembodied but real personality (God) and getting responses from him, who can contradict him, says our author (p. 52).

Thus it is the religious experience (feeling and its interpretation) on the part of the highest type of normal men of "all" generations that vouches for the existence of God, and for the other religious facts. As, however, no standards of evaluation are given by the author there obtains no necessary connection between highness or goodness and the form of religion here held; the connection remains accidental and permits us to give the same credence to the experiences of a good Buddhist, a good Atheist or a good Mystic as to those of a good Christian. Rare references are indeed made to what "the world as a whole" or "all religions" have "apparently" wanted, but they are based on no historical considerations whatever, and in the remaining chapters the point of view taken is explicitly that of the "average person's" and implicitly that of the Christian's religious demands. That "evidence" such as this establishes neither the actual universality nor the ideal validity of the author's religious beliefs must be obvious. One needs but to reflect that from the quantitative point of view the evidence to-day would be against and not for any form of Christianity; and that from a qualitative point of view, unless we make the test of a man's "value" consist in his faith in these particular tenets—which would beg the question—there have been and are

to-day innumerable good, great, and significant men, poets, artists, philosophers, founders of religion, heroes of one sort or another, who have believed otherwise, or not at all. The stream of time has flowed past the Christian era, past Spinoza and his age, Voltaire and his, to our own day encouraged and inspirited by such thinkers as Nietzsche, Ibsen, Maeterlinck, and Key.

The right bestowed by this book on the doubter searching for light, is his right not only to his individual religious sentiment, but to an individual interpretation of this sentiment in conformity with his individual hopes, and independent of scientific methods or results.

E. STETTMEIER.

NEW YORK.

JOURNALS AND NEW BOOKS

REVUE PHILOSOPHIQUE. April, 1910. *Une félicité artificielle* (1^{er} article) (pp. 329-357): P. JANET. - An interesting account of a case of hysterical anorexia lasting seventeen years and involving modifications of the personality. *La mort et l'immortalité d'après les données de la biologie* (pp. 358-380): DR. JANKÉLÉVITCH. - Biological considerations serve to show us, not the utility of death, but the uselessness of immortality. *L'existence et le fondement des lois du hasard* (pp. 381-401): RICHARD-FOY. - The terms "probable," "improbable," "almost certain" correspond to essentially metaphysical notions that spring from some mysterious instinct in man. *Influence de l'habitude sur les sentiments* (pp. 402-412): E. MARTIN. - A study of the relation of the two principles, (1) that feelings are weakened through exercise and (2) that feelings tend to create an increased sensibility to feeling by repetition. *Analyses et comptes rendus*. N. Losskÿ, *Die Grundlegung des Intuitivismus*: M. SOLOVINE. Garfein-Garski, *Ein neuer Versuch über das Wesen der Philosophie*: G.-H. LUQUET. Dr. J. Petersen, *Kausalität, Determinismus und Fatalismus*: DR. S. JANKÉLÉVITCH. Dr. Ludwig Stein, *Dualismus oder monismus?*: G.-H. LUQUET. Dr. A. Rausch, *Elemente der Philosophie*: G.-H. LUQUET. J. J. von Biervliet, *La Psychologie quantitative*: DR. J. PHILIPPE. M. Oeffner, *Das Gedächtniss*: L. PONTEVIN. Pierre Duhem, *Étude sur Léonard de Vinci*: L. ARRÉAT. Arthur Collier, *Clavis Universalis*: M. SOLOVINE. B. Spaventa, *La Filosofia Italiana nelle sue relazioni con la Filosofia Europea*: J. PÉRÈS. E. Bodrero, *Eraclito*: C. HUIT. N. Hartmann, *Platos Logik des Seins*: C. HUIT. Albert Görland, *Aristoteles und Kant bezüglich der Idee der theoretischen Erkenntnis*: C. HUIT. J. M. Baldwin, *Darwin and the Humanities*: G.-L. DUPRAT. *Revue des périodiques étrangers*.

REVUE DE METAPHYSIQUE ET DE MORALE. March, 1910. *Hasard ou Liberté?* (pp. 137-146): E. BOUTROUX. - A defense of contingency and freedom. The fourth lecture of the series recently delivered at Harvard University. *L'objectivité du principe de Carnot* (pp. 147-179): B. BRUNHES. - A careful statement of the meaning of the principle

of degradation of energy and the antinomy apparently existing between it and the mechanical theory of heat. A reply is included to certain criticisms of Le Dantec. *Il y a fayots et fagots* (pp. 180-184): F. LE DANTEC. - A frank acceptance of Brunhes's corrections that distinguishes two meanings of the principle of the degradation of energy: (1) the principle of the fall of temperature, (2) the principle of the diffusion of diffusible energy. *F. Rauch: sa psychologie de la Connaissance et de l'Action* (pp. 185-218): H. DAUDIN. - An appreciative study of this writer's work. *Études critiques. "Devoir," par B. Jacob*: L. WEBER. *Variétés. Pour la Bibliographie philosophique*: TH. RUYSSSEN. *Questions pratiques. Le procès de la Démocratie*: GUY-GRAND. *Supplément*.

Berkeley, Hastings. *Mysticism in Modern Mathematics*. New York, London, Edinburgh, Toronto, Melbourne: Henry Frowde, Oxford University Press. 1910. Pp. xii + 264. 8 s.

Bosanquet, Bernard. *The Philosophical Theory of the State* (Second Edition). London: Macmillan and Co. 1910. Pp. xl + 342.

Charmont, J. *La Renaissance du Droit Naturel*. Montpellier: Coulet et Fils; Paris: Masson et Cie. 1910. Pp. 218.

Dewing, Arthur Stone. *Life as Reality. A Philosophical Essay*. New York, London, Bombay, and Calcutta: Longmans, Green, & Co. 1910. Pp. x + 214. \$1.25.

Jones, Henry. *The Working Faith of the Social Reformer, and other Essays*. London: Macmillan & Co. 1910. Pp. xii + 305.

Levy-Bruhl, L. *Les fonctions mentales dans les sociétés inférieures*. Paris: F. Alcan. 1910. Pp. 461.

Pichler, Hans. *Ueber Christian Wolffs Ontologie*. Leipzig: Durr'sche Buchhandlung. 1910. Pp. 91.

Sorley, W. R. *The Interpretation of Evolution* (British Academy Proceedings). London: Henry Frowde. 1910. Pp. 32.

The Works of Aristotle, translated into English, J. A. Smith and W. D. Ross, Editors. "De Mirabilibus Auscultationibus," Lawrence D. Dowdall. Oxford: The Clarendon Press. 1909.

Von Uexküll, J. *Umwelt und Innenwelt der Tiere*. Berlin: J. Springer. 1909. Pp. 259. M. 7.

Walker, Leslie J. *Theories of Knowledge. Absolutism, Pragmatism, Realism*. New York, London, Bombay, and Calcutta: Longmans, Greene, & Co. 1910. Pp. xxxix + 696. \$2.75.

NOTES AND NEWS

BELOW are the names of the members of the Southern Society for Philosophy and Psychology, for 1910. The names of members of the Council are marked by an asterisk. The year in which the term expires is given in parenthesis.

Bailey, Superintendent T. P., Memphis City Schools, Memphis, Tenn.

- Baird, Professor J. W., Clark University, Worcester, Mass.
- *('10) Baldwin, Dr. J. M., 116, avenue Matignon, Paris, France.
- Barnes, Professor J. C., Maryville College, Maryville, Tenn.
- Benedict, President Mark K., Institute for Women, Sweet Briar, Va.
- Bierly, Professor H. E., University of Chattanooga, Chattanooga, Tenn.
- Brooks, Professor E. C., Trinity College, Durham, N. C.
- *Buchner, Professor E. F., Johns Hopkins University, Baltimore, Md.
(President).
- Burrow, Dr. N. T., Johns Hopkins University, Baltimore, Md.
- Carré, Professor H. B., Vanderbilt University, Nashville, Tenn.
- Coffey, Professor A. B., University of Louisiana, Baton Rouge, La.
- Day, Professor F. L., Randolph-Macon College, Ashland, Va.
- Dresslar, Professor F. B., University of Alabama, University, Ala.
- Dubray, Professor C. A., Marist College, Washington, D. C.
- Dunlap, Dr. K., Johns Hopkins University, Baltimore, Md.
- Eby, Professor F., Baylor University, Waco, Texas.
- *('11) Ellis, Professor A. C., University of Texas, Austin, Texas.
- Fant, Professor Anne, Mississippi State Industrial Institute, Columbus,
Miss.
- Farrar, Dr. C. B., Sheppard-Pratt Hospital, Towson, Md.
- *Franz, Dr. S. I., Government Hospital for the Insane, Washington, D. C.
(Vice-President).
- Furry, Dr. W. D., Johns Hopkins University, Baltimore, Md.
- Gault, Mr. R. H., Northwestern University, Evanston, Ill.
- Griffin, Professor E. H., Johns Hopkins University, Baltimore, Md.
- Gwinn, Professor J. M., Tulane University, New Orleans, La.
- *('10) Halleck, Mr. R. P., Boys' High School, Louisville, Ky.
- Hornstein, Mr. F., 1008 Fourth Street, Boone, Iowa.
- Harrison, Professor J. G., Mercer University, Macon, Ga.
- *('11) Hill, Professor D. S., Peabody Normal College, Nashville, Tenn.
- Hodge, Professor F. A., State Female Normal School, Farmville, Va.
- Johnson, Professor P., Bethany College, Bethany, W. Va.
- Jones, Professor E. E., University of Indiana, Bloomington, Ind.
- Keen, Mr. J. H., University of Texas, Austin, Texas.
- King, President C. B., Elizabeth College, Charlotte, N. C.
- Ladd-Franklin, Mrs. Christine, 527 Cathedral Parkway, New York.
- Lane, Professor W. B., Randolph-Macon Woman's College, Lynchburg, Va.
- Lefevre, Professor Albert, University of Virginia, Charlottesville, Va.
- McAllister, Professor C. N., State Normal School, Warrensburg, Mo.
- Martin, Mr. M. A., Richmond, Va.
- Messenger, Professor J. F., University of Vermont, Burlington, Vt.
- Meyer, Professor Max, University of Missouri, Columbia, Mo.
- Mezes, President S. E., University of Texas, Austin, Texas.
- Monroe, President —, North Carolina Medical College, Charlotte, N. C.
- Moore, Professor G. B., University of South Carolina, Columbia, S. C.
- Morse, Professor Josiah, Peabody Normal College, Nashville, Tenn.
- Ogden, Professor R. M., University of Tennessee, Knoxville, Tenn. (Secretary and Treasurer).

Pace, Professor E. A., Catholic University of America, Washington, D. C.
 Parrish, Professor Celestia S., State Normal School, Athens, Ga.

*('12) Payne, Professor Bruce R., University of Virginia, Charlottesville, Va.

*('12) Pearce, President H. J., Brenau College, Gainesville, Ga.

Purinton, President D. B., University of West Virginia, Morgantown, W. Va.

Rall, Dr. E. E., University of Texas, Austin, Texas.

Raymond, Professor G. L., George Washington University, Washington, D. C.

Richardson, Dr. E. E., 406 Seventh Street, S. W., Washington, D. C.

Ruediger, Professor W. C., George Washington University, Washington, D. C.

Sauvage, Professor G. M., Holy Cross Colleges, Washington, D. C.

Schmidt, Dr. Karl, Pequaket, N. H.

Shanahan, Professor E. T., Catholic University of America, Washington, D. C.

Sheppard, Dr. W. T., 511 G Street, Washington, D. C.

Smith, Professor S., Hampden-Sidney College, Virginia.

Smith, Professor W. B., Tulane University, New Orleans, La.

Steele, Professor N. M., Furman University, Greenville, S. C.

Sterritt, Professor J. MacB., George Washington University, Washington, D. C.

Sutherland, Dr. A. H., University of Illinois, Urbana, Ill.

Wardlaw, Professor Patterson, University of South Carolina, Columbia, S. C.

Watson, Professor J. B., Johns Hopkins University, Baltimore, Md.

Williams, Mr. T. A., 1758 K Street, Washington, D. C.

Woofter, Professor T. J., University of Georgia, Athens, Ga.

Yoakum, Dr. C. S., University of Texas, Austin, Texas.

MR. B. R. SIMPSON, of the department of psychology and education, Brooklyn Training School for Teachers, will engage in summer school work in the University of Georgia this summer. Mr. Simpson will offer two courses, one in "Educational Psychology" and one in "Principles of Education."

PROFESSOR LLOYD MORGAN, for twenty-two years Principal of University College, Bristol, Eng., and now Professor of Psychology and Ethics in the University of Bristol, has been presented with a quantity of plate and books in recognition of his services to higher education.

MR. L. W. COLE, formerly professor of psychology in the University of Oklahoma, more recently instructor in psychology in Wellesley College, has been appointed professor of psychology in the University of Colorado.

MACMILLAN AND COMPANY announce Professor J. G. Frazer's "Totemism and Exogamy" in four volumes.

DR. NOAH KNOWLES DAVIS, professor emeritus of philosophy in the University of Virginia, has died at the age of eighty years.

THE JOURNAL OF PHILOSOPHY

PSYCHOLOGY AND SCIENTIFIC METHODS

REALISM AS A POLEMIC AND PROGRAM OF REFORM. I

REALISM may be said to be at the present moment something between a tendency and a school. So long as it was recognized only by its enemies it was no more than a tendency. But war has developed a class-consciousness, and the time is near at hand, if indeed it is not already here, when one realist may recognize another. This dawning spirit of fellowship, accompanied as it is with a desire for a better understanding and a more effective co-operation, justifies an attempt to summarize the articles of a realistic creed. In the two papers of which this is the first, I shall confine myself to the realistic critique. There is a certain propriety in this because a new movement invariably arises as a protest against tradition, and bases its hope of constructive achievement on the correction of certain established habits of thought. Realism is as yet in a phase in which this critical motive dominates, and affords the best promise of initial agreement.

I propose to discuss three topics: I., General Philosophical Errors Defined on Realistic Grounds; II., the Realistic Critique of Contemporary Philosophy; III., The Realistic Program of Reform. The present paper will be devoted to the first of these topics.

I. GENERAL PHILOSOPHICAL ERRORS DEFINED ON REALISTIC GROUNDS

Methodological laxity has been the rule rather than the exception in philosophical procedure. At the opening of modern philosophy a definite attempt was made to reduce philosophical discourse to logical form. The attempt was abandoned after the time of Leibniz, but not until it had demonstrated the impossibility of expressing the traditional philosophy of the time in precise definitions and cogent deductions. The difference between analytical geometry and Descartes's "Meditations," between Euclid and Spinoza's "Ethics," and between the calculus and Leibniz's "Monadology," is unmistakable and most impressive. It is not a difference of degree of excellence, but a difference between success and

failure, between logical order and logical chaos. And since the time of Leibniz the gap between philosophy and exact science has widened. Philosophers have ordinarily been less skilled than Descartes, Spinoza and Leibniz, in physics and mathematics, and in the forms of reasoning which they require. They have also been less devoted than were these early reformers to ideals of clarity and cogency, less scrupulous and fastidious in both argument and assertion. Meanwhile exact science has made great strides, not only in extension, but also, and this is more to the point, in exactness. Physics, mathematics, and logic have so been renewed in their foundations, and refined in their superstructure, as to mark a new epoch in the history of method. It is small wonder, then, that philosophy falls far below the present high standards of correct thinking. It is more surprising that philosophers show so great an indifference to these standards even when, as is often the case, they are themselves expert students of logic. While one can frequently detect the effect of their philosophy on their logic, there is rarely evidence that their logic has strengthened and clarified their philosophy.

The general lack of logical form and rigor appears in both materials and structure—that is, in a lack of clearness and definiteness in fundamental concepts, and in a lack of consecutiveness in reasoning. These are the charges which Descartes brought against the philosophical tradition of his time, and they are scarcely less pertinent now. With these fundamental defects I do not propose to deal. Perhaps the most striking evidence of their presence is the impossibility of obtaining agreement among close students of the sources as to what an author means by his basal concepts, such as “substance,” “spirit,” “will,” “experience,” “matter”; or what he regards as the proof of his primary contention, such as, “the universe is ultimately consciousness.”¹ Philosophical systems can not be submitted to the sort of critical revision that is possible in the case of Euclidean geometry or Newtonian mechanics, because they do not even approximate systematic form. The terms lack definition, and the reasoning lacks order. Thus there are no present philosophical systems, so far as I know, that are not to some extent palpably guilty of the basal fallacies of equivocation and *petitio principii*. But it will prove more instructive in this present brief summary to deal with certain complex fallacies, or general errors, which are doubtless reducible to these and other elementary fallacies, but which have assumed a more or less stereotyped form in present philosophical literature.

¹ Rashdall, in “Personal Idealism,” p. 339.

1. *The Fallacy of Argument from the Ego-centric Predicament.*²—The “ego-centric predicament” consists in the impossibility of finding anything that is not known. This is a predicament rather than a discovery, because it refers to a difficulty of procedure, rather than to a character of things. It is impossible to eliminate the knower without interrupting observation; hence the peculiar difficulty of discovering what characters, if any, things possess when not known. When this situation is formulated as a proposition concerning things, the result is either the redundant inference that all known things are known, or the false inference that all things are known. The former is, on account of its redundancy, not a proposition at all; and its use results only in confusing it with the second proposition, which involves a *petitio principii*. The falsity of the inference, in the case of the latter proposition, lies in its being a use of the method of agreement unsupported by the method of difference. It is impossible to argue from the fact that everything one finds is known, to the conclusion that knowing is a universal condition of being, because it is impossible to find non-things which are not known. The use of the method of agreement without negative cases is a fallacy. It should be added that at best the method of agreement is a preliminary aid to exact thought, and can throw no light whatsoever on what can be meant by saying that knowing is a condition of being. And yet this method, misapplied, is the main proof, perhaps the only proof, that has been offered of the cardinal principle of idealistic philosophies—the definition of being in terms of consciousness. It is difficult, on account of the very lack of logical form which I have noted to obtain pure cases of philosophical fallacies. And this particular fallacy has so far become a commonplace as to be regarded as a self-evident truth.³ The step in which it is employed is omitted or obscured in many idealistic treatises. In others it is spread so thin, is so pervasive and insidious, that while it lends whatever support is offered for

²I have discussed this error more fully in this JOURNAL, Vol. VII., No. 1.

³There is doubtless a dim recognition of the invalidity of the argument in the plea which many idealistic writers make for its acceptance as self-evident. “The world is my idea,” says Schöpenhauer, “is a proposition which every one must recognize as true as soon as he understands it.” (“World as Will and Idea,” Haldane and Kemp’s translation, Vol. II., p. 164.) “To what purpose,” says Berkeley, “is it to dilate on that which may be demonstrated with the utmost evidence in a line or two?” (“Principles of Human Knowledge,” Fraser’s edition, p. 269). Cf. also Bradley, “Appearance and Reality,” p. 144. This self-evident or easily demonstrated principle never receives, however, at the hands either of these writers or of any other, an axiomatic formulation or a rigid demonstration. There is an implied hope that the reader will accept it without further ado, and allow the idealist to proceed with his idealism.

the cardinal idealistic principle, it is nowhere explicitly formulated. But the following scattering instances will suffice to illustrate its meaning. The first illustrates the error of redundancy, the others the error of inference from agreement.⁴

(a) "Presence in immediate experience is a universal character of all that is real, because it is only in so far as anything is thus presented in immediate unity with the concrete life of feeling that it can be given as a condition or fact of which an individual interest must be taken into account, on pain of not reaching accomplishment."⁵

(b) "Thus true philosophy must always be idealistic; indeed, it must be so in order to be merely honest. For nothing is more certain than that no man ever came out of himself in order to identify himself directly with things which are different from him; but everything of which he has certain, and therefore immediate, knowledge lies within his own consciousness."⁶

(c) "We perceive, on reflection, that to be real, or even barely to exist, must be to fall within sentience. . . ." "Find any piece of existence, take up anything that any one could possibly call a fact, and then judge if it does not consist in sentient experience. . . . When the experiment is made strictly, I can myself conceive of nothing else than the experienced. Anything in no sense felt or perceived becomes to me quite unmeaning. . . . You can not find fact unless in unity with sentience."⁷

(d) "Idealism, whether of a Hegel or a Berkeley, seeks to interpret the universe after the analogy of conscious life, and regards conscious experience as for us the great reality. Wisely enough, for in no other way can we know or find ultimate reality."⁸

(e) "Wir wissen nichts von einem Sein, das ist, ohne dass es als seiend beurteilt wird, und niemand weiss davon etwas, wenn er sich ernstlich fragt, denn wie sollte er wissen, ohne geurteilt zu haben, und wie sollte er urteilen, ohne dabei ein Sollen anzuerkennen? Wir können daher nicht sagen, dass so geurteilt werden soll, wie es wirk-

⁴ For further examples, cf. Berkeley, "Works," Fraser's edition, I., pp. 259, 406; Calkins, "The Persistent Problems of Philosophy," p. 123; Bax, "The Roots of Reality," pp. 35, 39; Fichte, "Vocation of Man"; Ferrier, "Institutes of Metaphysics," and the author's "Egocentric Predicament," in this JOURNAL, Vol. VII., No. 1.

⁵ A. E. Taylor: "Elements of Metaphysics," pp. 54-55. If the reader is curious to verify the general charge of logical laxity made above, he is advised to consult pp. 23-24 of this work, where he will find an "A" proposition simply converted, and an argument for idealism based on the assertion that a real object differs from an imaginary one through being a "psychical matter of fact."

⁶ Schopenhauer, *op. cit.*, p. 165.

⁷ Bradley, "Appearance and Reality," pp. 144-146.

⁸ Lindsay, "Studies in European Philosophy," p. 207.

lich ist, sondern wir müssen diesen Satz umkehren und behaupten, dass nur das wirklich ist, was als seiend beurteilt werden soll, dass also das Sollen und nicht das Sein das logisch Ursprüngliche ist."⁹

2. *The Fallacy of Pseudo-Simplicity*.—There is a disposition in philosophy as well as in common sense to assume the simplicity of that which is only familiar or stereotyped. This error has conspired with the error just examined to lend a certain plausibility to subjectivism. For one would scarcely assert with so much gravity that the world was his idea, or that the "I think" must accompany every judgment, unless he supposed that the first personal pronoun referred to something that did not require further elucidation.¹⁰ Self-consciousness could never have figured in idealistic philosophies as the immediate and primary certainty if it were understood to be a complex and problematic conception. And yet such it must be admitted to be, once its practical simplicity, based on habits of thought and speech, is discounted. Similarly the common dogma, to the effect that consciousness can be known only introspectively, is based on the assumption that it is known introspectively, and that thus approached it is a simple datum. Traditional spiritistic conceptions of will, activity, immediacy, and life, rest on the same fundamental misapprehension, as does the materialistic acceptance of body as an irreducible entity. That which is really at stake here is nothing less than the method of analysis itself. In exact procedure it is not permitted to assert the simplicity of any concept until *after* analysis. That the concepts enumerated above are not analytically simple, is proved by the fact that when they are treated as simple, it is necessary to give them a complex existence also in order to account for what is known about them. It is customary to say that this is a "manifestation" or "transformation" of the simple and more fundamental reality. But this is to reverse the order which is proper to thought as the deliberate and systematic attempt to know. It is equivalent to asserting that the more pains we take to know, the less real is the object of our knowledge; a proposition which is never asserted without being contradicted, since it expresses the final critical analysis of the thinker who asserts it. I append several scattering examples.¹¹

(a) "A Spirit is one simple, undivided, active being—as it perceives ideas it is called the *understanding*, and as it produces or otherwise operates about them it is called the *will*. . . . Such is the

⁹ Rickert, "Der Gegenstand der Erkenntnis," pp. 156–157.

¹⁰ I have discussed this application of the error in an article entitled "The Mind's Familiarity with Itself," in this JOURNAL, Vol. VI., No. 5.

¹¹ For other examples compare Bergson, "L'Évolution Créatrice," chap. I., and James, "A Pluralistic Universe," pp. 260, 261, 264.

nature of Spirit, or that which acts, that it can not be of itself perceived, but only by the effects which it produceth. . . . Though it must be owned at the same time that we have some *notion* of soul, spirit, and the operations of the mind, such as willing, loving, hating—inasmuch as we know or understand the meaning of these words.”¹²

(b) “Every man knows the difference between feeling and doing, between idle reverie and intense thought, between impotent and aimless drifting and unswerving tenacity of purpose, being the slave of every passion or the master of himself. . . . It must surely ever remain futile, nay, even foolish, to attempt to explain either receptivity or activity; for what is there in experience more fundamental? And being thus fundamental, the prime staple of all experience, it is absurd to seek to prove them real, since in the first and foremost sense of reality the real and they are one.”¹³

(c) “Do not permit thyself to be perplexed by sophists and half-philosophers; things do not appear to thee through any representation;—of the thing that exists, and that can exist, thou art immediately conscious;—and there is no other thing than a that of which thou art conscious. Thou thyself art the thing; thou thyself, by virtue of thy finitude—the innermost law of thy being—art thus presented before thyself, and projected out of thyself; and all that thou perceivest out of thyself is still—thyself only. This consciousness has been well named *intuition*. In all consciousness I contemplate myself, for I am myself: to the subjective, conscious being, consciousness is self-contemplation.”¹⁴

(d) “Ainsi se vérifie, ainsi s’éclaircira par une étude plus approfondie des faits internes, le principe que nous énoncions d’abord: la vie consciente se présente sous un double aspect, selon qu’on l’aperçoit directement ou par réfraction à travers l’espace—Considéré en eux-mêmes, les états de conscience profonds n’ont aucun rapport avec la quantité; ils sont qualité pure; ils se mêlent de telle manière qu’on ne saurait dire s’ils sont un ou plusieurs, ni même les examiner à ce point de vue sans les dénaturer aussitôt. La durée qu’ils créent ainsi est une durée dont les moments ne constituent pas une multiplicité numérique.”¹⁵

3. *The Fallacy of Transcendent Implication*.—I use the term “transcendent” to mean that which can not be identical with the content of a particular cognitive state; that which is super-cognitive, sub-cognitive, or ultra-cognitive. The fallacy lies in the supposition

¹² Berkeley, “Principles of Human Knowledge,” Fraser’s edition, p. 272.

¹³ Ward, “Naturalism and Agnosticism,” Vol. II., pp. 52, 53.

¹⁴ Fichte, “The Vocation of Man,” Smith’s translation, p. 70.

¹⁵ Bergson, “Essai sur les données immédiates de la conscience,” p. 103.

that one can by means of inference or implication somehow get a footing outside content; it being self-evident, on the contrary, that if the inference or implication is followed through it can not but terminate in an object, which, like the initial object, is exhibited to the mind.

In its earlier, and now obsolescent form, this fallacy is used to prove a material or problematic reality that *causes* ideas, and is in some sense represented by them. Berkeley having shown that nothing can be inferred from ideas except further ideas, this variety of dualism very properly lost its standing in philosophical tradition. But it was almost immediately replaced by a second variety which still survives with undiminished prestige. According to this second view, it is possible to infer from the content of knowledge certain necessary "presuppositions." These do not belong to the body of knowledge because they create or support it. Object presupposes subject which can never be object; passivity presupposes activity which can never be passivity; variety presupposes unity which can never be an element of the manifold. These words and phrases are intended to refer to that which as the universal condition of all knowledge, can never itself be known. Now just why that which functions in one way can not *also* function in another way is not clear. There is certainly no material or practical difficulty in photographing a camera, provided one has another camera; and I suspect that there is no greater difficulty in making an object of a subject, provided one can supply another subject. Nor is there any apparent reason why a subject, while functioning as subject, *i. e.*, while knowing, should not also be the object of another subject—and without any transformation or duplication whatsoever. In any case, in spite of all professions to the contrary, it is exactly this which takes place, when any report is made of the transcendental presupposition. The dilemma with which Berkeley refuted the dualism of Locke applies with equal force to the dualism of Kant. The transcendental is no better than the transcendent. Either the *a priori* forms of subjectivity and the transcendental ego of apperception are known or they are not. In the latter case, they may be simply neglected as verbal fictions; in the former case they must be ideas, or content of mind, and take their place with the rest. In the examples which follow, the first two illustrate the earlier dualism, and the rest the later or transcendental dualism.

(a) "It is therefore the actual receiving of ideas from without that gives us notice of the existence of other things, and makes us know that something doth exist at that time without us, which causes that idea in us, though perhaps we neither know nor consider how it does it; . . . *v. g.*, whilst I write this, I have, by the paper affecting

my eyes, that idea produced in my mind, which, whatever object causes, I call white; by which I know that that quality or accident (*i. e.*, whose appearance before my eyes always causes that idea) doth really exist, and hath a being without me."¹⁶

(b) "Turn the problem round and ponder over it as we may, beyond the sense-impression, beyond the brain terminals of the sensory nerves we can not get. Of what is beyond them, of 'things-in-themselves,' as the metaphysicians term them, we can know but one characteristic, and this we can only describe as a capacity for producing sense-impressions, for sending messages along the sensory nerves to the brain."¹⁷

(c) "Thus we see that the famous psychological argument (for the simplicity of the thinking I) is founded merely on the indivisible unity of a representation, which only determines the verb with reference to a person; and it is clear that the subject of inherence is designated transcendently only by the I, which accompanies the thought, without our perceiving the smallest quality of it, in fact, without our knowing anything about it. It signifies a something in general (a transcendental subject) the representation of which must no doubt be simple, because nothing is determined in it, and nothing can be represented more simple than by the concept of a mere something. The simplicity, however, of the representation of a subject is not, therefore, a knowledge of the simplicity of the subject, because no account whatever is taken of its qualities when it is designated by the entirely empty expression I, an expression that can be applied to every thinking subject."¹⁸

(d) "The notion of a relation between consciousness and something beyond is necessarily an imperfect one; for there can be no second term for the relation to take hold of: the category of Transcendence, like its correlative, Manifestation, is one-sided, or merely indicative or oretic. Nevertheless, since all metaphysical speculation points to transcendent Being, I submit, fourthly, that we may give this vacuum some body, or at least a skeleton, by transferring thither something from its correlative consciousness. . . . That which is thus defined can not be called Subject, for that term is applicable only to its conscious activity. Nor is 'Substance' a satisfactory name; for it suggests that consciousness is an attribute and therefore a degree less real. 'Soul' has the merit of meaning a conscious thing having also other characters. . . . Perhaps the most colorless name for it is the Transcendent, or merely Being."¹⁹

¹⁶ Locke, "Essay Concerning the Human Understanding," Bohn Lib., Vol. II., p. 244.

¹⁷ Pearson, "Grammar of Science," p. 67.

¹⁸ Kant, "Critique of Pure Reason," Max Müller's translation, pp. 289-290.

¹⁹ Read, "Metaphysics of Nature," pp. 171-172.

(e) "Dass das erkenntnistheoretische Subjekt niemals Objekt werden kann, weil es, als Objekt gedacht, sich selbst als Subjekt stets voraussetzt, heisst nur, dass es nicht als ein *wirkliches* Objekt zu denken ist, das immanent oder transzendent existiert. Diese Behauptung aber schliesst nicht aus, dass wir den *Begriff* eines solchen Subjekts zum Objekt einer erkenntnistheoretischen Erörterung machen, denn dadurch wird nicht das erkenntnistheoretische Subjekt selbst, sondern eben nur sein Begriff zum Objekt, und man wird doch nicht behaupten wollen, dass, wenn wir ein Objekt untersuchen, das ein Begriff ist, dieser Begriff notwendig der Begriff eines Objekts sei. Wir brauchen also nur daran festzuhalten, dass unsere erkenntnistheoretischen Begriffe keinen Inhalt haben, der sich auf Wirklichkeiten bezieht, und es müssen dann alle scheinbaren Paradoxien verschwinden."²⁰

4. *The Error of Exclusive Particularity.*—It is ordinarily assumed that a particular term of any system belongs to such system *exclusively*. That this is a false assumption is proved empirically. The point *b* of the class of points that constitutes the straight line *abc*, may belong also to the class of points that constitute the intersecting straight line *xby*. The man John Doe who belongs to the class Republican Party, may belong also to the intersecting class *captains of industry*. Unless this multiple classification of terms were possible, discourse would break down utterly. All the terms of discourse are general in the sense that they belong to several contexts. It is this fact that accounts for the origin and the usefulness of language. And without this generality of terms the world would possess no structure, not even motion or similarity. For there could be no motion if the same could not be in different places at different times, and there could be no similarity if the same could not appear in different qualitative groupings. It is little wonder, then, that the virtual rejection of this principle by philosophy has led to a fundamental and perpetual difficulty. To this error may be traced, I think, the untenability of Platonic universalism, recognized apparently by Plato himself; and the untenability of modern particularism, attested by the desperate efforts which almost every modern philosopher has made to save himself from it.

The most familiar variety of particularism is found in naturalism. This may be traced to the naïve bias for the space-time order, or that historical series of bodily changes which constitutes the course of nature. Naturalism asserts that this is the only system, and that its terms, the several bodily events, belong to it exclusively. That this theory is untenable is evident at once, since in order that bodily events shall possess the structure and connections necessary to them,

²⁰ Rickert, "Der Gegenstand der Erkenntnis," p. 154.

being must contain other terms, such as places, times, numbers, etc., that are not bodily events. But historically, naturalism has been discredited mainly by its failure to provide for the system of ideas, a system without which the bodily system itself could not be known. And it is the exclusive particularity of the terms of this latter that has figured most prominently in philosophical discussions.

In dualism of the Cartesian type the terms of nature and the terms of knowledge are regarded as exclusive, but in order that knowledge shall mean anything at all, it is assumed that there is some sort of representative relation between them. Spinoza and Leibniz endeavored to bring them together through a third and neutral term. Among the English philosophers the impossibility of showing how the mind can know nature if each is a closed circle, possessing its content wholly within itself, leads finally to the abolition of nature as an independent system. Thus the pendulum swings from naturalism to subjectivism. And in the whole course of this dialectic the mistaken principle of exclusive particularity is assumed.

In the position of Hume the error assumes the form in which it still persists. Speaking generally, philosophy since Hume has been engaged in the same task that occupies Hume in the closing sections of his "Treatise," the task of compensating for a radical particularism assumed at the outset. For Hume the world dissolves into the temporal flow of states each of which is unique and irrecoverable. But it is clear that were the world such as that, there could be no knowledge. For in order that there shall be knowledge it is necessary that different knowing states shall return to the same object. There must be persistent topics, and identical assertions amidst the diversity of knowing states. Thus it would be impossible for Hume to know that the world is a flux, unless this general flux character could somehow be repeatedly and consistently asserted at different moments of the flux. And if this is possible, the assertion can not be *wholly* identified with *any* particular moment.

Nominalism is a way of nursing this difficulty without curing it. There is no curing it without removing its cause, the error of exclusive particularity. Assume that a term may belong to a class without belonging to it wholly or exclusively, and there is no difficulty in supposing that a proposition such as *consciousness is a flux* may belong to the flux of consciousness, and *also* to other systems which are more permanent or even out of time altogether. That this involves no contradiction is proved, as consistency in the last analysis always is, by the cases that can be found. Nominalism does not remove the source of the difficulty, but attempts to dispense alto-

gether with the generality of terms by introducing a higher order of particularity.

Humanistic nominalism, inaugurated by Hume himself, attributes to names, concepts, constructs, etc., a scope or range that is not possessed by the particulars of sense. They are the instruments or meanings of society at large, and hence pass more slowly into the limbo of the past. But they do pass nevertheless, and Hume's original difficulty is only changed in scale. If one thinks in terms of epochs rather than in terms of moments, it is still evident that knowledge is impossible. Since every judgment is limited to its own epoch, it is not permitted to judge of the order of epochs. After a sufficient lapse of time every assertion is contradicted.

Absolute nominalism asserts that there is only one knower, who comprehends the whole of history, and whose cognitive states possess a final or standard particularity. The process of consciousness is still the single system to which every term belongs, and which possesses its terms exclusively. Everything is held to be that particular mode or act in which the absolute knows it. There is an obvious presumption against such a theory on account of its artificiality, and the extremely questionable character of its central conception. Hence its utter futility is apparent when it is seen that it does not render that special service for which it was invoked. For it is as impossible as ever to retain the principle of exclusive particularity. It is still necessary to explain within the absolute's knowledge how there may be motion and similarity. It is no easier to understand how the absolute may will, intend, or mean the same in different contexts, than it is to understand how the same terms may belong to different contexts. Furthermore, it is necessary to explain how what the absolute knows eternally may also be known by the finite knower temporally, and this is no easier than to explain how what man knows may belong also to the more stable order of nature. In either case, it is necessary to recognize the multiple particularity of terms, and had this principle been accepted at the outset, the whole nominalistic construction, with its attendant confusion of mind, would have been unnecessary.²¹

(a) "My sensations are in myself, not in the object, for I am myself and not the object; I am conscious only of myself and of my state, not of the state of the object."²²

²¹ In addition to the examples given in the text, cf. also Hume, "Treatise of Human Nature," Green and Grose edition, introduction, pp. 267, 299, and *passim*; Schiller, *From Plato to Protagoras*, in his "Studies in Humanism"; Bergson, "L'Evolution Créatrice," pp. 164 sq.; James, "A Pluralistic Universe," p. 280; Royce, "Conception of God," pp. 289-9; Taylor, "Elements of Metaphysics," pp. 57, 58, 60.

²² Fichte, "The Vocation of Man," Smith's translation, p. 42.

(b) "That if we were merely phenomena among phenomena we could not have knowledge of a world of phenomena, appears from analysis of the conditions of an intelligent experience. . . . The modifications of our sensibility can not, as successive events, make up our consciousness of them. *Within* the consciousness that they are related in the way of before and after there is no before and after. There is no such relation between components of the consciousness as there is between the events of which it is the consciousness. They form a process in time. If *it* were a process in time, it would not be a consciousness of them as forming such a process."²³

(c) "The external world and my fellow creatures therein are real 'independently' of me, because this assumption is essential to my action, and therefore as real as the experience I am thereby trying to control, *provided always that the situation which evoked the postulate continues*. Thus the 'independence' of the real world is limited by the very postulate which constructed it; it is an independence subject to the one condition that its postulation should not cease. If, therefore, anything should happen in my experience leading me to doubt its ultimateness, the reality of the 'independent' external world would be at once affected."²⁴

(d) "The nature of objectivity depends entirely on how experience as a *whole* is conceived. But *objectivity*, as the control exerted by the unity, *does* imply that, *as such*, it can not fall simply and solely within the life history of the mere individual. In some way it must lie beyond its processes, no matter what their span, or how long they continue. . . . It is, therefore, impossible to limit it to a 'social unity' inside which the individual life history is spent. . . . We seem bound, therefore, to admit that, in the long run, the only objectivity which is final is that in which the unity determining finite processes within experience is simply *the unity of all experience as such*. . . . Being experience it must be the experience of a conscious life, and being a unity, consciously referred to as such, it must be the experience of a single subject, an Absolute Individuality."²⁵

5. *The Speculative Dogma*.—By the "speculative dogma" I mean the assumption for philosophical purposes that there is an all-sufficient, all-general principle, a single fundamental proposition that adequately determines or explains everything. This assumption has commonly taken one or the other of two forms. By many it has been assumed that such a principle constitutes the proper content or subject-matter of philosophy. But such an assumption is dogmatic

²³ Green, "Prolegomena to Ethics," pp. 59–60.

²⁴ Schiller, "Studies in Humanism," p. 474.

²⁵ Baillie, "Idealistic Construction of Experience," pp. 23–25.

because it ignores the prior question as to whether there is such a principle or not. So far as the general task of philosophy is concerned this must be treated as an open question. Philosophy does aim, it is true, to generalize as widely and comprehend as adequately as possible; but a loosely aggregated world abounding in unmitigated variety, is a valid philosophical hypothesis. The discovery of a highly coherent system under which all the wealth of experience could be subsumed, would be the most magnificent of philosophical achievements; but if there is no such system philosophy must be satisfied with something less—with whatever, in fact, there happens to be. By others, in the second place, it has been assumed that the idea of such a principle or system is the property of every thoughtful person, the existence of an object corresponding to it being alone doubtful. This assumption gave rise to the ontological proof of God, which carried conviction only so long as men did not question the definiteness and meaning of the idea. For the assumption obscured a problem, the problem, namely, as to whether there is any idea corresponding to the words *ens realissimum*. The possibility of defining, on general logical grounds, a maximum of being or truth, is to say the least highly questionable. And it is certain that this problem must properly precede any inferences from such a maximal idea.

The speculative dogma has been the most prolific cause of the verbal abuses which abound in philosophy, and which I propose to consider separately. It is through this dogma that various words have been invested with a certain hyperbole and equivocation, in consequence of the attempt to stretch their meaning to fit the speculative demand. A further evil arising from the speculative dogma is the unjust and confusing disparagement of positive knowledge, through invidious comparison with this Unknown God to which the philosopher has erected his altar.

(a) "Water is the material cause of all things."²⁶

(b) "And when I speak of the other division of the intellectual, you will also understand me to speak of that knowledge which reason herself attains by the power of dialectic, using the hypotheses not as first principles, but only as hypotheses—that is to say, as steps and points of departure into a region which is above hypotheses, in order that she may soar beyond them to the first principle of the whole; and clinging to this and then to that which depends on this, by successive steps she descends again without the aid of any sensible object, beginning and ending in ideas."²⁷

(c) "When the mind afterwards reviews the different ideas

²⁶ Thales, in Burnet's "Early Greek Philosophy," p. 42.

²⁷ Descartes, "Principles of Philosophy," Veitch's edition, p. 199.

that are in it, it discovers what is by far the chief among them—that of a Being omniscient, all-powerful, and absolutely perfect; and it observes that in this idea there is contained not only possible and contingent existence, as in the ideas of all other things which it clearly perceives, but existence absolutely necessary and eternal.”²⁸

(d) “We can not play the game of thought, if one might use such an expression, without taking our stand upon the idea that the world is a self-consistent and intelligible whole: though, of course, this does not mean that any actual attempt to systematize our knowledge can be more than a step towards the attainment of the ideal of a perfect analysis and resynthesis of the manifold content of experience. The problem of knowledge is to find out how the real unity of the world manifests itself through all its equally real differences. . . . It is involved in the very idea of a developing consciousness such as ours, that while as an intelligence, it presupposes the idea of the whole, and, both in thought and action, must continually strive to realize that idea, yet what it deals with is necessarily a partial and limited experience, and its actual attainments can never, either in theory or practise, be more than provisional.”²⁹

6. *The Error of Verbal Suggestion.*—Words which do not possess a clear and unambiguous meaning, but which nevertheless have a rhetorical effect owing to their associations, lend themselves to a specious discourse, having no cognitive value in itself, and standing in the way of the attainment of genuine knowledge. This is Bacon’s famous idol of the forum. In philosophy this reliance on the suggestive, rather than the proper denotative or connotative function of words, is due not only to man’s general and ineradicable tendency to verbalism, but also to the wide vogue of doctrines that are fundamentally inarticulate. We have already examined two errors which lead philosophers to accept such doctrines. The error of transcendent implication involves a reference to topics that can not be exhibited between mind and mind; they can not be identified and assigned a single and unequivocal name. The speculative dogma has, as we have seen, led to the use of words which shall somehow convey a sense of finality, or of limitless and exhaustive application, where no specific object or exact concept possessing such characters is offered for inspection. This is what Berkeley calls the “method of growing in expression, and dwindling in notion.” Ordinarily the words so used have a precise meaning also, and there results a double evil. On the one hand, the exact meaning of such terms as “force,”

²⁸ Plato’s “Republic,” 511 B, Jowett’s translation.

²⁹ Edward Caird, “Idealism and the Theory of Knowledge,” reprinted from the Proceedings of the British Academy, Vol. I., pp. 8–9.

"matter," "consciousness," "will," etc., is blurred and vitiated; and on the other hand, their speculative meaning borrows a content to which it is not entitled. The desire of philosophers to satisfy the religious demand for an object of worship or faith, doubtless one of the fundamental motives of the speculative dogma, leads to yet another variety of verbal suggestion, in which a technical philosophical conception is given a name that possesses eloquence and power of edification. Thus philosophers commonly prefer the term "eternal" to the term "non-temporal," and "infinite" to "series with no last term," or "class, a part of which can be put in one-to-one correspondence with the whole." Such terms as "significance," "supreme," "highest," "unity," have a similar value. Or the same end may be achieved by decorating almost any word with a capital letter; as is exemplified by the emotional difference between truth and Truth, or absolute and Absolute.

But, finally, there is a verbal abuse which is worse even, than equivocation. For it is possible to invent utterly fictitious concepts simply by combining words. In such cases, the constituent concepts, if the words happen to signify any, are not united. They may be positively repugnant, or simply irrelevant. At any rate, they have not been tested for consistency, and whether they do or do not constitute a true system or complex concept remains wholly problematic. This is the principal source of the fallacy of *obscurum per obscurius* and affords an almost limitless opportunity for error. Examples of this error will be found also under several of the errors examined above, more especially those of transcendent implication and the speculative dogma.³⁰

(a) "As before shown, we can not go on merging derivative truths in those wider truths from which they are derived, without reaching at least a widest truth which can be merged in no other, or derived from no other. And the relation in which it stands to the truths of science in general, shows that this truth transcending demonstration is the Persistence of Force. To this an ultimate analysis brings us down, and on this a rational synthesis must be built up. . . . But when we ask what this energy is, there is no answer save that it is the noumenal cause implied by the phenomenal effect. Hence the force of which we assert persistence is that Absolute Force we are obliged to postulate as the necessary correlate of the force we are conscious of. By the Persistence of Force, we really mean the persistence of some Cause which transcends our knowledge and conception. In asserting it we assert an Unconditioned Reality, without beginning or end."³¹

³⁰ See also Münsterberg's "Eternal Values," pp. 403-404.

³¹ Spencer, "First Principles," sixth edition, pp. 175-176.

(b) "In his treatise of the Celestial Hierarchy, he (Dionysius the Areopagite) saith that God is something above all essence and life, *ὑπὲρ πᾶσαν οὐσίαν καὶ ζωὴν*; and again, in his treatise of the Divine Names, that He is above all wisdom and understanding, *ὑπὲρ πᾶσαν σοφίαν καὶ σύνεσιν*, *ineffable and innominable*, *ἄρρητος καὶ ἀνώνυμος*; the wisdom of God he terms an unreasonable, unintelligent, and foolish wisdom; *τὴν ἄλογον, καὶ ἄνουν, καὶ μωρὰν σοφίαν*. But then the reason he gives for expressing himself in this strange manner is, that the Divine wisdom is the cause of all reason, wisdom, and understanding, and therein are contained the treasures of all wisdom and knowledge. He calls God *ὑπέρσοφος* and *ὑπέρζως*; as if wisdom and life were words not worthy to express the divine perfections: and he adds that the attributes unintelligent and unperceiving must be ascribed to the divinity, not *κατ' ἔλλειψιν*, by way of defect, but *καθ' ὑπεροχὴν*, by way of eminency; which he explains by our giving the name of darkness to light inaccessible.'³²

(c) "It is not that a primary thought or even a creative moral activity operates in us, but that a new totality of life, a self-existent and self-sufficing being, a primary creative power which fashions the world and expresses itself in complete acts, makes its presence felt in us—this is the cardinal principle on the attainment and vivid realization of which all truth of thought and life depends for us."³³

(d) "This brings us to the Absolute Idea. . . . Reality is a differentiated unity, in which the unity has no meaning but the differentiations, and the differentiations have no meaning but the unity. The differentiations are individuals for each of whom the unity exists, and whose whole nature consists in the fact that the unity is for them, as the whole nature of the unity consists in the fact that it is for the individuals."³⁴

The indictment which realism finds against traditional and contemporary philosophy is based, I believe, on these six charges. As I have thus far expounded them they doubtless appear to be quite miscellaneous, and to afford no ground for systematic construction. But in a second paper, which will deal with rival doctrines and

³² Berkeley, "Alciphron or the Minute Philosopher," Fraser's edition, Vol. II., pp. 182-183. Berkeley's comment is as follows: "Upon the whole, although this method of growing in expression and dwindling in notion, of clearing up doubts by nonsense, and avoiding difficulties by running into affected contradictions, may perhaps proceed from a well-meant zeal, yet it appears not to be according to knowledge."

³³ Eucken, "Life of the Spirit," Pogson's translation, p. 329.

³⁴ McTaggart, "Studies in Hegelian Cosmology," p. 19.

formulate a program of reform, I shall hope to prove that these criticisms have some underlying connection and positive import.

RALPH BARTON PERRY.

HARVARD UNIVERSITY.

DISCUSSION

JAMES, BERGSON AND MR. PITKIN

MR. PITKIN'S article in Vol. VII., No. 9, of this JOURNAL seems to exhibit Professor James in another of his imputed protean rôles. This time he appears, if Mr. Pitkin is right, as an untrustworthy reporter, a perverter of truth, who by his report has done Bergson a grave injustice, and himself perhaps a graver one. That there are differences between James and Bergson may be true, but it is hard to believe that James in his account of Bergson in "A Pluralistic Universe," blindly or willfully overlooked them, or that they were a matter of issue in that book. The question under discussion was not metaphysical, but epistemological, and Professor James's confidence in concepts was broken, not in so far as they were used as *controllers*, but as *revealers*. Their status in the flux was not in issue; their function as revealing it, was. And I submit, that if Bergson teaches anything, he teaches that concepts do not *reveal* reality, and can not.

Moreover, I doubt whether even metaphysically, there is the difference between James's and Bergson's view of the concept that Mr. Pitkin thinks there is. For both, essentially, the concept is *less* than the real, a secondary and derivative function of it, and not the real itself, taken in its integrity. Differences in the mode of formulating this vision of the concept's nature there no doubt are, but the vision is, to me at any rate, essentially the same. Therefore, until Mr. Pitkin announced it, I had no idea that Professor James was "against intellect." I was pleasantly certain that he was against *intellectualism*, but not against intellect—on the contrary, I had always supposed that Professor James had consistently done what Mr. Pitkin finds so excellent in Bergson—had "*taught that concepts were to be trusted in so far as we know what we are doing with them and in so far as we use them intelligently.*"¹ In fact, I had thought that pragmatism involved some such doctrine of the concept, and in another paper² I had suggested, with Professor James's approval, that it does so. My conviction in this regard is so obstinate that I can not help doubting, in spite of Mr. Pitkin's very clear

¹ This JOURNAL, VII., 9, p. 230.

² This JOURNAL, VI., 24.

and very damning quotations from both James and Bergson, whether he is really correct in his account. This doubt is further intensified by the fact that there has been ample time for Bergson to protest if he had believed himself misrepresented by James, yet no such protest, either public or private, has been forthcoming. Finally, Mr. Pitkin has brought me to consider that if "such an acute, sympathetic and well-seasoned reader as Professor James ever fancied he saw an exponent of his anti-intellectualism in Bergson," he is more likely to be right than Mr. Pitkin. But that is another matter. I am merely concerned here to show that whatever the differences or agreements between James and Bergson, James's report of Bergson is—Mr. Pitkin to the contrary notwithstanding—essentially correct. I can not help thinking, in a word, that Mr. Pitkin's reading of Bergson has caught at the inessential rather than the essential—a cinematographic instant, not the cumulative movement of Bergson's thought.

Mr. Pitkin's quotations come from the introduction to "*L'Évolution Créatrice*" and from the chapter *De la Signification de la Vie*, pp. 216, 221, 225—from those sections which discuss the natural function of intellect and indicate the utilitarian nature of knowing. The whole of this discussion and most of the chapter to which it belongs is still antecedent to that *critique of intellectualism* with which Professor James is concerned in his report, and Mr. Pitkin's quotations, and his use of them, made me feel that he had missed both the intent and the method of Bergson. The Bergsonian method is dramatic and cumulative; his intent is to demonstrate the externality of thought, its inadequacy for getting at the heart of reality. Beginning with an analysis of the evolution of life, he proceeds by showing that each of its mutations is purely utilitarian, and that each account of it misses its inner nature. Intellect, in the *natural, still uncriticized, history* of man, is such a utilitarian miracle of mutation, operating for the sake of keeping man going, but not for the sake of seeing reality as it is. Instrumental, unspeculative, it touches, when generalized, upon the absolute, matter which it has operated upon, which it has adapted to itself, until it has reached the limit of its proper capacity. Intrinsically, matter is pure, undivided "écoulement" continuous flux, in reality identical with the other and polarized movement called life. But extrinsically, "*le sectionnement de la matière en corps inorganisés est relatif à nos sens et à notre intelligence . . . la matière, envisagée comme un tout indivisée doit être un flux plutôt qu'une chose*" (p. 203). Again, "*intellectualité et matérialité se seraient constituées dans le détail par adaptation réciproque. L'une et l'autre*

dériveraient d'une forme d'existence plus vaste et plus haute" (p. 204). The effective determinant of material form is, moreover, as for Dr. Schiller, more human than material. "Nos perceptions nous donnent le dessin de notre action possible sur les choses bien plus que celui des choses mêmes" (p. 206).

These passages are all from the beginning of the chapter from which Mr. Pitkin has quoted so signally. They belong to an introductory sketch of the chapter's aim, which is finally defined, on pages 211-212, as the demonstration that "la philosophie ne peut pas, ne doit pas accepter la relation établie par le pur intellectualisme entre la théorie de la connaissance et la théorie de connu, entre la métaphysique et la science." This once agreed, it will be found that "l'effort que nous donnons pour dépasser le pur entendement nous introduit dans quelque chose de plus vaste, où *notre entendement se découpe* et dont il a dû se détacher" (p. 217). Please note the phrase I have italicized.

These few citations from the outline of the Bergsonian critical program indicate with sufficient clearness, I should think, how Professor James "can believe that Bergson thinks that concepts serve us practically more than theoretically," that "conception developing its subtle and more contradictory implications comes to an end of its usefulness" and that Bergson "*drops* conception." But in the interest of fairness let us take a full measure of quotation. Turn to the final portions of this chapter favored by Mr. Pitkin—*De la signification de la vie*. You find that the whole preceding analysis of knowing and intellect aims exactly at driving home the doctrine that utilities are not revelations, that conception must be dropped. Things do not exist, you are repeatedly told, only actions. "La chose résulte d'une solidification opérée par notre entendement—il n'y a jamais d'autre choses que celles que l'entendement a constituées. . . . Les choses se constituent par la coupe instantanée que l'entendement pratique, à un moment donnée . . ." (pp. 270, 271).

These hints become still more articulate and explicit when we pass from the description of the natural function of intellect to the critique of that substitution of the fixations of intellect for the character of reality which is called intellectualism. Then we find that in judgment concepts are things "plus ou moins artificiellement créés par l'esprit de l'homme, je veux dire extraits par sa libre initiative de la continuité de l'expérience" (p. 315). Forms and concepts are invariably abstractions that miss the heart of reality. Even the concept of change itself is an inadequate substitute for "la spécificité du changement." What is here discussed, please note, is not concepts in operation, instruments helping us to get about in the

world, concepts "used intelligently and in so far as we know what we are doing with them," but concepts as mere, practical cinematographic views of reality envisaged as its metaphysical essence, by Plato, by Aristotle, by science, etc. The outcome of the discussion is that Bergson "*drops conception*" just as Professor James says.

The reality is a thick, enduring, creative flux. Thought is a cinematographic mechanism and involves in its very essence two *fundamental illusions*. One consists in believing "qu'on pourra penser l'instable par l'intermédiaire du stable, le mouvant par l'immobile." The other consists in the practical habit that thought has developed of making use of the pseudo-idea of a void in trying to think the fullness of reality as such.³ The concept, whatever its status in reality, is a "fundamental illusion" as a revealer, as a signification or representative of reality. Its sole business is to *control*. Immobile, it does, just as Professor James says, *altogether negate* the inwardness of the moving reality. It must be dropped, if that reality is to be apprehended. "Sur le flux même de la durée la science ne voulait ni ne pouvait avoir prise, attachée qu'elle était à la méthode cinématographique. *On se serait dégagé de cette méthode.*"⁴ Ou eût exigé de l'esprit qu'il renoncât à ses habitudes les plus chères. C'est à l'intérieur du devenir qu'on se serait transporté par un effort de sympathie. Ou ne se fût plus demandé où un mobile sera, quelle configuration un système prendra, par quel état un changement passera à n'importe quel moment: les moments du temps qui ne sont que des arrêts de notre attention, eussent été abolis: c'est l'écoulement du temps, c'est le flux même du réel qu'on eût essayé de suivre. Le premier genre de connaissance a l'avantage de nous faire prévoir l'avenir et de nous rendre, dans une certaine mesure, maîtres des événements; en revanche il ne retient de la réalité mouvante que des immobilités éventuelles, c'est à dire des vues prises sur elle par notre esprit: *il symbolise le réel et le transpose en humain plutôt qu'il ne l'exprime.*"⁵ L'autre connaissance, si elle est possible, sera pratiquement inutile, elle n'étendra pas notre empire sur la nature, elle contrariera même certaines aspirations naturelles de l'intelligence; mais, si elle réussissait, c'est la réalité même qu'elle embrasserait dans une définitive étreinte" (pp. 370-371).

I have quoted at length. I could not do otherwise in fairness to Professor James. And anybody who reads this book of Bergson's through, or who is at all acquainted with his two earlier ones,⁶ must

³To get M. Bergson's full intention the whole passage, pp. 295 to the middle of 297, should be read.

⁴The italics are mine.

⁵The italics are mine.

⁶"Les données immédiates de la conscience" and "Matière et mémoire."

realize that, if there are differences between Bergson and James, they are not missed by the latter. His primary concern in "A Pluralistic Universe" is not with them, but with Bergson's critique of intellectualism. Mr. Pitkin has not shown, and I feel sure, can not show that James anywhere claims an unjustified unanimity with Bergson. Mr. Pitkin simply misses the point of James's discussion and Bergson's intent. So far as reporting on Bergson goes, what has here been cited must indicate clearly that if anybody has failed to understand Bergson, it is not William James.

H. M. KALLEN.

HARVARD UNIVERSITY.

REVIEWS AND ABSTRACTS OF LITERATURE

Imitation in Monkeys. M. E. HAGGERTY. *Journal of Comparative Neurology and Psychology*, Vol. XIX. (1909). Pp. 337-455.

Dr. Haggerty's problem was "to discover in what ways certain species of monkeys are influenced by one another's acts." As a matter of fact, his paper is mainly devoted to proving that the behavior of one animal *does* influence the behavior of another (observing) animal. The work is not carried far enough to allow us to make any analysis of the *ways in which* this influence is exerted.

The investigation was carried on in the Harvard Psychological Laboratory from October, 1907, to June, 1908, and in the New York Zoological Park from the latter date to September, 1908. The subjects used in the tests were eight cebus monkeys and three macacus monkeys.

The problem set the animal consisted in the manipulation of simple but well-chosen types of mechanisms. A large roomy experimental cage was built which permitted the easy installation of any desired mechanical device. In all seven types of mechanism were presented to the animals. Their type is sufficiently indicated by calling them, respectively, the *chute*, *rope*, *paper*, *screen*, *plug*, *button*, and *spring* mechanism. The successful manipulation of these devices always furnished the animal with food.

Each of the eleven animals was given five opportunities to learn to manipulate the mechanisms unaided. At the conclusion of these preliminary trials, it was found that each animal had either *solved* the problem unaided by the usual *trial* method or else had lost all interest in solving it. In every problem, then, the experimenter had at his disposal certain trained animals (called *imitatees*) and certain untrained animals called *imitators*. It remained then to test the effect upon the imitator of allowing the imitatee to solve the problem in the presence of the former. In some cases the imitator was allowed to enter the experimental cage with the imitatee; in others, the imitator was confined in an observation box which afforded a clear view of the acts of the imitatee. The imitator, after watching the acts of the imitatee, was immediately afterwards allowed to try the problem. He was permitted to work ten minutes (or longer if he seemed on the point of solving it). If at the expiration of this time

he had not solved it, he was again put back in the observation box and allowed to watch the trained animal again go through with the task. "An animal was not counted to have failed until he had seen the performance a hundred times and yet was not able to repeat it." By this procedure, Dr. Haggerty hoped to be able to get some indication or measure of the influence which the imitator's act has upon the imitator's.

The author finds abundant evidence of the presence of imitation in all seven of his experiments.

By the word "*imitation*" the author means to imply the following behavior: (a) the animal which imitates observes an act of another animal; (b) more or less directly thereafter its behavior is modified in the direction of the act observed; (c) this modification is usually sudden; (d) the behavior is changed to a considerable degree, and, when wholly successful, is an exact copy of the act observed. Defined in this way, the author reports that the seven experiments yielded a total of sixteen successful cases of imitation, three of which were immediate; and five cases of partially successful imitation. Of the eleven animals used, only two failed to exhibit imitative behavior.

It is of interest to note that imitation did not always occur between animals thoroughly accustomed to each other. Familiarity tended to lessen attention. Strangeness and a certain amount of pugnacity seemed effective in arousing attention.

The paper furnishes us with a mass of very valuable detail, but the author does not attempt to analyze *just what the effective factors are* which bring about the change in behavior on the part of the imitator. For example, so simple a control test as touching or otherwise indicating the part which the animal ought to attack was apparently not carried out. Nor did the experimenter try the effect of manipulating the devices himself. It will be remembered that the author states his problem as being "to discover in what ways certain species of monkeys are influenced by one another's acts," and while this limitation of the problem excuses him to a certain extent from carrying out the control tests just suggested, yet, at the same time, the fundamental question to be settled is, was the imitator's behavior changed because of or through the acts of the imitator, or merely by reason of the fact that his attention was attracted to the proper locality? If the latter is the case, it is obvious that it is not the act of the imitator *per se* which brings about the change in behavior on the part of the imitator. While there is no evidence for it, still the fact remains that the mechanical manipulation of the devices (*e. g.*, if the string, button, etc., had been manipulated or even pointed out with a stick) might have produced the same result. These statements are offered as a criticism of the author's too narrow method rather than of his experimental work. So far as the reviewer can see, the latter is extremely well done. Further analysis, however, is well worth while.

The paper really attempts too much. The author would have given us a clearer insight into this vexed and controversial subject if, in place of amassing so much material from so many different types of experiments, he had worked more intensively upon a single well-chosen experi-

ment. However, even admitting the all-too-common fault of incompleteness, it is evident that Haggerty's work is a solid achievement. The amount of work involved in carrying through such a series of experiments is enormous no matter what animal is used as a subject. It is more than doubled when the monkey is used, by reason of his restlessness, agility, and generally uncleanly habits.

JOHN B. WATSON.

JOHNS HOPKINS UNIVERSITY.

Kant's Theory of Knowledge. H. A. PRICHARD. Oxford: The Clarendon Press. 1909. Pp. vi + 324.

This book appears to be a critical first-hand study of the "Critique of the Pure Reason." The other critiques and their bearing upon the first "Critique" do not receive attention. More particularly this work is a critical exposition of the "Transcendental Æsthetic and Analytic"; the "Dialectic" not being considered to any extent.

Mr. Prichard has made an earnest attempt to understand and elucidate the difficulties that unfortunately are found all too frequently in Kant. It would appear as if the author of the book in question had availed himself comparatively little of the largely developed Kantian literature, if the references can be taken as an inference. If this be so, the question is pertinent as to whether this is not an advantage, at least in some respects. A study of the original with a limited number of helps sometimes gives better results than making use of a larger number with the danger of obscurity and misleading views from the multiplicity of interpretations.

Granting then the correctness of Mr. Prichard's apparent motive and method, the question is in regard to the amount or value of his elucidation and appreciation of the Kantian epistemology.

The thirteen chapters of this book deal with the sensibility and understanding, space and time, phenomena and noumena, knowledge and reality, the categories, the analogies of experience, and the postulates of empirical thought, as well as some general considerations as the "problem of the 'Critique.'" Considerable attention is devoted—and quite properly so—to the categories, something over a hundred pages being given to this subject. The various chapters on the categories, and the one on "phenomena and *things in themselves*," are the better part of the book, while that on "sensibility and the understanding" is hardly equal to the other parts of the work. The method of procedure varies somewhat in the considerations of the different subjects, but, in general, there is a more or less extended statement concerning the Kantian position in question, followed by a *critical* examination of the same.

In his critical examination of Kant, Mr. Prichard has kept in mind a strict epistemological view-point. This may be regarded as advantageous or the reverse, depending upon our own standpoint of criticism in the matter. Exclusive attention given to epistemological considerations gives a clean-cut structure of this kind wherein the various parts bear a close and definite relation to each other. Any inconsistencies will appear the more clearly and are the more likely to be eliminated. On the other hand,

it is questionable whether this plan gives us anything more than the skeleton of the structure of knowledge. To give strict attention to *how* we know is apt to overlook or minimize the intimate relation between *how* and *what* we know. In other words, it is impossible to completely separate epistemology and ontology. The application of this thought to the Kantian philosophy is obvious. To regard Kant only from an epistemological standpoint is to leave out of consideration the constructive ontological element inherent in the Kantian system. It would seem to the reviewer that Mr. Prichard has lost sight, to a considerable extent, at least, of this fact in his criticism of Kant's theory of knowledge.

That the writer of this book has made a careful study of Kant's "Critique of the Pure Reason," there can be no doubt. The question, however, is whether in a painstaking scrutiny of the trees he has not missed the forest. That he correctly points out many inaccuracies and difficulties in the first "Critique" there is no doubt. Mr. Prichard is entitled to much credit for the scholarly analysis of the Kantian argument that he has made. There is every evidence of a careful and thoughtful study of the "Critique" under consideration. It stimulates new thought concerning Kant. Yet in spite of this a recurring question arises whether, after all, full justice has been done Kant in this book. Admitting many of the alleged inaccuracies or errors that the writer of the work in question advances, still the Kantian system remains a masterly contribution to philosophy. Rugged, to be sure, nevertheless, it is a mountain to remove which will be impossible. The basic results of Kant's critical examination of knowledge remain in spite of at times faulty arguments and inconsistencies. This is mentioned because in the maze of criticism directed by Mr. Prichard (and others as well) against Kant, the positive and far-reaching results of the critical philosophy are obscured if not forgotten.

Speaking more in detail concerning the method and kind of criticism made use of in this work, one has the impression, especially at times, and perhaps to a certain extent during the entire perusal of this book, that the author is rather refined in his analysis and criticism of Kant. For instance, the use by Kant of the expression "things-in-themselves," *i. e.*, the plural form instead of the singular, can hardly be a conclusive argument for the identification of the unknowable reality designated by Kant by this term, with spatial reality. The Kantian use of the particular term in its plural form may have been simply because no better or more explicit term suggested itself to his mind and too much significance should not be attached to the plural form as indicating any different conception than the general context would imply.

In the chapter on Phenomena and Things in Themselves (chapter IV.), which is fairly well done, this refinement of criticism is apparent as elsewhere. For instance, the criticism by Mr. Prichard of the phrase "*is bent to us as perceiving*" (p. 72) is finely drawn. The point of this criticism against Kant is that the latter part of the expression, *viz.*, "*to us as perceiving*" can not rightly be added to "*is*" if there is thereby involved any opposition to what is "*in reality*" inasmuch as the "*is*"

states *per se* that what is referred to is really so without reference to any qualification. The addition of the expression "to us as perceiving" is then a qualification if it is anything more than a superfluous addition of words without added meaning. Therefore Mr. Prichard argues that this supposedly qualifying expression is improperly used. One has the impression, in reading this criticism of Kant, that if a writer is to be held to such strict exactness in the use of words, almost any writer would commit intellectual suicide. As a matter of fact the word *is* as used in the phrase noted is not indicative of reality in the technical or metaphysical sense of *being*, but merely denotes the existence of the condition or state indicated by the qualification that immediately follows and is a part of the expression, or as Mr. Prichard might put it, it denotes the real existence of the condition or qualification in question. This instance is mentioned somewhat at length as showing the method of criticism followed in numerous places in the book under consideration. The author has toiled painstakingly in his endeavor to contribute to the discussion of the Kantian theory of knowledge, and has made some undoubted points, yet his criticism is, as in this instance, frequently strained.

EDWARD E. RICHARDSON.

WASHINGTON, D. C.

JOURNALS AND NEW BOOKS

PSYCHOLOGICAL REVIEW. January, 1910. *Pendulum Chromoscopes for Psychological Experimentation* (pp. 1-18): JOHN A. BERGSTRÖM.—Explains how the instrument may be constructed more cheaply for students' work and the advantages of the different forms and the ways of using accessories. *Mental Processes and Concomitant Galvanometric Changes* (pp. 19-36): DANIEL STARCH.—Problem, to determine (1) whether all or only some mental processes are accompanied by changes in electrical resistance; (2) whether different types of mental processes are accompanied by characteristically different variations in resistance and, (3) whether the degree of intensity or vividness of a given process is accompanied by a corresponding amount of change in resistance. As apparatus, two electrodes, a Leeds and Northrop mirror galvanometer and a chloride storage cell were used. Ten subjects, two of whom were women, were tested. In preliminary experiments without stimulus it was found that the curve was zigzag on nearly the same level which rose with mental disturbances caused by some one entering the laboratory or other incidental happening. It was found by special tests that the curve rose (which is assumed to indicate decreased bodily resistance) during voluntary muscular effort, and that the more purely mental effort of trying to make out letters in indirect vision caused a less rise in the curve. The automatic activity of repeating a multiplication table produced a very slight change, but if the muscular effort of repeating aloud was used the effect was increased. Emotional states aroused by the sudden ringing of a bell caused a rise varying greatly with different individuals ac-

cording to the degree of emotion aroused. The reading of a humorous passage caused more deflection than the reading of an information passage. *The Development of Right-Handedness in a Normal Infant* (pp. 37-41): HELEN THOMPSON WOOLLEY.—Experiments of the hand used in reaching for colored disks and squares were made during the seventh month. The left hand was used most during the first week and after that the right. When the distance was more than seven inches the right hand was always used. General observation aside from the experiments showed no difference between the two hands during this and the next month, but by the close of the ninth month right-handedness was evident to even a superficial observer. The tendency to right-handedness was clearly native, as there was nothing in the way she was held or other conditions that favored the use of the right hand. *Studies from the Psychological Laboratory of the University of Chicago. The Autokinetic Sensation* (pp. 42-75): HARVEY A. CARR.—Autokinetic sensations are illusions of movement of dim lights when fixed in a dark room. Movements as great as 60° seemed to occur in the case of one observer, but one out of the four subjects failed to get the illusion. Not all subjects experience the same type of illusion. Rate of movement depended upon conditions of fixation to some extent, and in some cases there was actual movement of the eye opposite to that of the apparent movement. Rate and amount of movement are greater for the extreme peripheral positions. Position of the eye at the time and also a previous position modify the illusion. Retinal rivalry and voluntary eye movements modify the illusion, as do also actual movements of the eye, the closure of the eye and voluntary effort to control the illusion. The author thinks that fluctuating motor tensions that lead to movements, rather than eye movements themselves, are the conditioning basis of the illusion.

ARCHIV FÜR GESCHICHTE DER PHILOSOPHIE. Band XIV., Heft 2. January, 1910. *Über Malebranches Lehre von der Wahrheit und ihre Bedeutung für die Methodik der Wissenschaften* (pp. 145-183): A. BUCHENAU.—Science is not concerned with general ideas, but with relations of equality and inequality between quantities. All truth is a matter of relations, and all relations are themselves quantities, and all quantities are both numerical and spatial. In biology growth is but the unfolding of the "preformed" germ. *Sur la conception aristotélicienne de la causalité*, II. (pp. 184-210): L. ROBIX.—Further demonstration and justification of Aristotle's doctrine that the form or essence of a thing is its cause, and that in explaining an event we have but to define it. This is a revival of Plato's doctrine of participation. *Demokrit und Plato*, II. (pp. 211-229): I. H. JENSEN.—Plato knew nothing of Democritus's atomic theory until he had written much of the *Timæus*. Then he inserted part of it into the plan he had formed for the work. *Pars Secunda Philosophiæ, seu Metaphysica* (pp. 230-262): L. JORDAN.—An examination of lecture notes taken in the beginning of the seventeenth century, and revealing the attitude taken by a Parisian teacher of philosophy

towards metaphysicians from Descartes to Voltaire. *Jahresbericht über die vorsokratische Philosophie*, 1900-08. (pp. 263-283): O. GILBERT. - Burnet's and Doring's works criticized, together with about a score of others. *Die neuesten Erscheinungen. Historische Abhandlungen in den Zeitschriften. Eingegangene Bücher.*

THE PHILOSOPHICAL REVIEW. March, 1910. *The Philosophical Aspects of Evolution* (pp. 113-136): JOHN GRIER HIBBEN. - The Darwinian hypothesis has given rise to three significant problems in modern philosophy. (1) Is man a term in the series of evolution having unique worth and significance? (2) What is the significance of the appearance of a purposeful, directing factor (human intelligence) in the organic series? (3) Are the processes of life to be explained as mechanical or "vital"? And is a conceptualistic logic capable of comprehending them? The latter question is answered in the affirmative. *Schopenhauer and Pragmatism* (pp. 137-153): WILLIAM MACKINTIRE SALTER. - According to Schopenhauer the world it ultimately will. Intellect is an invention of will, and it is a servant of will. But it goes beyond its master, and in philosophy and art sees and presents reality as it is, regardless of will. Thus Schopenhauer's philosophy seems to transcend pragmatism. *The Significance of Schelling's Theory of Knowledge* (pp. 154-167): ARTHUR S. DEWING. - Schilling distinguishes three types of cognitive processes: Transcendental knowledge wherein there is no differentiation of object, the intuition of particular objects, and intellectual intuition, which is a true synthesis of the two. But it was his demand for a real solution of the problem of knowledge rather than his solution which was of importance to epistemology. *Proceedings of the American Philosophical Association. Abstracts of Papers. List of Members. Reviews of Books:* Hugo Münsterburg, *The Eternal Values*: JOHN DEWEY. Franz Erhardt, *Die Philosophie des Spinoza im Lichte der Kritik*: FRANK THILLY. W. D. ROOS, *Metaphysica of Aristotle Translated*: WM. ROMAINE NEWBOLD. William Marshall Urban, *Valuation: Its Nature and Laws*: ERNEST ALBEE. *Notices of New Books. Summaries of Articles. Notes.*

Bingham, W. Van Dyke. *Studies in Melody*. A monograph. Lancaster, Pa., and Baltimore, Md.: The Review Publishing Co. 1910. Pp. 88.

Bruguières, R. *Le droit et la sociologie*. Paris: Alcan. 1910. Pp. 162. 3.75 fr.

Calkins, Mary Whiton. *A First Book in Psychology*. New York: The Macmillan Company. 1910. Pp. xvi + 419. \$1.50.

Cellérier, L. *Esquisse d'une science pédagogique*. Paris: Alcan. 1910. Pp. 381. 7.50 fr.

Claparède, Ed. *La Psychologie animale de Charles Bonnet*. Genève et Bale: Georg & Co. 1909. Pp. 95.

Del Vecchio, G. *Sull' idea di una scienza del diritto universale comparato*. Turin: Bocca. 1909. Pp. 34. L. 2.

- Delvolve, J. *Rationalisme et tradition*. Paris: Alcan. 1910. Pp. 180. 2.50 fr.
- Downey, John E. *Preliminary Study of Family Resemblance in Hand-writing*. Laramie, Wyoming: The Laramie Republican Company. 1910. Pp. 51.
- Fabre, J. *Les pères de la révolution*. Paris: Alcan. 1910. Pp. 764. 10 fr.
- Giuliano, B. *La religiosità dello spirito*. Palermo: Sandron. 1910. Pp. 63. L. 1.50.
- Herrick, C. L. *The Metaphysics of a Naturalist*. Philosophical and Psychological Fragments. Granville, Ohio: Denison University. 1910. Pp. 98.
- Hodson, F. (Editor). *Broad Lines in Science Teaching*. London: Christophers. Pp. xxxvi + 267.
- Murray, R. A. *Il valore come concetto puro ecc.* Florence: G. Carnesachi e figli. 1910. Pp. 76. L. 2.

NOTES AND NEWS

At the meeting of the Aristotelian Society on May 2, Mr. E. C. Childs read a paper on "Science and Logic." "The principle of complete induction is thus stated by Poincaré: If a theorem is true of the number 1, and if it is shown to be true of $n + 1$, provided it is true of n it will be true of all whole numbers. This principle may be described in many ways. It may be (a) derived from experience, (b) derivable immediately from the principle of contradiction, (c) a definition of whole number, (d) a convention, or (e) a synthetic judgment *a priori*. It was argued that the first four of these views could be proved impossible, and that the last alone could be held to be the true description. The relation of mathematical induction to the method of physical science was dealt with, and its relation to the laws of probability and chance. Physical and chemical science attain certain laws by the application of mathematical truths, and therefore the laws of mathematical induction are the ideal to which physical induction approximates."—*The Athenæum*.

"THE next international convention for liberal religious thought will meet at Berlin, from the 6th to the 10th of August. The first of these world congresses was held in London in 1901, the second in Amsterdam in 1903, the third in Geneva in 1905, and the fourth in Boston in 1907. The convention will be termed *Weltkongress für freies Christentum und religiösen Fortschritt*, and one of its special purposes will be to acquaint outsiders with the religious life and progressive theological scholarship and religious problems of Germany. The announcement of the German committee declares that the Berlin meeting comes at an opportune moment, since a strong revival of religious interests is making itself felt throughout the fatherland. The president of the congress is Dr. K. Schrader, member of the German Parliament."—*The Nation*.

THE JOURNAL OF PHILOSOPHY

PSYCHOLOGY AND SCIENTIFIC METHODS

REALISM AS A POLEMIC AND PROGRAM OF REFORM. II

IN an earlier paper¹ I have expounded six general errors that seem to me to contain the substance of the charge which realism brings against the traditional philosophy. These errors are the following: (1) argument from the ego-centric predicament, or the claim that the cognitive ubiquity of the knowing subject is proof of its ontological necessity; (2) pseudo-simplicity, or failure to distinguish between the simplicity of the familiar, and the simplicity that is tested by analysis; (3) transcendent implication, or the inference from content to something beyond content; (4) exclusive particularity, or the supposition that a term can belong to a single system only; (5) the speculative dogma, or the assumption that there is an all-general, all-sufficient principle; (6) verbal suggestion, or the use of words for the sake of their associations rather than their exact denotation and connotation.

That these errors are by no means unrelated, will appear on a brief comparison of them. (1) The argument from the ego-centric predicament leads to the conclusion that knowing is a universal condition of being. It follows that every philosophical problem must be complicated by the problem of epistemology. This is a most prolific source of that ambiguity and confusion which is so generally characteristic of philosophical terminology. The same error lends support to the speculative dogma, through identifying reality with the ideal of knowledge. Again, since this error leads so directly to the contradictions of solipsism, it furnishes a motive for the error of transcendent implication; which here serves as a means of escape from the relativities of the individual knower to the standards of an absolute knower. (2) The error of pseudo-simplicity almost invariably accompanies that of argument from the ego-centric predicament, through the importance which attaches in the latter to the "subject" as a datum correlated with every "object." The error of pseudo-simplicity also lends a specious plausibility to transcend-

¹ This JOURNAL, Vol. VII., No. 13.

ent implication and to the speculative dogma. (3) The error of transcendent implication is a means of escape from the solipsistic consequences of the first error, and a means of supporting the speculative dogma. It is one of the principle motives for the use of verbal suggestion. (4) The error of exclusive particularity is joined with the argument from the ego-centric predicament in all phenomenalistic and idealistic philosophies; and it forces these philosophies to resort to some sort of dualism in order to provide for the generality which is necessary for knowledge. It thus creates, in the case of idealism, an occasion for the error of transcendent implication. The "transcendental" individual or objective subjectivity which results, supplies an object for the speculative dogma. (5) The speculative dogma is the principal cause of hasty and ill-considered generalizations in philosophy, and so encourages the use of illegitimate methods of arriving at ultimate concepts. In modern times, the speculative dogma has found its chief support in the ego-centric predicament, but the errors of pseudo-simplicity, transcendent implication and verbal suggestion have been its faithful allies. (6) Verbal suggestion is the means through which the real barrenness and futility of such errors as the foregoing are concealed, and specious conceptions given an established place in philosophical tradition.

The inter-relation of these errors will appear more clearly in the philosophical systems in which they are committed. I now propose, in the light of this definition of general errors, to summarize the polemic of realism against other contemporary theories.

II. THE REALISTIC CRITIQUE OF CONTEMPORARY PHILOSOPHY

For the purposes of this summary I shall divide contemporary philosophy, excepting realism, into naturalism, idealism, absolutism, and pragmatism.

1. *Naturalism*.—Realism agrees in a measure with naturalism, in that both unqualifiedly accept the results of the natural sciences, and regard the mathematical sciences as the best model of exact thinking. But realism, in common with all other contemporary tendencies, rejects the naturalistic contention that natural science is the only branch of knowledge, or that the physical object is the only individual.

Naturalism appears in two forms, the speculative form, or materialism, and the critical form, or experimentalism. The former consists in the assertion of the universality of some physical substance, such as matter, force, or energy. Crude or naïve materialism involves the error of pseudo-simplicity, due in this case to the bias of the organism for the bodily type of complex. In its philosophical

development, materialism is dominated by the speculative dogma; and the attempt to construe matter, force, or energy as all-general and all-sufficient has led to that variety of equivocation and verbal suggestion that vitiates the fundamental concepts of all "reduction" philosophies. But the most flagrant defect in materialism is its epistemological dualism, involving the error of transcendent implication. Matter, force or energy is construed as a substratum, and illegitimately inferred from phenomenal appearances.

Critical naturalism, or experimentalism, is based upon an analysis of the physical object into elements of content, and a definition of the fundamental concepts of science as ratios or formulations involving these elements. This analysis realism accepts. But experimentalism, through its selection of local and quantitative verification as the test of truth virtually asserts that the physical hypothesis is the only admissible hypothesis and the physical complex the only "fact." This assertion realism regards as wholly arbitrary and untenable, since it affords no account of other complexes, such, *e. g.*, as geometry and consciousness. The experimentalist is influenced, no doubt, by the error of exclusive particularity. He construes his world at the outset as a series of localized sense-complexes, and disregards the possibility that the elements of these complexes may belong also to other complexes. The realist, on the other hand, having resolved the physical complex into general or logical elements, is enabled to discover several complexes in which these elements belong; with the result that the physical complex loses its uniqueness.

This same error of exclusive particularity involves the experimentalist in a dualism between perception, sensation, or fact, on the one hand, and conception, construct, or hypothesis, on the other. The second factor of knowledge is introduced to provide permanence, order, and generality. Since these are not found, they must be made. With the experimentalist they are man-made, pragmatic and historical. This dualism, a method of confusion resulting in failure, is avoided by the realistic principle of multiple particularity. Permanence, order, and generality are accounted for by the fact that a concept may be in a perceptual complex and yet not of it.

2. *Idealism.*—Realism agrees with idealism in assigning limits to natural science, although there is a difference amounting to one of principle in the grounds on which these limits are assigned. For idealism, science is deficient in validity, and thus never wholly true; for realism, science is deficient in scope, and thus not the whole truth.

Realism agrees with Kantian idealism, also, in asserting the categorized and articulated structure of the world. But realism dis-

sents from the status which idealism assigns to the categories. For idealism they are "presuppositions," or acts of an "epistemological subject," arrived at through the error of transcendental implication; while for realism they are immanent, or parts of the objects of knowledge.

But the basal defect in idealism, as found in the realistic indictment, is subjectivism, or the assertion that consciousness is a universal condition of being. This assertion may in most cases be traced to the argument from the ego-centric predicament, involving the fallacies of *petitio principii*, redundancy, or agreement. It obtains support also from the error of pseudo-simplicity, which in this case encourages the supposition that ego, will, subject, or consciousness is known because it is familiar and stereotyped. The difference between idealism and realism respecting consciousness is peculiarly far-reaching. That which idealism regards as of primary ontological importance, realism regards as incidental. The neo-realistic reconstruction of idealism is more strictly comparable to the Copernican revolution than was the Kantian reconstruction of dogmatic realism. For it consists essentially in a decentralization. As in the Copernican system the earth loses its uniqueness and becomes a planet, so in neo-realism the ego loses its uniqueness and becomes an object among objects.

3. *Absolutism*.²—Although absolutism is at present almost wholly identified with idealism, it has a separate history and an independent motive. Absolutism is essentially the philosophy of the speculative dogma. It seeks to define an all-general, all-sufficient principle in terms of complete knowledge, in terms of a maximum of truth inferred from the approximations of human knowledge. Realism denies that logic at present affords any conception of a maximum of truth. There is a general logical principle requiring that the number of fundamental propositions in a system shall be *as few as possible*. A true system can contain neither redundancy nor superfluity. But *how few* the fundamental propositions can be is not logically determinate. A universe that had as many postulates as terms, as many laws as events, would not be irrational or unintelligible. Humanly speaking it would be difficult to know such a universe, much more difficult, for example, then to know a monotonous or simple world. But there is no reason why the world should serve our convenience in this matter—any more than, as a matter of fact, it does.

Nor can any maximum of truth be defined on grounds of universal relationship. There is no good reason, I believe, for supposing

² Cf. my article entitled "The Futility of Absolutism," in the April number of the *Hibbert Journal*.

that every entity is related to every other entity. The answer to this question must be postponed until the meaning of irrelevance, manyness, and difference has been rigorously examined by the methods of modern logic. But in any case, everything points to the relative triviality of the ubiquitous relations. A system, for example, of which the principle of combination was difference, and the class the totality of entities, would amount to no more than an aggregate of particular items of knowledge—the endless repetition of the assertion of difference. And such a system, though it might in a sense be all-comprehensive, would be more nearly a minimum of truth than a maximum of truth. Every proposition of real cognitive importance would in such a system be reduced to the status of a term having no predicate but difference.

It is the inadequacy of the most general propositions that makes absolutism so inveterately liable to formalism. Absolutism is the philosophical mountain that labors and brings forth a mouse. It combines the grand manner with the most trivial assertions. And such is the power of words and scholastic prestige, that it has begotten a reverence for empty and confused conceptions. "For the contentions and sophistical kind of philosophy," says Bacon, "ensnares the understanding, but this kind, being fanciful and timid and half poetical, misleads it more by flattery. For there is in man an ambition of the understanding, no less than of the will, especially in high and lofty spirits."³

4. *Pragmatism*.—With pragmatism's attempt to dispel the absolutist's illusions of grandeur, realism is in hearty sympathy. Pragmatism has shown not only that absolutism in general is a meaningless and unverifiable hypothesis, but that a certain futility and inconsequential character pervades all its works. And the controversies aroused by pragmatism have demonstrated a fundamental difference among contemporary philosophers between those who feel themselves to be adventurers discovering new lands, and those who feel that they are walking about in a sort of patrimonial estate. The pragmatist phenomenology of truth was first ignored by absolutism, then denied, and finally claimed by right of eminent domain. During this incident, the realist's sympathies, owing doubtless to a self-preservative instinct, have been almost wholly with the pragmatist.

The charges which realism brings against pragmatism are directed not against the pragmatist conception of truth, strictly and narrowly construed, but against certain generalizations with which it is allied under the names of "humanism" and "anti-intellectualism."

Humanism is tainted by both subjectivism and nominalism.

³ Bacon, "Novum Organum," edition of Ellis and Spedding, Vol. IV., p. 66.

These have resulted, doubtless, from the more fundamental error of exclusive particularity, inherited from Hume. For humanism, "facts" belong wholly to the temporal flow of consciousness. The world obtains its structure through the historical ideating activity of man controlled by practical motives. But this constructive process, albeit it flows more slowly, is itself a flux like the passing states upon which it supervenes. Concepts pass down the stream of time more slowly than percepts, but they are none the less essentially transient in character. The result is that the world is inherently self-contradictory; it may alienate its own fundamental nature, or annihilate itself retroactively. When the pragmatist theory of truth is thus construed it strikes so deep as to undermine itself. Humanism, like idealism, puts mind in the hopeless predicament of standing in midair and trying to organize a world out of parts that have no inherent structural properties. Realism does not deny that true beliefs "work," or "fulfill a purpose," nor does it deny that this throws much light upon the history of civilization. But it asserts that *if* a belief works or fulfills a purpose, this must be because it adjusts an organism to an environment. Beliefs can not by their practical success construct their environment, because they owe their success to their consistency with that environment.

Anti-intellectualism reflects the humanistic conception of thought as an instrument made for man's use. What man has made he may also unmake, or at least hold in subjection. Anti-intellectualism is also due on its negative side to a misconception of analysis. Analysis is not a process of decomposition or of fixation, but simply and solely the process of discovery *carried through*. It is as much concerned with wholes and connections and changes, as with simple terms. It does not represent any special cognitive interest, but the cognitive interest in general, when this is pure and self-consistent. When the anti-intellectualist urges us to forsake logic for life, he does so on grounds afforded not by life, but by logic. The positive assertions of anti-intellectualism arise, on the other hand, from the error of pseudo-simplicity, from mistaking the immediate and familiar life-experience for insight. In a certain sense we know anything that we may act on, and talk, think, or feel about automatically. In this sense we always know the old better than the new, and may even cherish a certain intimacy with our ignorance. But the moral is unmistakable. Familiarity and immediacy, because they soothe nescience, and tempt to a relaxation of scientific rigor, should be charted not as harbors of refuge but as shoals and reefs that menace the unwary voyager.

It does not fall within the scope of this paper to attempt a systematic statement of realistic doctrine. Indeed, I am inclined to

believe that the success of the realistic movement would involve its own disappearance as a propaganda, and the appearance in place of it of one science of philosophy in which all investigators should work together without party or school designation. I shall conclude with the outline of a general course of procedure, or program of reform, which seems to me to be the proper sequel of the realistic polemic.

III. THE REALISTIC PROGRAM OF REFORM

I am not one of those who believe that the defects of philosophical procedure are irremediable. Philosophy has repeatedly thrown off its bad habits, and aroused itself to critical vigilance. Furthermore, there is good ground for asserting that there has never before been so great an opportunity of reform. For logic and mathematics, the traditional models of procedure, are themselves being submitted to a searching revision that has already thrown a new light on the general principles of exact thinking. And there is promise of more light to come. For science has for all time become reflectively conscious of its own method. The era of quarrelsome misunderstanding between criticism and positive knowledge is giving way to an era of united and complementary endeavor. It must not be forgotten that philosophy is peculiarly dependent on logic. Natural science in its empirical and experimental phases can safely be guided by instinct, because it operates in the field of objects defined by common sense. But the very objects of philosophy are the fruit of analysis. Its task is the correction of the categories of common sense, and all hope of a profitable and valid result must be based on an expert critical judgment. The present situation, then, affords philosophy an opportunity of adopting a more rigorous procedure and assuming a more systematic form. And it is with reference to this opportunity that I repeat here the advice which is our common inheritance from the great philosophical reformers. None of these canons is original, but all are, I think, pertinent and timely.

1. *The Scrupulous Use of Words.*—This is moral rather than a logical canon. There is need in philosophy of a greater fastidiousness and nicety in the use of words. A regard for words is, in philosophy, the surest proof of a sensitive scientific conscience. For words are the instruments of philosophical procedure, and deserve the same care as the lancet of the surgeon or the balance of the chemist. A complacent and superior disregard of words is as fatuous as it is offensive. It is a healthier intellectual symptom to feel as MacIain felt in Chesterton's "Ball and the Cross." "Why shouldn't we quarrel about a word? What is the good of words if they aren't important enough to quarrel over? Why do we choose

one word more than another if there isn't any difference between them? If you called a woman a chimpanzee instead of an angel, wouldn't there be a quarrel about a word? If you're not going to argue about words, what are you going to argue about? Are you going to convey your meaning to me by moving your ears? The church and the heresies always used to fight about words, because they are the only things worth fighting about."⁴

2. *Definition*.—"The light of human minds," says Hobbes, "is perspicuous words, but by exact definitions first snuffed and purged from all ambiguities." Words are properly signs. They are serviceable in proportion as they are self-effacing. A skillful word will introduce the hearer or reader to his object, and then retire; only the awkward word will call attention to itself. It follows, then, that the only means of escaping quarrels about words is to use words with discrimination, with careful reference to their objective purport, or usefulness as means of access to ideas. Furthermore, a word is essentially a social instrument, whether used for record or communication; and requires that its relation to an object or idea shall be agreed on and conventionalized. This is the only means of bringing several minds together in a common topic of discourse. "Syllables," says John Toland, "though never so well put together, if they have not ideas fix'd to them, are but words spoken in the air, and can not be the ground of a reasonable service."⁵

Philosophy is peculiarly dependent upon a clear definition of the reference of words because, as we have already seen, its objects are not those of common sense. It can not rely on the ordinary denotation of words. Unless a word be carefully guarded, it will ordinarily lead to the context of nature, to the manifold of bodies in space and time. This fact affords a perennial and abundant source of confusion, from which there is no escape save through the creation of a technical vocabulary. Bacon's observations on this matter are worthy of being quoted in full. "Now words," he says, "being commonly framed and applied according to the capacity of the vulgar, follow those lines of division which are most obvious to the vulgar understanding. And whenever an understanding of greater acuteness or a more diligent observation would alter those lines to suit the true divisions of nature, words stand in the way and resist the change. Whence it comes to pass that the high and formal discussions of learned men end oftentimes in disputes about words and names, with which (according to the use and wisdom of the mathematicians) it would be more prudent to begin, and so by means of definitions reduce them to order."⁶

⁴ Chesterton, "The Ball and the Cross," p. 96.

⁵ Toland, "Christianity not Mysterious," second edition, p. 30.

⁶ Bacon, "Novum Organum," edition of Ellis and Spedding, Vol. IV., p. 61.

Definition, then, means in the first instance, the unequivocal and conventional reference of words. But there is a further question which arises from the use of single words to refer to complex objects. If such a reference is to be unequivocal it is necessary that there should be a verbal complex mediating between the single word and the complex object. Thus if a circle is defined as "the class of points equidistant from a given point," this means that a circle is a complex object whose components are specified by the words in the above phrase. The single word is virtually an abbreviation of the phrase. The clarity of words depends in the end on their possessing a conventional reference to simple objects. But with the progress of analysis and the demonstration of the unsuspected or unexplored complexity of things, the single word which at first denoted the object in its pre-analytical simplicity, comes to stand for several words which denote the components of the object in their post-analytical simplicity. Definition, then, means two things: first, a convention regarding the substitution of a single word for a group of words; second, a convention regarding the reference of single words to simple objects.⁷

3. *Analysis*.—I am using the term "analysis," to refer not to the special method of any branch of knowledge, but to what I take to be the method of exact knowledge in general. I mean simply that method of procedure in which the problematic is discovered to be a complex of simples. Such procedure may lead to the discovery of fine identities in the place of gross differences, or fine differences in the place of gross identities. Analysis in this sense means only the careful, systematic, and exhaustive examination of any topic of discourse. It can not, then, be proper to assert that such procedure destroys its object. It does, it is true, require that naïveté and innocence of mind shall give place to sophistication; or that ignorance shall give place to some degree of explicitly formulated knowledge. But even the discovery that such psychological or moral values are lost is itself the result of analysis. Nor is there any difficulty in providing a place for such values within the psychological or moral systems to which they belong. In the second place, it can not be proper to assert that there is anything which necessarily escapes analysis, such as "real" change or "real" activity. The method of analysis does not require that change and activity shall be anything other than what any investigation shall discover them to be. Analysis may show either that they are unanalyzable or that they may be further reduced. If they turn out to be unanalyzable, it can only be because they exhibit no complexity of structure, no

⁷ The definition of things, rather than words, is apparently the same as knowledge in general.

plurality of necessary factors. If they turn out to be reducible, then they must be identical with the totality of their components. If they appear to differ from such a totality, then they must appear so to differ in some respect, and this respect must at once be added to complete the totality. It is especially important not to forget the combining relations. A toy is not identical with the collection of the fragments into which it has been shattered, but it is identical with these fragments in that particular arrangement which has been destroyed. Similarly dynamics does not reduce motion to the occupancy of positions, but to the occupancy of positions *in a temporal order*. There is a perfectly clear difference between geometry or statics, on the one hand, and dynamics on the other. It is important also not to confuse analysis and synthesis with the physical operation that often accompanies them. For the purposes of knowledge it is not necessary to put Humpty Dumpty together again, but only to recognize that Humpty Dumpty is not himself unless the pieces are together.

The common prejudice against analysis is due in part to this false supposition that it is an attempt to substitute a *collection* of parts for an *arrangement* of parts. But it is due also to a more or less habitual confusion between things and words. Those who have employed the analytical method have been by no means guiltless in the matter. So soon as any word obtains currency it begins to pose as a thing in its own right, and discourse is constantly tending to take on the form of a logomachy. It has not unnaturally been supposed that analysts intended to verbalize reality, to give to its parts the artificial and stereotyped character of words, and to its processes the formal arrangement of grammar. But, as we have already seen, verbalism can not be avoided by a deliberate carelessness in the use of words. If words are to be both useful and subordinate, it is necessary that they should be kept in working order, like sign-posts kept up to date, with their inscriptions legible and their pointing true.

4. *Regard for Logical Form.*—Logic is at the present time in a state of extraordinary activity, and able both to stimulate and to enrich philosophy. The principal contribution which modern logic is prepared to make to philosophy concerns the form of exact knowledge. This problem is by no means wholly solved, and I believe that there is an important work to be done which only philosophers can do. But the mathematical logicians have already broken and fertilized the ground. The theory of relations, the theory of "logical constants" or indefinables, the theory of infinity and continuity, and the theory of classes and systems, concern everything fundamental in philosophy. No philosopher can ignore

these and like theories without playing the part of an amateur. The mathematical logicians may be quite mistaken, or they may have failed to go to the root of things; but in that case they must be overtaken in their error and corrected on their own grounds, if the field of scientific philosophy is not to be abandoned to them altogether. The present situation is certainly intolerable. For philosophy deals with the same topics as modern logic, but treats popularly and confusedly what modern logic treats with the painstaking thoroughness and exactness of the expert.

There is another respect in which modern logic should be of service to philosophy. In the course of a reconstruction of the foundations of mathematics, certain general canons of good thinking have come to light; and these are directly applicable to philosophical procedure.⁸ I refer to such canons as "consistency" and "simplicity." These canons are new in the sense that they are now well enough defined to afford a means of testing any theory. A theory is consistent when its fundamental propositions actually generate terms, or when a class can be found which they define; and a theory is simple when none of its fundamental propositions can be deduced from the rest. It behooves philosophy, then, both to ally itself with logic in the investigation of the most ultimate concepts, such as relation, class, system, order, indefinable, etc., and also to apply to its own constructive procedure the most refined tests of scientific form.

5. *Division of the Question.*—Although philosophy is especially charged with correcting the results obtained in each special investigation by results obtained from other investigations, it is folly to ignore the necessity, humanly speaking, of dealing with one problem at a time. Not only is the attempt to raise and answer all questions together futile, but it prevents either definiteness of concepts or cogency of reasoning. Exact knowledge must be precisely limited in its application. A disposition in philosophy to employ terms in an unlimited sense, and to make unlimited assertions, is doubtless the principal reason why philosophy at the present time possesses no common body of theory. And for the same reason philosophy is today without any common plan of work to be done. English and American philosophers have been much exercised during the last decade over what is called "the problem of truth." It is assumed that the various parties to this discussion are referring to the same thing. But it is doubtful if this would ever be suspected if they did not specifically mention one another's names and writings. I venture to say that these quarrels are due less to disagreement on the merits

⁸ Cf. Schmidt, "Critique of Cognition and its Principles," this JOURNAL, Vol. VI., No. 11.

of any question, than to an irritable determination to be heard. If a sober and patient attempt were made to reduce the present differences of philosophical opinion to debatable propositions, the first result would be a division of the question at issue. It would certainly appear that the present-day problem of truth is one problem only so long as it is a symbol of factional dispute; discuss it, and it at once proves to be many problems, as independent of one another as any problems can be. I have recently been interested in enumerating some of these problems; and without any attempt to be exhaustive, I find as many as seven: (1) The problem of non-existence: What disposition is to be made of negated propositions, of non-temporal propositions, and of imaginary propositions? (2) The problem of the one and the many: How may many elements belong to one system? (3) The problem of logical form: What are the ultimate categories? (4) The problem of methodology: How shall one best proceed in order to know? (5) The problem of universality: How can that which is known at a moment transcend that moment? (6) The problem of the values of knowledge: What are the criteria of right believing and mistaking? (7) The problem of the relation between belief and its object: In what respect does belief directly or indirectly modify its object?

If agreement, or even intelligent disagreement, is to be obtained, philosophical issues must be sharpened. If any steady advance is to be made, special problems must be examined in order, and one at a time. There is a large group of such special problems that is by general consent assigned to philosophy. In addition to those already enumerated, there are such problems as consciousness, causality, matter, particularity and generality, individuality, teleology, all of them problems whose solution is of the first importance both for the special sciences and for religious belief. I do not mean to assert that these problems are not examined by the traditional philosophy, but that they are not sufficiently isolated, that they are not examined with sufficient intensive application. They find their place in most philosophical treatises as applications of a general system, and not as problems to be examined independently on their merits.

6. *Explicit Agreement.*—The recent discussion of the desirability and expediency of a "philosophical platform" has developed a difference of opinion as to whether agreement should be explicit or implicit.⁹ Agreement of some sort is conceded to be a desideratum, but there are some who believe that a common tradition or historical background is all that is necessary. Now is it not evident that in theoretical or scientific procedure there is no agreement until it is

⁹ Cf. Schmidt, Creighton, and Leighton, this JOURNAL, Vol. VI., Nos. 6, 9, 19, 25.

explicitly formulated? The philosophical classics afford no basis for agreement because they are open to interpretation. The difficulty is merely complicated through the necessity of first agreeing on the meaning of a text. To employ terms and propositions in their historical sense is to adopt precisely the course which is adopted by common sense. It means the introduction into what is supposed to be exact discourse of the indeterminate human values with which tradition is encrusted. In exact discourse the meaning of every term must be renewed; no stone can be allowed to go into the building that has not been inspected and approved by the builder. Otherwise the individual philosopher is no more than an instrument in the hands of the *welt-geist*. He must be possessed by a fatalistic confidence that the truth will take care of itself if he only repeats the formulas that he has learned in the schools or in the market place. But the most precious and cherished privilege of philosophy is the critical independence of each generation. Every philosophical reformer from the beginning of European thought has been moved by a distrust of tradition, and has proclaimed the need of a perpetual watchfulness lest the prestige of opinion be mistaken for the weight of evidence.

If agreement is to be based on tradition, then tradition with all its ambiguity, its admixture of irrelevant associations, and its unlawful authority, is made the arbiter of philosophical disputes. That no theoretical difference is ever really judged in this way is abundantly proved from the present situation in philosophy. We sympathize, but we do not agree; we differ, but we do not disagree. It is of more importance in theoretical procedure that two or three should agree, than that all should sympathize. "If the trumpet gives an uncertain Sound," says Toland, "who shall prepare himself to the battle?" Agreement and disagreement alike require the explicit formulation of theories in terms freshly defined. It is not to be supposed that those who insist on the necessity of explicit agreement have in mind any general unanimity. The principle would be satisfied if a single philosopher could be found to agree with himself—provided the agreement were explicit. For then it would be possible for others to disagree with him, and to disagree explicitly. We should then have before us a number of carefully formulated propositions, which could be tested and debated in the light of the evidence; propositions which would be the common property of philosophers and the material with which to construct an impersonal system of philosophical knowledge.

The first duty of philosophers, then, is not to agree, but to make their implicit agreements or disagreements explicit. And I can not see how this duty can be escaped, without an entire abandonment of

philosophy's claim to be a theoretical discipline. If we can not express our meaning in exact terms, in terms that we are willing should stand as final, if like the sophists of old we must make long speeches and employ the arts of rhetoric, then let us at least cultivate literature. At present I fear we are bad scientists and worse poets. But I do not believe that philosophy is necessarily ineffable.¹⁰ I believe rather that the difficulties which some philosophies have in meeting the demands of exact discourse are gratuitous, and are due to a habit of mixing theory, on the one hand, with the history of theory, and, on the other hand, with common belief. It is not necessary that philosophy should abandon its interest in either history or common belief, but it is necessary that it should isolate those interests, and not permit them to compromise its direct study of problems.

7. *The Separation of Philosophical Research from the Study of the History of Philosophy.*—A problem can be solved only by the attentive examination of that which the problem denotes. But a problem of historical exegesis, and an original philosophical problem, necessarily denote different things and direct the attention to different quarters. Thus the problem of *Hume's conception of causality* directs attention to a text, whereas the problem of *causality* directs attention to types of sequence or dependence exhibited in nature. It is worth while to formulate this commonplace because there is a present-day habit of procedure that obscures it. It is customary to assume that it is the mark of rigorous scholarship in philosophy to confine oneself to commentaries on the classics. Now I am not here raising the question of the importance of the history of philosophy. That it has an indispensable place in human culture, and in the discipline of every philosopher, I do not for a moment doubt. But that it has a higher dignity than a direct and independent analysis of special problems seems to me to be nothing more than a superstition. What dignity the history of philosophy possesses it derives from the originality of the individual philosophers whose achievements it records. If philosophy were to consist in the study of the history of philosophy, it would have no history. Doubtless the by-product of originality is charlatanry and sophomoric conceit; but I believe that mankind is as well served by this as by the complacent pedantry which is the by-product of erudition.

But whether the historical form of treatment does or does not lend dignity to philosophical discourse, it certainly adds complexity and difficulty. Ferrier, good Hegelian though he was at heart, confided to his readers the hopelessness of undertaking to show whether his conclusion agreed with Hegel's or not. "It is impossible to say to what extent this proposition coincides, or does not coincide, with his opinions; for whatever truth there may be in Hegel, it is

¹⁰ Cf. Sheffer, "Ineffable Philosophies," this JOURNAL, Vol. VI., No. 5.

certain that his meaning can not be wrung from him by any amount of mere reading, any more than the whiskey which is in bread . . . can be extracted by squeezing the loaf into a tumbler. He requires to be *distilled*, as all philosophers do more or less—but Hegel to an extent which is unparalleled. A much less intellectual effort would be required to find out the truth for oneself than to understand *his* exposition of it.”¹¹ I do not believe that Ferrier exaggerates the difficulty of historical exegesis. For it is not only true that the great philosophies require to be distilled; they also require to be translated from the terms of their own traditional context to the terms of another. And there must always, I believe, be a large marginal error in any such interpretation. This being the case, it is not only gratuitous, but suicidal, to add the difficulties of this problem to the difficulties of each special philosophical problem.

8. *The Separation of Philosophical Research from the Interpretation of Established Belief.*¹²—There is one further principle of procedure that is implied by those already formulated. Philosophy may be said to have two general functions, the function of research and the function of mediation. By the former I mean the examination of a group of special problems in a detached and theoretical manner, and with as great technical exactness as it is possible to obtain. By the latter I mean the interpretation and reconstruction of common sense and religious belief. These two functions should be separated with some care and nicety. To be more explicit, it seems to me to be necessary for philosophy to develop a vocabulary of its own, in which the terms shall signify concepts reached by methodical analysis. Such a tendency is already apparent in the gradual abandonment by philosophy of such terms as “God,” “soul,” “freedom,” and “immortality”; terms that belong to a universe of discourse that is practically intelligible but theoretically inexact.

There will always remain a task which I am sure no philosopher will desire to shirk, the task of mediating between the technicalities of a scientific philosophy and the funded or institutional beliefs of mankind. This task is one that requires a humanity and sympathy which no technical competence can supply. But it can be the more effectually accomplished if philosophy be rid, as physical science is rid, of confusions between the symbols of exact thought and the symbols of life. The greatest service which knowledge can render to civilization is its indirect service, in which it is first refined according to its own standards, and then brought into circulation.

HARVARD UNIVERSITY.

RALPH BARTON PERRY.

¹¹ Ferrier, “Institutes of Metaphysics,” pp. 96-97.

¹² I have dealt with this matter at length in an article entitled “Theories and Beliefs,” in the *Harvard Theological Review*, Vol. III., No. 2.

THE PHYSIOLOGICAL SUPPORT OF THE PERCEPTIVE PROCESSES

THE problem which I propose is that of the relation between the processes upon which our perceptive elaborations and interpretations are built and their physiological basis or accompaniments. The usual view, often implied rather than expressed, is that the physiological adjustments take place primarily and tentatively; and that when they have brought in their verdicts, the data are then taken in hand and the mental interpretation built upon them. In the simpler processes, particularly in an undeveloped situation, sensory factors are dominant; and there may be very slight elaboration. This is characteristically true of animal perception and of the earlier stages of human mental life. It is also fairly true for all experimental stages in which there is little familiarity and the final issue is uncertain. In all these cases the dependence upon the physiological clues is probably close and direct; and the interpretation waits for the data to emerge and develop before it itself takes on a more definite form. On the other hand, in the case of expert and complex as well as familiar perceptions, it is urged that this relation is very decidedly different; and that this difference of status has been curiously overlooked in the standard descriptions as well as in experimental work concerning the relation of support between physiological clues and psychological results. It is the general law that our interest is in the issue, the result, and not in the process. Because of this principle there comes to be a science of psychology which has for its special purpose the detection and description of these relations that modify, while yet they evade conscious report. The principle also emphasizes that factors too slight or too suppressed to serve as the explicit basis of perception, none the less influence and even directly shape the conscious issue. What is meant by speaking of these factors as in their kinship physiological is often just this: that they serve their function in this suppressed or detached or embryonic manner, while yet they contribute to the determination of what emerges as a consciously matured perception.

To state the present thesis at once: it is maintained that in all elaborate perception the anticipatory effort, which seizes the issue as soon as there is the slightest chance to shape it, is dominant; and that the physiological processes act more to corroborate and reinforce the perception than actually to support or supply it. It is of course true that there must be some sort of physiological impression in order to serve as an actual sensory situation; and the contention is only that this is slight, that it acts merely as an index or clue, and that the clue serves to set off a prepared mechanism. This is equivalent

to saying that our perceptive processes are so much more dominantly psychological that the physiological aspect is suppressed, minimized, and at times disregarded.

The principle will be clear if presented in terms of the visual processes. It was through the study of these that doubt arose as to the validity of the ordinary statement—and a view developed that received an unexpected experimental confirmation. The situation in regard to vision is also peculiarly precise and definite in the case of the perception of distance. The physiological adjustment for distance is the accommodation-process in each eye, together with the convergence-process of the two eyes jointly, and also the important spacial relations on the two retinae. It is commonly said, and with substantial correctness, that the order of prominence of these three factors, despite some variability, is at least constant in this respect; that the motor processes of adjustment in terms of convergence represent the final stage of the physiological support; that suggestions or indications of distances possibly appear in an undeveloped situation in terms of the retinal relation, which at once pass over into the development of sharp and precise images (for which accommodation is necessary), the whole being then completed and matured by inducing the convergence-shiftings which effect and corroborate the inference of distance. All this appears convincingly in the ordinary stereoscopic view, particularly when it requires a slight adjustment. In this statement we leave out of account the secondary factors of light-and-shade and all the other aids to distance-perception, and confine attention to those factors which have a strong physiological support. In regard to this, the ordinary view then states that we accommodate and converge and coordinate; and when this has been done, there develops an estimate of distance which is then handed over to the perceptive process, which accepts it, refines it, and expresses it in such mental relations as suit the purpose of the situation. This description seems both inaccurate and irrelevant. In its place it is contended that the least possible physiological process is performed—just enough to get some suggestion of what the image may mean, and then at once the perceptive processes take up the situation; and the physiological processes come in merely to reenforce and support a conclusion to which they have contributed but very slightly. While thus the two views have something in common, in the main the principle thus stated is the exact reversal of the ordinary relation.

The experimental evidence was gathered in connection with the attempt to estimate absolutely and relatively the distance from the observer of minute points of light in a dark room. These points of light may be made to appear and disappear always in the same

line; and at times the observer was asked merely to estimate the distance of the point of light from his eye, and again, when two lights were exposed successively, to determine which was nearer and which farther. The estimates of different individuals were so entirely at variance that the conclusion was unmistakable that they were not due to physiological processes. The conclusion was equally obvious that in a situation like this, where the possibility of psychological development was withdrawn, the physiological support was almost helpless. It is important to explain that the conditions of these experiments were much more rigid than those usually employed, and that the rigidity of these conditions was made necessary because of the increasing conviction that the one thing which the eyes will not do, if they can avoid the burden, is to judge distance by physiological factors. In experimenting with slighter precautions, it was found that in one series of rather unusually correct visual judgments in the dark room, the result was due to an unconscious auditory perception,—the subject really gaining his estimate of distance according to the steps or the inferred position of the assistant who gave auditory clues as he walked from place to place to set the points of light. It was found, further (what is not unknown), that a slight glimmer of light in the dark room often completely changes the situation; and that it does so because this slight illumination enables the subject to see other portions of the room and thus to judge distance not in terms of accommodation and convergence, but of relative arrangement of objects in the room. Even in a bare room it was found that the floor-boards, the optical table, or any basis of support for the stimuli was enough to give a clue to the arrangement; and that as soon as such clue was available the physiological processes dropped to a wholly secondary position. Accordingly, in the final arrangements, the room is completely dark and neither the subject nor the assistant is at any time in the room. The assistant manipulates the apparatus by cords and pulleys in an adjoining alcove; and the subject is placed outside the room, viewing his spots of light through an opening in a screen ordinarily closed, but at the moment of observation exposed by a shutter. More than that, it was found highly desirable that the subject should never have entered the dark room, and if possible should be wholly ignorant of the size or nature of the space into which he is looking. It is not an unnecessary refinement to avoid these suggestions, to arrange that the subject be blindfolded before he enters the building and be taken by a devious way to a preliminary dark room where his eyes may be adjusted, and then led to his position without having any notion whatever of the depth or character of the space in which the points of light are to be exposed. While this

procedure may render the subject ill at ease in not quite knowing where he is, it is less objectionable than any definite knowledge of the situation. Under these circumstances points of light which actually were from five to twenty-five feet away may be judged to be as close as five feet and as far away as one hundred yards. It is found (although the experiments need to be repeated to be accepted as conclusive) that the most naïve subjects, when thrown wholly upon the physiological support, are so much at sea that their judgments are little more than guesswork.

It appears then that we are so accustomed to work on a psychological basis that when deprived of this basis our judgments are ill at ease, variable, uncertain, and irregular. Indeed, there is convincing evidence in some cases that the subject really forms a general impression of the probability that these lights are about as far off as they would be in a room of about the laboratory size, say fifteen to forty feet, and that this unconscious inference is still effective. The further proof of this relation was obtained by experimenting first with uninformed subjects and then allowing a glimmer of light to enter the room. This might be so slight that the subjects themselves did not distinctly perceive it, but it evidently gave them some suggestion of the arrangement and from then on their judgments of the spots of light were definite and accurate. These conclusions, which may be interpreted to mean that all sorts of suggestive factors which are psychological are far more important than physiological ones, is in a measure consistent. It was found, similarly, that it is far better, in determining the difference between monocular and binocular judgments, not to let the subject realize whether he is using one eye or two. It is better not to call attention to the physiological basis of a perception; and so there was devised a simple screen (which the subject does not see) which allows the assistant to determine whether the right or the left or both eyes shall make the judgment. The inference from these experiments, that a large number of the determinations that have been made to show the effect of convergence and accommodation may be quite erroneous, is clear; and it seems plausible that the very diverse results which different observers have found on this point are largely to be interpreted in terms of the psychological or subconscious suggestions which surround the experiment.

There are two corollaries from this position to which it is well briefly to call attention. The first is as to its applicability to other senses and perceptive processes. It will naturally be applicable in the main to the more inferential and elaborated sense-perceptions; but this view emphasizes the anticipatory factor in all perception. It tells us that we use our sense-impressions only to get clues of

situations and that this will be done whenever possible, although it provides for a very constant stream of reenforcements of this elaborated inference which we are so prone to make, by physiological tests. In the field of auditory perception there is not a great scope for the application of the principle outside of the more generic filling in of the sound impression. This falls outside of the present topic. Yet it is pertinent to refer to the fact that we guess a message through the telephone, if only we hear enough of the sounds with approximate accuracy so that we may make out the words. Yet symbolic interpretation of this kind and the filling in of gaps involve other factors than those here considered. In terms of auditory direction the principle has a limited application; we develop a perception of direction constantly and are uneasy in listening to sound in ignorance of its source. In locating a cricket in a room we always hear it *somewhere*, although the location changes its place and we are conscious of the illusory inference. And so there is a familiar stage-performance in which the artist appears with a violin and gives an acceptable rendition, while the bow is traveling across the strings. But before concluding the performance, he drops violin and bow, but the sounds continue and all the while have actually been due to a vocal imitation of the violin. Yet in all these cases the physiological support has not quite that direct relation to the inference of direction or source of origin that it has in the field of vision. There is a similar situation in the complex sensations that we get while eating. There again we are interested only in identifying the several articles of food placed upon the plate, for we are ill at ease if we do not know what it is we are eating. The esthetic effects of contrasts are at times suggestive. If we take up on the fork something that we have supposed to be potato but which proves to be butter, there is a moment of actual disgust. There is, at all events, an evidence of this tendency of slight physiological support to anticipate the sensation and then to use, as suggested, the data of the sensation to corroborate and reenforce the perception. These are mere analogies; and yet they have value in suggesting that the principle accurately applied in the visual perception of distance has an approximate or a transformed application elsewhere.

The other corollary is that it is owing to this principle that illusions are so common. From this arises a type of illusion which consists in ignoring the physiological support, in not observing that the psychological perception may be corrected by a more careful physiological reference. Whenever, in the perception of distance, one somehow gets the notion that the object is fifteen feet off, he continues to disregard the physiological messages which, if properly attended to, might tell him that the object was only five feet off. One

ignores with erroneous issue the physiological clues when the psychological inference is dominant and strong, and one tends to ignore them without such issue when they merely corroborate a correct perception. In the one case the perception overrides; in the other it almost dispenses with the support.

There is thus proposed an interpretation of the physiological support of a more complex and inferential perceptive process in what seems a more complete setting and a more correct perspective than is usually given; and from a practical point of view this attitude enforces the necessity for the most precise precautions to avoid psychological suggestion in determining physiological constants; and again it enforces a practical precept: that the introspective account of the simplest judgments should be carefully recorded in order to detect the processes by which the perceptive judgment is reached. It will not do to theoretically analyze the physiologically supporting processes and state their efficiency in terms uncomplicated by the psychological complexity in which all these are set; and all this is but an illustration of how essential it is to investigate psychologically as a whole what at first seems predominantly a physiological process.

JOSEPH JASTROW.

COLUMBIA UNIVERSITY.

DISCUSSION

A PROPOS D'UN ARTICLE DE MR. WALTER B. PITKIN INTITULÉ: "JAMES AND BERGSON"

LE dernier numéro du JOURNAL OF PHILOSOPHY contient un article remarquablement clair et précis de Mr. Walter B. Pitkin intitulé "James and Bergson or, Who is against Intellect?" Mr. Pitkin, citant et interprétant un certain nombre de passages de mes travaux, en tire cette conclusion que la divergence est profonde entre les vues de M. le Professeur William James et les miennes, et que c'est à tort que l'auteur du "Pluralistic Universe" a cru que les deux doctrines pouvaient se prêter un mutuel appui. Plus particulièrement, M. Pitkin attaque l'interprétation que M. William James a donnée, dans son sixième chapitre, des vues que j'avais exposées sur les concepts, sur leur origine, leur portée et leur rôle. Comme je tiens, au contraire, l'interprétation de W. James pour parfaitement exacte, comme le chapitre qu'il a bien voulu me consacrer reproduit fidèlement ma pensée (en bien meilleurs termes, d'ailleurs que ceux dont je m'étais servi moi-même), je crois nécessaire de remettre les choses au point. Et je profiterai de l'occasion pour dire un mot des questions connexes que Mr. Pitkin soulève en passant.

Mr. Pitkin semble être parti de l'idée qu' il expose dans son avant-dernier paragraphe, et d'après laquelle les concepts, tels que je les entends, feraient partie intégrante de la réalité. Ces concepts seraient "lumps of perfectly real, objective nature." Et Mr. Pitkin ajoute, "These lumps or precipitations are not, 'cut out' of reality, at all, as Professor James construes Bergson. . . . What Bergson sees and apparently James does not is that things are none the less real when they are motionless and external to one another, than when they shoot through one another and interpenetrate and move." Mais, c'est là, au contraire, ce que je ne puis absolument pas admettre. Que certains concepts soient *extraits* par nous de la réalité, cela ne me paraît pas douteux; mais je ne conclus pas de là qu' ils y aient été *contenus*. L'appareil photographique *extraît* d'un spectacle mouvant des vues immobiles: il ne s'ensuit pas que les immobilités aient *fait partie du* mouvement. Or, je vois exactement entre la réalité et les concepts les plus voisins d'elle le même rapport qu'entre la scène animée et la photographie instantanée.¹ Que seraient-ce si l'on considérait tous les autres concepts, qui sont bien moins encore que cela,—de simples notes prises à *propos de* cette réalité, et même, le plus souvent, des notes prises sur ces notes! Je n'ai jamais pensé, et je n'ai jamais dit, que "l'immobile fût aussi réel que le mouvant." Bien au contraire, j'ai fait, dans "l'Évolution créatrice," de fréquentes allusions à une thèse que j'ai également exposée ailleurs, et d'après laquelle toute immobilité est relative ou apparente: le mouvement est seul réel, et la permanence même d'une forme n'est que le dessin d'une mouvement.² Les plus grosses difficultés philosophiques naissent précisément de ce qu' on met immobilité et mouvement sur la même ligne et de ce qu' on leur attribue une égale réalité. Dès qu' on s'installe dans le mouvement, pour ne plus voir dans l'immobilité qu'une relation ou une négation, beaucoup de ces difficultés s'atténuent et quelques-unes d'entre elles s'évanouissent.

Je n'ai jamais pensé non plus que les choses fussent aussi réelles "when they are external to one another" que lorsque elles "shoot through one another and interpenetrate." Au contraire, j'estime que tout morcelage en *choses* est relatif à notre faculté de percevoir. Nos sens, braqués sur le monde matériel, y tracent des lignes de division qui sont autant de routes frayées à notre action future: c'est notre *action éventuelle* qui nous est renvoyée par la matière, comme par un miroir, quand nos yeux aperçoivent des objets aux

¹ "Evolution créatrice," pp. 328 sqq. Cf. p. 174 et surtout *Introduction à la Métaphysique* (*Revue de Métaphysique et de Morale*, Vol. XI., 1903).

² Voir, "l'Evolution créatrice," chapitre iv; et *Introduction à la Métaphysique*, pp. 25 et suivantes.

contours bien nets et les distinguent ainsi les uns des autres.³ La science, pour fournir des points d'appui à notre imagination, pousse plus loin le morcelage commencé par notre perception naturelle. Elle prolonge le travail de nos sens dans la même direction. Elle décomposera donc en molécules et atomes, ou de toute autre manière, les objets distincts en lesquels nos sens avaient déjà décomposé la matière. Mais atomes, molécules, centres de force, etc., ne me paraissent pas avoir plus de réalité absolue que les "objets distincts" eux-mêmes.⁴

Cela ne veut pas dire que la perception et la science se meuvent dans l'irréel. Mr. Pitkin a cité quelques passages de mes travaux où je dis que notre intelligence "est accordée sur la matière" et que notre physique atteint en droit, sinon en fait, la réalité *absolue*. Il aurait pu en citer encore d'autres. Mais ces passages n'ont pas le sens que Mr. Pitkin leur attribue:—et là pourrait bien être l'origine du malentendu. Il y a en effet deux choses à distinguer dans les données des sens: la perception des *objets*, nettement découpés dans l'espace, et celle des *qualités*, qui forment autant de continuités sensibles. Et il y a aussi deux choses à distinguer dans la science: d'une part les *concepts* et de l'autre les *relations mathématiques* ou lois.

En ce qui concerne d'abord les données des sens, j'ai essayé d'établir que, tandis que le morcelage de la matière en *choses* ou objets est tout relatif à nos besoins, au contraire la perception des *qualités* sensibles est beaucoup plus indépendante du besoin et présente par là une réalité objective supérieure. Sans doute, la perception de ces qualités sensibles n'est pas la même chez tous les êtres conscients; elle doit dépendre du degré de complication et de perfection des organes des sens: plus on s'élève, plus la qualité est concentrée; plus on descend, plus elle est diluée. Mais précisément pour cela nous entrevoyons, à la limite, tout en bas, une dilution extrême qui serait la matérialité même. À cette matérialité, qui est quantité plus encore que qualité, j'attribue une réalité "absolue" dans le même sens où l'on pourrait dire que les mille et mille cellules d'un tissu, aperçues au microscope, ont une réalité absolue par rapport à l'aspect simplifié que le tissu présente à l'œil nu. Ce n'est pas là ce "horrid absolute" dont Mr. Pitkin évoque le spectre, un absolu étranger à notre représentation ou même simplement distinct d'elle. C'est un absolu qui est perçu en raccourci. Nous tenons ces ébranlements élémentaires, constitutifs de la matière, dans la qualité sensible où ils se contractent, comme nous

³ "Evolution creatrice," pp. 12, 396, et surtout "Matière et Mémoire," p. 233 et p. 218 sqq. Voir également le chap. I. de ce dernier livre.

⁴ "Matière et Mémoire," p. 221.

tenons les palpitations de notre cœur dans le sentiment général que nous avons de vivre.⁵

C'est en ce sens que le progrès de notre physique me paraît la rapprocher de la matière même, dans son essence "absolue." Il y a, en effet, deux parts à faire dans notre science: autre chose est le *concept*, autre chose la *loi* ou *relation mathématique*. Les concepts aident la science, mais ils ne sont jamais pour elle que des schémas provisoires; l'objet dernier de la science est de découvrir des relations mathématiques et même de résoudre la matière en relations de ce genre. Or, j'estime que cette géométrie est le fond même de la matière, qu'elle est immanente à la perception que nous en avons. Notre intelligence, qui va naturellement à la géométrie, est accordée sur la matière. Voilà pourquoi j'ai dit que l'intelligence, si inhabile à comprendre l'esprit, si incompétente dans le domaine de la vie (qui est ce qu'il y a de *positif* dans la réalité) est à son aise dans le domaine de la matière inerte.⁶

Flux posé sur un flux, notre conscience se connaît elle-même dans son essence, et connaît aussi dans son essence la matière qu'elle touche, avec laquelle elle coïncide partiellement. Je ne me représente donc nullement "life as transcending experience," ni la réalité absolue comme placée "beyond the most searching intuition." La vie transcende l'intelligence, mais non pas l'expérience; et elle se saisit absolument elle-même dans une intuition qui, incomplète en fait, peut se compléter indéfiniment.

Ces dernières explications étaient nécessaires, pour indiquer le sens exact de certains passages de mes travaux que Mr. Pitkin a cités. Je ne sais pas si les vues développées dans ces divers passages seraient acceptées telles quelles par M. William James: pour ma part, je n'y vois rien d'incompatible avec l'ensemble de sa doctrine, rien qui excède les limites d'un empirisme radical. Mais là n'est pas la question. Mr. William James n'a voulu exposer, et n'a déclaré prendre à son compte, qu'une certaine théorie des *concepts*, et de la place que l'intelligence occupe dans l'ensemble de la réalité. Sur tout cela il a dit exactement ce que je pense. Je voudrais seulement l'avoir aussi bien dit.

H. BERGSON.

PARIS, le 18 Mai, 1910.

⁵ Cf. "Matière et Mémoire," p. 232 en particulier.

⁶ J'ai d'ailleurs expliqué comment cette matière est, par rapport à l'esprit, quelque chose de *négatif*. ("Evolution créatrice," pp. 218 sqq.)

REVIEWS AND ABSTRACTS OF LITERATURE

The Psychology of Thinking. IRVING EDGAR MILLER. New York: The Macmillan Co. 1909. Pp. xxv + 303.

In this book we have, as the title indicates, an endeavor to treat the logical processes from the point of view of their psychology. Questions of genesis and function are everywhere in evidence. Taking the point of view of "functional" psychology, the author analyzes thinking into its various phases and interprets each according to its service to the work of adjustment. The presentation is clear, interesting, and replete with well-selected illustrations. The book is written evidently with the idea of reaching teachers quite as much as psychologists, and of offering a helpful treatment of educational psychology and general method. In consequence, the educational application of each point is emphasized, and the training of the various factors involved in the process of thinking is made the subject of special chapters. The book is not technical, nor does it aim to be exhaustive. From the point of view of organization it commands attention as an original effort, and its interpretation of various phases of consciousness is in many respects novel and enlightening.

The functional conception of consciousness regards its service as everywhere one of furthering readjustment. Wherever reflex or habitual activities are unsuccessful or inadequate methods of securing the ends of the organism, there consciousness enters in to effect an improvement. In the words of the author, "It is the factor of variation and of change. It reconstructs old modes of action and organizes new ones to meet needs that can not otherwise be met." Thus, we may assume, all phases of consciousness are merely elements contributing toward this general result of helping us to learn better ways of reacting to our environments. Affective and cognitive consciousness, perception, imagination, conception, reasoning, are but phases in the development of this function.

This general notion of the meaning of the psychical processes is, the author evidently thinks, applied by him in a complete and consistent manner. He insists on "the organic unity of the mental life." Every phase of consciousness involves all the others. It is one of the "fallacies of training" to assume that any sort of mental power can be cultivated in isolation from the others. Consciousness works as a unity. The higher phases differ from the lower ones only in being more elaborate, more complex, more explicit.

But while this view of the nature of the mental life receives abundant statement and application by the author, nevertheless, in his endeavor to define thinking and to state its function he tends to differentiate it from the other sorts of consciousness, and to assign to it alone the use which according to his general theory should belong quite as well to the lower forms of perception and imagination. This tendency is to some extent apparent in his preliminary characterization of thinking as an "active process of going over our ideas, rearranging them, and ordering them to meet some need that can not be met by the more spontaneous and undirected flow of ideas." This definition implies that thinking, or consciously controlled thought, is the only example of "the active process of

going over our ideas, rearranging them, and ordering them to meet some need." Now it is quite likely that in ordinary perception or imagination, where the mind does not reflectively attend to what it is doing, there is some sort of going over of various meanings, and a consequent rearrangement that makes it possible for the organism to react satisfactorily to a new situation without a lot of blind experimentation. Such a view would, at any rate, seem to be necessary in case perception is to find any utility such as the functional theory of mind ascribes to it. If perception involves no process of mental readjustment, then one finds it hard to see what there is in perceptual control of activity beyond mere stimulus and response such as we have in reflex and habitual activity, where, on our theory, consciousness has no function and consequently does not exist.

The tendency to limit the reconstructive activity of thought to those more complete forms of consciousness where deliberation is much in evidence is seen in the distinction between *ideo-motor* and *deliberate* action. Here the author simply follows the older psychology. He says, quoting from James, that where "the act occurs immediately and unhesitatingly upon the idea of it," there we have *ideo-motor* action, but where "there is some conflict of ideas which impedes and delays action until it is settled by reflection" there we have *deliberate* action and genuine thinking. Now it is the opinion of the reviewer that the fundamental tenet of the functional psychology implies that there is no consciousness save where one can find a degree of conflict of ideas or, in the case of perception, interpretations. Hence *ideo-motor* action is not an *immediate* outcome of the presence of an idea, but rather the result of the presence of an idea that is sufficiently interesting, plausible, or convincing to suppress all competing ideas. It is in the mental conflict that precedes the triumph of any idea or interpretation in the control of attention that consciousness finds its locus. Such a conflict exists in lieu of the blinder learning of mere trial and error. The experimentation is carried out in idea rather than in fact, and the judgment of some sort of logic is invoked to forestall the judgment of the event. It would seem quite easy to discover even in perception that conflict and resolution of interpretations which indicate the active functioning of mind in the task of furthering readjustment.

The foregoing comment is not offered as a serious criticism on Dr. Miller's book. As a fairly popular presentation of the subject of thinking intended largely for teachers, it could not well have undertaken a more thoroughgoing analysis than has been given. Moreover, in regard to the point at issue, the author errs, if he errs at all, in classical company. However, the reviewer could not forbear to avail himself of this opportunity to point out what seems to him like an inconsistency into which it is very easy for the "functional" psychologist to fall.

In conclusion, it may be reiterated that Dr. Miller has produced a readable, useful and, to say the least, plausible account of the process of thinking. His book should prove especially serviceable to those who are interested in psychology as a foundation for education.

E. N. HENDERSON.

JOURNALS AND NEW BOOKS

THE PSYCHOLOGICAL REVIEW. March, 1910. *Evolution and Consciousness* (pp. 77-97): C. H. JUDD. - The presidential address before the Psychological Association. "Consciousness is a product of evolution which continues in a higher form the movement which is manifested in all earlier adaptations." "As soon as consciousness was fully evolved the direction of all adaptations was radically modified." "If any scientific explanation of human life is to be attained that explanation must be based on a thorough study of consciousness." Progress is toward increased complexity which tends more and more to make the organism self-sufficient so far as the immediate environment is concerned. Consciousness promotes self-sufficiency by taking up the environment and moulding it to the individual's needs. The laws governing organic and conscious life are therefore inner laws that differ from those of the outer world. When this condition was reached then human imagination began to reorganize the environment in accordance with its own activity. The nutritive system uses the materials of the environment for building itself but does not make over the environment to suit the ends of the individual as man with his highly developed consciousness has more and more been able to do. In addition to this, language, art, etc., have been developed, not because of their biological value in the struggle for existence but because of their value to the conscious life. Changes in consciousness, not changes in bodily organs, account for man's advancing civilization. Consciousness is a cause of events in the physical world. The chemical explanation leaves out the facts of individual organization and consciousness which are causes of what shall take place. We are on the eve of a new type of psychology not unfriendly to biology, yet not dependent upon it, which "Will boldly assert its right to existence as the science which deals in a broad way with the evolutionary processes by which consciousness arose and through which the trend of life has been changed from organic adaptation to intelligent conquest." *The Nature and Causation of Galvanic Phenomenon* (pp. 98-146): BORIS SIDIS. - A continuation by Sidis and Louis Nelson of work carried out by Sidis and Kalmus and reported in the *Psychological Review* for September, 1908, and January, 1909. The evidence shows that "the galvanic phenomenon can only be due to an electromotive force initiated in the organism itself by the psycho-physiological processes under the influences of external stimulation." Investigations made to determine what particular physiological process gives rise to the current led to the final conclusion that "the galvanic phenomenon is due to an electromotive force which is muscular in origin, and other supposed causes are such only as they give rise to muscular contractions." *Personal Differences in Suggestibility* (pp. 147-154): WALTER D. SCOTT. - The writer brings his topic into connection with the problem of special and general ability. Students of the psychology class were tested for suggestibility by more than one method, and the degree of correlation was calculated. The results of two tests are here described. The two individuals that ranked highest in suggestibility in

the first test ranked fifth in the second and the three that ranked fourth in first ranked twelfth, fifteenth, and fifth in second. None had the same rank in the two tests and few anywhere near the same. Other experiments indicated that the same individual differs so much in suggestibility that it is absurd to speak of a person as suggestible without indicating in what line he has been tested.

NOTES AND NEWS

WILHELM OSTWALD reiterates in the introduction to his new work, "Die Entwicklung der Elektrochemie" (Leipzig: J. A. Barth), his theory that "the history of the sciences offers the best and most authoritative material for the study of law in the evolution of mankind." The history of science, as Professor Ostwald sees it, is not merely history for history's sake, but a new method of study, a new way of getting at the results of research. The nineteenth century was too full of creative work in the various fields of science to give historical studies their full play. The new century, on the other hand, though it has achieved already some very remarkable results in the way of positive additions to our knowledge of the forces of nature, will offer a larger field for historical studies, for the reason that the practical value of such studies will be more clearly demonstrated. The author deprecates the idea that pure science can have no connection with life. The great investigators, he says, "were almost without exception in their younger days passionately enthusiastic over some concrete, practical aim, and it was in the course of the further and higher development of these problems (which indeed followed rapidly one upon the other) that they themselves attained a wider and higher point of view. The tree of knowledge raises its crown high in the ether of pure science, but it is rooted in the firm ground of human needs and activities." Electrochemistry is particularly adapted to the subject of historical study in this sense. Its history is not yet more than a century old, and it has received a powerful impetus from men still living. Its documents are all easily available, and require no special linguistic or diplomatic criticism in order to be unearthed and interpreted. Furthermore, its technical importance is evenly balanced with its scientific. In an interesting paragraph the author sets up against each other the great books, works of men of genius, and the text-book writers who usually are men of moderate stature. We find, he says, so much in the original works of the great scientists that has not become part and parcel of the text-book literature. The selective work of the text-book writer is the result of his deliberate judgment, and the mere fact that he has profited by the advance of science does not necessarily give him the requisite critical faculty. He acts as a sieve which retains the wheat but lets the gold sand slip out.—*The Nation*.

THE Sixth Annual Meeting of the Southern Society for Philosophy and Psychology is to be held in conjunction with the meetings of the Southern Educational Association at Chattanooga, Tennessee, December 27-29, 1910.

THE JOURNAL OF PHILOSOPHY

PSYCHOLOGY AND SCIENTIFIC METHODS

THE PROGRAM AND FIRST PLATFORM OF SIX REALISTS

PHILOSOPHY is famous for its disagreements, which have contributed not a little towards bringing it into disrepute as being unscientific, subjective, or temperamental. These disagreements are due in part, no doubt, to the subject-matter of philosophy, but chiefly to the lack of precision and uniformity in the use of words and to the lack of deliberate cooperation in research. In having these failings philosophy still differs widely from such sciences as physics and chemistry. They tend to make it seem mere opinion; for through the appearance of many figurative or loose expressions in the writings of isolated theorists, the impression is given that philosophical problems and their solutions are essentially personal. This impression is strengthened by the fact that philosophy concerns itself with emotions, temperaments, and taste. A conspicuous result of this lack of cooperation, common terminology, and a working agreement as to fundamental presuppositions is that genuine philosophical problems have been obscured, and real philosophical progress has been seriously hindered.

It is therefore with the hope that by cooperation genuine problems will be revealed, philosophical thought will be clarified, and a way opened for real progress, that the undersigned have come together, deliberated, and endeavored to reach an agreement. Such cooperation has three fairly distinct, though not necessarily successive stages: first, it seeks a statement of fundamental principles and doctrines; secondly, it aims at a program of constructive work following a method founded on these principles and doctrines; finally, it endeavors to obtain a system of axioms, methods, hypotheses, and facts, which have been so arrived at and formulated that at least those investigators who have cooperated can accept them as a whole.

After several conferences the undersigned have found that they hold certain doctrines in common. Some of these doctrines, which constitute a realistic platform, they herewith publish in the hope of carrying out further the program stated above. Each list has a dif-

ferent author, but has been discussed at length, revised, and agreed to by the other conferees. The six lists, therefore, though differently formulated, are held to represent the same doctrines.

By conferring on other topics, by interchange of ideas, and by systematic criticism of one another's phraseology, methods, and hypotheses, we hope to develop a common technique, a common terminology, and so finally a common doctrine which will enjoy some measure of that authority which the natural sciences possess. We shall have accomplished one of our purposes if our publications tempt other philosophers to form small cooperative groups with similar aims.

EDWIN B. HOLT, *Harvard University.*

WALTER T. MARVIN, *Rutgers College.*

W. P. MONTAGUE, *Columbia University.*

RALPH BARTON PERRY, *Harvard University.*

WALTER B. PITKIN, *Columbia University.*

E. G. SPAULDING, *Princeton University.*

I

1. The entities (objects, facts, *et cæt.*) under study in logic, mathematics, and the physical sciences are not mental in any usual or proper meaning of the word "mental."

2. The being and nature of these entities are in no sense conditioned by their being known.

3. The degree of unity, consistency, or connection subsisting among entities is a matter to be empirically ascertained.

4. In the present stage of our knowledge there is a presumption in favor of pluralism.

5. An entity subsisting in certain relations to other entities enters into new relations without necessarily negating or altering its already subsisting relations.

6. No self-consistent or satisfactory logic (or system of logic) so far invented countenances the "organic" theory of knowledge or the "internal" view of relations.

7. Those who assert this (anti-realistic) view, use in their exposition a logic which is inconsistent with their doctrine.

EDWIN B. HOLT.

II

1. Epistemology is not logically fundamental.¹

¹ Some of the principles of logic are logically prior to any proposition that is deduced from other propositions. The theories of the nature of knowledge and of the relation of knowledge to its object are for this reason logically subsequent to the principles of logic. In short, logic is logically prior to any

2. There are many existential, as well as non-existential, propositions which are logically prior to epistemology.²

3. There are certain principles of logic which are logically prior to all scientific and metaphysical systems.

One of these is that which is usually called the external view of relations.

4. This view may be stated thus: In the proposition, "the term *a* is in the relation *R* to the term *b*," *aR* in no degree constitutes *b*, nor does *Rb* constitute *a*, nor does *R* constitute either *a* or *b*.

5. It is possible to add new propositions to some bodies of information without thereby requiring any modification of those bodies of information.

6. There are no propositions which are (accurately speaking) partly true and partly false, for all such instances can be logically analyzed into at least two propositions one of which is true and the other false. Thus as knowledge advances only two modifications of any proposition of the older knowledge are logically possible; it can be rejected as false or it can be analyzed into at least two propositions one of which is rejected.

As corollaries of the foregoing:

7. The nature of reality can not be inferred merely from the nature of knowledge.

8. The entities under study in logic, mathematics, physics, and many other sciences are not mental in any proper or usual meaning of the word mental.

9. The proposition, "This or that object is known," does not im-

epistemological theory. Again, as theories of reality are deduced and are made to conform to the laws of logic they too are logically subsequent to logic; and in so far as logic is logically present in them it is itself a theory or part of a theory of reality.

²The terms knowledge, consciousness, and experience found in common sense and in psychology are not logically fundamental, but are logically subsequent to parts at least of a theory of reality that asserts the existence of terms and relations which are not consciousness or experience. *E. g.*, the psychical is distinguished from the physical and the physiological.

Now idealism has not shown that the terms knowledge, consciousness, and experience of its epistemology or of its theory of reality are logically fundamental or indefinable, nor has it succeeded in defining them without logically prior terms that are elsewhere explicitly excluded from its theory of reality. In short, idealistic epistemologists have borrowed the terms knowledge, consciousness, and experience from psychology, but have ignored or denied the propositions in psychology that are logically prior. In other words, epistemology has not thus far made itself logically independent of psychology nor has it freed itself logically from the common-sense dualism of psychology. On the contrary, epistemology from Locke until to-day has been and has remained, in part at least, a branch of psychology.

ply that such object is conditioned by the knowing. In other words, it does not force us to infer that such object is spiritual, that it exists only as the experiential content of some mind, or that it may not be ultimately real just as known.

WALTER T. MARVIN.

III

I. *The Meaning of Realism.*

1. Realism holds that things known may continue to exist unaltered when they are not known, or that things may pass in and out of the cognitive relation without prejudice to their reality, or that the existence of a thing is not correlated with or dependent upon the fact that anybody experiences it, perceives it, conceives it, or is in any way aware of it.

2. Realism is opposed to subjectivism or epistemological idealism which denies that things can exist apart from an experience of them, or independently of the cognitive relation.

3. The point at issue between realism and idealism should not be confused with the points at issue between materialism and spiritualism, automatism and interactionism, empiricism and rationalism, or pluralism and absolutism.

II. *The Opposition to Realism.* Among the various classic refutations of realism the following fallacious assumptions and inferences are prominent.

1. The Physiological Argument: The mind can have for its direct object only its own ideas or states, and external objects, if they exist at all, can only be known indirectly by a process of inference, of questionable validity and doubtful utility. This principle is fallacious because a knowing process is never its own object, but is rather the means by which some other object is known. The object thus known or referred to may be another mental state, a physical thing, or a merely logical entity.

2. The Intuitional Argument: This argument stands out most prominently in the philosophy of Berkeley. It has two forms. The first consists of a confused identification of a truism and an absurdity. The truism: *We can only know that objects exist, when they are known.* The absurdity: *We know that objects can only exist when they are known.* The second form of the arguments derives its force from a play upon the word idea, as follows: Every "idea" (meaning a mental process or state) is incapable of existing apart from a mind; every known entity is an "idea" (meaning an object of thought); therefore, every known entity is incapable of existing apart from a mind. It is to the failure to perceive these fallacies that idealism owes its supposedly axiomatic character.

3. The Physiological Argument: Because the sensations we receive determine what objects we shall know, therefore the objects known are constructs or products of our perceptual experience. The fallacy here consists in arguing from the true premise that sensations are the *ratio cognoscendi* of the external world, to the false conclusion that they are therefore its *ratio fiendi* or *essendi*.

III. *The Implications of Realism:*

1. Cognition is a peculiar type of relation which may subsist between a living being and any entity.

2. Cognition belongs to the same world as that of its objects. It has its place in the order of nature. There is nothing transcendental or supernatural about it.

3. The extent to which consciousness pervades nature, and the conditions under which it may arise and persist, are questions which can be solved, if at all, only by the methods of empiricism and naturalism.

W. P. MONTAGUE.

IV

1. The object or content of consciousness is any entity in so far as it is responded to by another entity in a specific manner exhibited by the reflex nervous system. Thus physical nature, for example, is, under certain circumstances, directly present in consciousness.

In its historical application, this means that Cartesian dualism and the representative theory are false; and that attempts to overcome these by reducing mind and nature to one another or to some third substance, are gratuitous.

2. The specific response which determines an entity to be content of consciousness, does not directly modify such entities otherwise than to endow them with this content status. In other words, consciousness selects from a field of entities which it does not create.

In its historical application, this implies the falsity of Berkeleyan and post-Berkeleyan idealism in so far as this asserts that consciousness is a general *ratio essendi*.

3. The response which determines an entity to be content, may itself be responded to and made content in like manner. In other words, the difference between subject and object of consciousness is not a difference of quality or substance, but a difference of office or place in a configuration.

In its historical application, this implies the falsity not only of the Cartesian dualism, but of all idealistic dualisms that, because they regard subject and object as non-interchangeable, conclude that the subject is either unknowable, or knowable only in some unique way such as intuitively or reflexively.

4. The same entity possesses both immanence, by virtue of its membership in one class, and also transcendence, by virtue of the fact that it may belong also to indefinitely many other classes. In other words, immanence and transcendence are compatible and not contradictory predicates.

In its historical application, this implies the falsity of the subjectivistic argument from the ego-centric predicament, *i. e.*, the argument that because entities are content of consciousness they can not also transcend consciousness; it also implies that, so far as based on such subjectivistic premises, the idealistic theory of a transcendent subjectivity is gratuitous.

5. An entity possesses some relations independently of one another; and the ignorance or discovery of further relations does not invalidate a limited knowledge of relations.

In its historical applications, this implies the falsity of the contention of absolute idealism that it is necessary to know all of an entity's relations in order to know any of its relations, or that only the whole truth is wholly true.

6. The logical categories of unity, such as homogeneity, consistency, coherence, interrelation, etc., do not in any case imply a determinate degree of unity. Hence the degree of unity which the world possesses can not be determined logically, but only by assembling the results of the special branches of knowledge. On the basis of such evidence, there is a present presumption in favor of the hypothesis that the world as a whole is less unified than are certain of its parts.

In its historical application, this implies that the great speculative monisms, such as those of Plato, Spinoza, and certain modern idealists, are both dogmatic and contrary to the evidence.

RALPH BARTON PERRY.

V

The realist holds that things known are not products of the knowing relation nor essentially dependent for their existence or behavior upon that relation. This doctrine has three claims upon your acceptance: first, it is the natural, instinctive belief of all men, and for this, if for no other reason, puts the burden of proof upon those who would discredit it; secondly, all refutations of it known to the present writer presuppose or even actually employ some of its exclusive implications; and, thirdly, it is logically demanded by all the observations and hypotheses of the natural sciences, including psychology.

Involved more or less intimately in a realistic view are the following:

1. One identical term may stand in many relations.
2. A term may change some of its relations to some other terms without thereby changing all its other relations to those same or to other terms.
3. What relations are changed by a given change of relation can not always be deduced merely from the nature of either the terms involved or their relation.
4. The hypothesis that "there can be no object without a subject" is pure tautology. It is confessedly a description of the cognitive situation only; and it says, in effect, that everything experienced is experienced. It becomes significant only by virtue of the wholly unwarranted assumption that doctrines 1, 2, and 3, above given, are false. This assumption, however, is fatal to the idealist's supposed discovery, inasmuch as it means that there can be no true propositions. In conceding this, the idealist refutes himself.
5. In no body of knowledge, not even in evidences about the nature of the knowledge relation, can we discover that possible knowledge is limited or what its limits may be.
6. Entities are transcendent to the so-called "knowing mind" or "consciousness" only as a term is to the relations in which it may stand, viz., in two radically different manners: first, as the term is not identical with a particular relation in which it stands, so too a thing in the knowledge relation is not the relation itself; secondly, as the term may enter into or go out of a particular relation, without thereby being changed essentially or destroyed, so too can an object of knowledge exist prior to and after its entrance into or removed from the knowledge relation. Transcendence thus means, in the first place, distinctness and, in the second place, functional independence.
7. There may be axiomatic truths or intuitive truths. But the fact that a truth belongs to either of these classes does not make it fundamental or important for a theory of knowledge, much less for a theory of reality. Like all other truths, it too must be interpreted in the light of other relevant truths.
8. Though terms are not modified by being brought into new contexts, this does not imply that an existent can not be changed by another existent.

WALTER B. PITKIN.

VI

1. Realism, while admitting the tautology that every entity which is known is in relation to knowing or experience or consciousness, holds that this knowing, etc., is eliminable, so that the entity is known as it would be if the knowing were not taking place. Briefly, the

entity is, in its being, behavior, and character, independent of the knowing. This position agrees with common sense and with science in holding (1) that not all entities are mental, conscious, or spiritual, and (2) that entities are knowable without being known.

2. The fact that terms are in the cognitive relation does not imply that the terms are mutually dependent on, or capable of modifying, either each other or the relation, any more than this dependence, etc., is implied for any two terms in any other relation. The proposition that there is this dependence, etc., constitutes the "internal view" of relations.¹ Most of those systems which are opposed to realism can be shown to presuppose this "internal view," but this view can be shown to be self-contradictory and to presuppose the "external view."

3. That position which is based in part on the acceptance and the consistent use and development of the implications of those logical doctrines which are presupposed as a condition for any position being stated, argued, and held to be true has, thereby, a strong presumption created in favor of its truth.²

4. There is at least one logical doctrine and one principle which are ultimately presupposed by any system which is held to be true. That doctrine is the "external view" of relations, and the principle is that truth is independent of proof, although proof is not independent of truth. The first of these means, briefly:

5. (1) That both a term and a relation are (unchangeable) elements or entities; (2) that a term may stand in one or in many relations to one or many other terms; and (3) that any of these terms and that some of these relations could be absent or that other terms and relations could be present without there being any resulting modification, etc., of the remaining or already present terms or relations.

6. By this "external view" it is made logically possible that the knowing process and its object should be qualitatively dissimilar. (Cf. 1.)

¹ To hold the "internal view" means, in my opinion, to hold that, in order that a relation may relate, the relation must either (1) penetrate its terms, or (2) be mediated by an underlying (transcendent) reality. From the penetration there is deduced (a) modification, or (b) similarity, or (c) the generation of a contradiction. Cf. my paper, "The Logical Structure of Self-refuting Systems," *Phil. Review*, XIX., 3, pp. 277-282.

² Such a system I hold to be realism, its chief feature being the interpretation of the cognitive relation in accordance with the "external view." This "external view" can be held to be true quite consistently with itself, and is in this sense, I hold, self-consistent, as is also, in my opinion, realism. Accordingly I hold further that realism is not a merely dogmatic system, and that, as self-consistent, it refutes and does not merely contradict certain opposed systems which, as based on the "internal view," are self-refuting.

7. The principle (see 4) means, that, while on the one hand no proposition is so certain that it can be regarded as exempt from examination, criticism, and the demand for proof, on the other hand, any proposition, if free from self-contradiction, may be true (in some system). In this sense every proposition is tentative, even those of this platform.

Corollary.—It is impossible to get a criterion, definition, theory, or content for the concept “absolute” by which it can be absolutely known or proved that any criterion, definition, theory, or content is absolutely true, *i. e.*, is more than tentative. The most that can be claimed for such a criterion, etc., is that it may be absolutely true, although not proved to be.

8. Any entity may be known as it really is in some respects without its being known in all respects and without the other entities to which it is related being known, so that knowledge can increase by *accretion*.

9. Knowing, consciousness, etc., are facts to be investigated only in the same way as are other facts, and are not necessarily more important than are other facts.

10. The position stated in this platform, which is a position concerning knowing as well as other things, can apply to itself, as a special instance of knowledge, all its own propositions about knowledge.³

EDWARD GLEASON SPAULDING.

THE CONCEPTION OF PHILOSOPHY IN RECENT DISCUSSION¹

ONE might roughly divide the history of modern American philosophy into three periods, the theologic, the metaphysical, and the scientific. The first of these periods might be dated from the beginning of the *Journal of Speculative Philosophy*, the second from the beginning of the *Philosophical Review*, and the third from the JOURNAL OF PHILOSOPHY, PSYCHOLOGY, AND SCIENTIFIC METHODS. This division into periods probably does as much violence to the facts of the case as any other, but it has the merit of calling attention to a certain shifting of the center of gravity of philosophic discussion. During the dominance of the St. Louis School, the motive of philosophy was well reflected in the motto of the old *Journal of Specu-*

³ I hold that for this reason the position here stated is self-critical, and that it is this which distinguishes it from a large class of historical systems, notably phenomenalism, subjective and objective idealism, and absolutism.

¹ Read at the New Haven meeting of the American Philosophical Association.

lative Philosophy: "Philosophy can bake no bread, but she can procure for us God, freedom, and immortality." The leaders of this movement were not academic or professional teachers of philosophy, but rather, like Brockmeyer and Dr. Harris, practical men who believed they had found their superior point of view, fruitful insight into the fields of religion, art, history, education, and even practical politics. With the founding of the *Philosophical Review*, the control of philosophy passed into the hands of a number of college professors, most of whom had been taught in Germany. This tended to make philosophy more secular, and the dominant conception of philosophy was the one which associated it most intimately with science. Philosophy was thus conceived as an architectonic science, criticizing the assumptions of the special sciences, and supplementing the latter by building up their results into a complete *Weltanschauung*. This view was held by most of the pupils of Wundt, and, in this country, perhaps most characteristically carried out by Professor Ladd. At any rate for our purpose, this second period may be said to have ended with the publication of Royce's "The World and the Individual" and Ward's "Naturalism and Agnosticism."

Since the publication of Dewey's "Studies in Logical Theory," philosophy seems to have entered on a new career, the distinctive aims of which are, on one hand, to give up the old idea of philosophy as a critique of the special sciences, and, on the other hand, to make philosophic discussion itself scientific, *i. e.*, to narrow it down to certain definite and decidable issues. Professor Woodbridge put the first of these aims to the foreground in his presidential address before the Western Philosophical Association in 1903 thus: "I modestly shrink from a calling that imposes upon me the necessity of completing the fragmentary work of the physicist, the chemist, and the biologist, or of instructing these men in the basal principles of their respective sciences. My work lies in a totally different sphere, deals with totally different problems, and can be pursued in independence of them as much as they pursue their work in independence of me."²

Professor Dewey emphasizes the second of the above-mentioned aims. He expressly breaks with the tradition that philosophy has to do with a certain mode of life or with such concepts as God, freedom, and immortality. In an article on the "Postulates of Immediate Empiricism,"³ he tells us bluntly that philosophic conceptions have outlived their usefulness considered as a species of sanctions, and that the only road open is that of immediate empiricism, which we are assured is identical with that of science.

² *Phil. Review*, Vol. 12, pp. 370 f.

³ This JOURNAL, Vol. II., p. 399.

It is thus seen that while the movement under consideration tends to dissociate philosophy not only from ethics and theology, but also from the *content* of the special sciences, it really aims to erect philosophy into a modest special science, dealing with definite problems and giving definite answers, so that he who runs in this busy land may read the authoritative answer.

In spite of all appearances to the contrary, Professor James's recent books are no exception to this general tendency. With all his intensely human sympathies, his conception of philosophy is really of this last type. To students of philosophy his volume on "Pragmatism" simply raised a highly technical issue: How is truth to be defined? Nor does the volume on a "Pluralistic Universe" center its attention on a genuinely new view of the universe. Accepting the current vague theism, Professor James devotes his energies to disproving one of the ways in which this theism is sometimes established, viz., the Royce-Bradleyan arguments for the absolute. To those who come to philosophy for the relief of a certain cosmic anguish, who are troubled by old-fashioned doubts about the meaning of life and destiny, who can not see whether there is or is not a divine government of the world in which we find ourselves, Professor James does not seem to offer any new or direct answer.

If any one is inclined to minimize the extent to which the historical and wider conception of philosophy has been superseded by this narrower conception, let him reflect on the fate of Professor Ormond's recent volume, the "Concepts of Philosophy." This important book, the result of a whole lifetime of reflection covering the whole field of philosophy, has scarcely caused a ripple on the philosophic waters, and to many of our younger philosophers it appeared simply as a survival from a past which philosophy has rightly outlived.

Now the effect of our current reduction of philosophy to a purely formal discipline, viz., epistemology, can not be said to have as yet increased vital interest in philosophy. Pragmatism, it is true, has made a great stir in our popular magazines, but is it really the pragmatic theory, rather than Professor James's striking style? As for his younger apostles, many of us, I dare say, have found them more brilliant than illuminating. Certainly flashes of genius can not permanently take the place of the steady light of reason. In spite of the fact that pragmatism has now been before the public for over ten years, its adherents show no tendency to apply it in any fruitful way to the problems of ethics, theology, or esthetics,—not to mention other practical sciences. Professors Dewey and Tuft's superb text-book on "Ethics" is simply a continuation of the anthropologic method so clearly applied in this field by Wundt and

Höfding. In theology the anti-historical bias of pragmatists generally prevents them from joining forces with the only group of genuine pragmatic theologians, the Ritschlian—for the latter trace their descent from Kant, and this is anathema to the ordinary pragmatist.

Nor has the new realism been any more fruitful. It is only a confirmed idealist like Royce or Münsterberg that can still find his philosophy in such intimate contact with the content of life that he has to overstep the bounds of his particular academic function.

It may be noted in passing that while philosophers have thus been withdrawing from contact with science, scientists have not been afraid to lay their secular hands on the sacred ark of metaphysics—witness Russell among mathematicians, Ostwald among chemists, Driesch and his disciples among biologists. The significance of this latter movement for philosophy is a very important question which the limits of this paper prevent us from considering now—we only need to notice here the irrepressible nature of metaphysics. No sooner is it suppressed in one place than it suddenly springs up in most unexpected quarters.

It is also worthy of note that in spite of Professor Dewey's yielding of what he considers the debatable fields of philosophy, and his concentration on those problems which alone admit of a scientific solution, the result of his work has not certainly so far reduced the irreconcilable differences between philosophers, nor does it even seem to tend in that direction.

I shall attempt to question later whether this excessive modesty on the part of recent philosophy is a genuine virtue. So far I have only attempted to show that if a virtue at all, it has not been a very profitable one.

The cause of this last change in the conception of philosophy is to be sought in the conditions of university teaching, for nearly all of our philosophers are now professional teachers. The period between 1890 and 1900 was one of rapid expansion for the American colleges. The most important of them were then transformed into real universities. Now the conditions of university teaching require a far higher degree of specialization on the part of pupils and teachers than the old college did. The old college teacher—of whom the late Professor Garman was a striking example—had to teach the whole field of philosophy, and could not, therefore, avoid bringing his subject into intimate relation with the various branches of science and life. The university teacher of logic, psychology, metaphysics, or even of ethics, as a rule feels no responsibility for the student's total view of the universe. Few teachers in any department of a university have the time or courage to poach on another's preserves,

and teachers of philosophy are especially timid about venturing into fields in which they are not specialists. Thus the old idea of philosophy as a kind of universal knowledge, so vigorously maintained by Paulsen, no longer finds any adherents.

Now if we assume the possibility or desirability of philosophy in the old sense, *i. e.*, a working view of the universe and of man's place in it, it is of course indispensable for the philosopher to be acquainted with the results and something of the procedure of the special sciences. But is this task really as impossible as our excessively modest friends would have us believe? Are we prepared to accept the view that the work of the special sciences is of an esoteric nature which none but the initiated may comprehend? If they do have something to tell to the world at large, why may not the philosopher, if he takes the trouble, learn it as well as any one else? With the rapid expansion of the different sciences this task may seem impossible, and it is certainly a difficult one. Moreover it subjects the philosopher to the most perilous of all dangers, the danger of being considered a dilettante. But the wisdom of life seems to show that as much is lost by excessive timidity as by recklessness.

The great strength of the new movement lies in the serious way in which it takes and applies the idea of philosophy as a science. Once we consistently adopt this ideal there is no doubt but that a good deal of what has always been regarded as philosophy must go overboard. But is it necessary to accept this ideal? So long as life is wider than knowledge, may not the task of the philosopher be different from that of the scientist? There are undoubtedly many fields of philosophy, like logic, which are capable of being developed into strict sciences, and any progress in that direction is undoubtedly a great gain, but to admit this is not to admit that the whole of philosophy can be reduced to logic or epistemology, or to any science at all.

The idea that philosophy may not be a science is so repugnant to professional philosophic teachers that it seems almost futile to maintain such a thesis. The reasons for such repugnance, however, are extraneous rather than essential. The wonderful achievements of science during the past one hundred years have thrown a glamour over the world itself so that even philosophers are not free from the allurements thereof. Moreover, every one who has to teach undergraduates is forced to emphasize the certainty and definiteness of philosophic doctrines as against the vague and arbitrary opinions of untrained minds. One fact, however, must always prove a veritable thorn in the side of those who believe philosophy to be a science—and that is the fact that in spite of 2500 years of warfare, in spite of the fact that all methods have been tried—the mathematical by

Spinoza, the experimental by Hume, and so on,—there is still a complete absence of any consensus. There is no such thing as a definite philosophy which can be taught impersonally. There are still only philosophies of different schools, and the choice between them is largely a matter of vital or temperamental preference.

This absence of any consensus has, of course, been only too obvious to the rest of the world, and those who maintain the scientific character of philosophy have had a hard time trying to minimize or explain away the fundamental differences of the different schools. From time to time, however, some conscientious person suggests the other alternative, viz., the construction of a philosophic platform which will bring into clearness the fundamental agreements. Thus it is hoped to usher in the philosophic millennium, when the idealistic lamb shall lie down beside the realistic wolf, or perhaps when some pragmatic tiger shall so have swallowed up all opposition that complete peace shall reign thereafter—at any rate, the swords of controversy shall be changed into the plowshares of empirical investigation. But the believers in philosophy as a science seem peculiarly unresponsive to this appeal. Like other Utopian ideals, it does not seem to have the potency to bring warring schools together, and the reign of complete peace among philosophers seems as far off as the reign of complete justice on earth, which Renan confidently tells us is at least 100,000 years off.

No doubt there has always been controversy among scientists also, but those have been restricted to particular fields and have always been regarded as capable of being definitely decided one way or another, witness the heliocentric theory, natural selection, etc. Can philosophy show any such results? An attempt to formulate propositions to which all philosophers could subscribe would be devoid of genuine philosophic significance, for these propositions would have different connotations in the different schools.

A few years ago Dr. Kate Gordon, in an article entitled "*Metaphysics as a Branch of Art*,"⁴ propounded the interesting thesis that art and metaphysics deal with general ideas, while science deals with particular facts—that the truths of art and of metaphysics are felt truths, but are not facts which have at any time been demonstrated (p. 365). In a subsequent controversy with Dr. Ewer, her challenge that he point out some respect in which metaphysics and science agree, remained unanswered. Now it is easy enough to deny her thesis by showing the inadequacy of her antithesis between particular facts and general ideas. Well-developed sciences deal with general laws rather than with particular facts; and mathematics is as much a study of the implications of certain general ideas as a study

⁴ This JOURNAL, Vol. III., pp. 365 sq.

of particular facts. It is likewise easy to show that the fundamental motive for metaphysics is the same as that of pure science generally, viz., *the desire to know the truth*.⁵ Philosophy and science both agree in their desire to eliminate arbitrary opinion, in their insistence on method or system and on logical vigor or consistency, and in their effort to eliminate external authority, prejudice, personal interest and the like, in the consideration of what is true.

At the same time a careful consideration of its history shows that, unlike science, philosophy has never been able entirely to dispense with pure speculation, nor has it been able entirely to eliminate the bias of temperament, and in these respects philosophy resembles a certain art, viz., the art of poetry and of reflective literature generally. Actual scientific knowledge is too fragmentary to enable us to form a complete picture of the world to which we must react, and so imagination must be called in. Sometimes imagination and science work together, but often imagination does all the work and science is a silent spectator, as in the case of Fechner's "Zend-Avesta."

It has generally been assumed that of two opposing systems of philosophy, *e. g.*, realism and idealism, one only *can* be true and one *must* be false; and so philosophers have been hopelessly divided on the question, which is the true one. The assumption back of this attitude is that philosophy is determinate knowledge which will not admit of variation. But is this assumption necessary? Can not two pictures of the same object both be true, in spite of radical differences? The picture which the philosopher draws of the world is surely not one in which every stroke is necessitated by pure logic. A creative element is surely present in all great systems, and it does not seem possible that all sympathy or fundamental attitudes of will can be entirely eliminated from any human philosophy. The method of exposition which philosophers have adopted leads many to suppose that they are simply inquirers, that they have no interest in the conclusions at which they arrive, and that their primary concern is to follow their premises to their logical conclusions. But it is not impossible to think that the minds of philosophers sometimes act like those of other mortals, and that, having once been determined by diverse circumstances to adopt certain views, they then look for and naturally find reasons to justify these views.

⁵ This last assertion may by many be regarded as a blatant platitude, but it is really an important truth which needs to be vigorously defended against those who would subordinate pure science to its practical applications, and metaphysics to theological and ethical considerations. Whatever its origin, the passion for knowledge is with many natures as profound as the desire for material comfort, and the satisfaction of this passion as important as the invention of gasoline engines and other philosophically doubtful blessings.

There are a number of points in which the method of philosophers is precisely that of literary essayists of the type of St. Benre, Matthew Arnold, Stevenson, or Lowell. Both use examples to suggest or illustrate rather than to demonstrate. In science this would be called the fallacy of one example. In both literature and philosophy the temper of the lesser Napoleon, *aut Cæsar aut nullus*, is very prominent. In science this might be called the "all or nothing" fallacy. Constant reservations and numerous qualifications destroy literary sweep, and take away the air of profundity from philosophic discussion. Some philosophers, notably Aristotle and St. Thomas, might perhaps be excepted from the last statement, but in spite of all our hankering after the epithet science, I can not see that we have been making much progress in this habit of self-control against the extravagance of generalization. Again, both literature and philosophy work by appealing to certain reigning idols. These idols came into vogue in different ways. They are seldom refuted or directly overthrown. Generally they are simply outlived, or they do not survive the change of fashion. In the latter eighties or in the earlier nineties the term *relation* was a magic word to conjure with. It was brought into mode by Thomas Hill Green, and died a natural death with the eclipse of his influence. To-day if anything is characterized as *experiential*, *functional*, or *dynamic*, that is enough to allow it to pass all the watch-dogs of philosophic criticism, and to characterize anything as *static* is to consign it to the lowermost depths from which no power can rescue it. I am not anxious to bring down the wrath of the gods by questioning the all-sufficient potency of such terms as *experience*, *evolution*, etc.; but may I ask what progress would mathematical physics have made if every time one approached a problem of stresses, he were frightened off by the warning that he must not for a moment entertain that most heinous criminal, the static point of view? I humbly agree with those who claim that the static point of view is mechanical and lifeless and, therefore, inapplicable to the entire universe, but I am quite sure that the dynamic point of view itself may be mechanical and lifeless.

Lastly, literature and philosophy both allow past idols to be resurrected with a frequency which would be truly distressing to a sober scientist. If a philosophic theory is once ruled out of court, no one can tell when it will appear again. There is no doctrine of *res adjudicata*, or statute of limitations in metaphysics. Those of us who have been taught to read the Greek philosophers with a degree of care have always supposed that Plato had once for all and forever refuted the Protagorean doctrine of absolute relativism, and now Mr. Schiller with characteristic English conservatism wants

us to move the hands of the philosophic clock back a trifle of over 2300 years.

In thus pointing out certain respects in which philosophy resembles literature more than science, I do not mean, of course, to imply that it would be well for philosophy if it ceased to aim at scientific rigor. Let philosophy resolutely aim to be as scientific as possible, but let her not forget her strong kinship with literature.

This brings us to a very practical query. It has always been assumed that the affiliations of the American Philosophical Association are with the American Association for the Advancement of Science. Now the latter body is predominantly an association of physical scientists, while the various social-science associations now meeting in New York form an entirely distinct group. Now if there is an iota of justice in the contention of this paper, the natural affiliations of philosophers should be as much if not more with the social as with the physical sciences. Has philosophy more affinity for chemistry than for political science? or are the methods of the philosopher more like those of the cytologist than of the sociologist? Tradition would have us believe that the natural sciences are exact, that the social sciences are inexact, and that philosophy resembles the first group. But this is questionable from all its three ends.

A philosophy which would recognize its kinship with literature and with the social sciences would be truly humanistic. It would aim to be scientific, but it would not be afraid to go beyond science just as life and conduct must go beyond knowledge. This, however, would be only a reassertion of the old ideal of philosophy as mediating between the *lebensanschauung* of literature and the social sciences, and the *weltanschauung* of the natural sciences. We may laugh at system building as much as we please, but some such ideal must be held up by somebody if the present anarchic tendency to overspecialization is to be controlled in the interests of sanity. If not, we shall soon have a condition in which every one is a specialist and no one can intelligently follow his neighbor,—a condition to which meetings of our mathematical societies are rapidly approximating.

The above ideal of philosophy is also one which gives special significance to the teaching of it in our American colleges. It is in harmony with the recent reassertion of the old ideal of culture as the aim of college training, so vigorously put forth recently by both President Lowell and President Hadley. If the elective system is to be continued in any way, and if the college is to train men rather than entomologists or geometers, we need some integrating study that shall keep apace with and balance the progress of specialization. We have been too much afraid of the bugbear of dilettantism. Even in

science half a loaf is better than nothing at all, especially if the whole loaf is unattainable even to the specialist himself.

MORRIS R. COHEN.

COLLEGE OF THE CITY OF NEW YORK.

THE PROBLEM OF TIME IN MODERN PHILOSOPHY¹

AS is well known, Kant connected space with the external sense and time with the internal sense. In so doing he was giving an obvious expression of a point of view which had become or was becoming habitual with many philosophers. From that point of view the mind was not regarded as the product of conditions which antedated its own existence. In that case time could not readily be connected with the internal sense. The mind was regarded rather as the knower of a world which either passed before it or could be taken up into itself through synthetic processes. For purposes of record, knowledge of the world in any specific instance could be thought of as an event, and the synthesis as actually performed by an individual mind could be thought of as an occurrence in the history of that mind. But judged metaphysically, the world known or synthesized was apparently implied as a datum logically given in its entirety before knowledge of it or synthesis of it could take place. A contrast between the temporal and the timeless was, thereby, defined. Any time span could mean only an amount of knowledge or of synthesis of a whole which, as a whole, is timeless.

Illustrations of this general point of view and its metaphysical results are many. Take, for instance, these statements from Bradley's "Appearance and Reality": "What is impossible is to construct absolute life in detail, to have the specific experience in which it consists," and yet "we can form the general idea of an absolute experience in which phenomenal distinctions are merged, a whole become immediate at a higher stage without losing any of its richness."² Or take this from Royce's "The World and the Individual": "Now, in time, I seek, as if it were far beyond me, that goal of my Selfhood, that complete expression of my will, which in God, and for God, my whole life at once possesses."³ Such statements appear to be intelligible only if we regard the mind's relation to reality as a sort of temporal approach to a timeless whole. As the expanding circles in a pool find their limits in the pool's extent,

¹ Contributed to the discussion of the problem of time in its relation to present tendencies in philosophy, at the meeting of the American Philosophical Association, at New Haven, December 27-29, 1909.

² *Op. cit.*, p. 160.

³ *Op. cit.*, Vol. II., p. 150.

which, even as they expand, is itself fixed, so my experience or my mind, as it enlarges, finds its limits in an absolute experience or an absolute mind which, even now, while my enlargement proceeds, undergoes itself no expansion.

This conception of the mind's relation to reality has, in one form or another, motivated the greater part of modern philosophy, set its problems, and provided their solutions. In so doing its achievements and successes have been noteworthy. Their present philosophical value has, however, become a matter of serious doubt largely because it is becoming less habitual among philosophers to think of the mind's relation to reality after the manner of this suspected philosophy. Many, to-day, can think of the mind as reality's knower only with difficulty. They can recognize that men have so thought of it and that some still so think. But they can not think that way for themselves and at the same time cherish the belief that they are thinking adequately, sanely, and truthfully.

Let it be supposed that whatever those facts may be that we denominate "mind" or "experience," they constitute with the rest of facts no distinction between knower and known, they form no widening circle in a shoreless pool, they form no incomplete will whose completeness they none the less imply; or let it be supposed that what we call knowledge is not a time span's grasp of a reality which that span would envisage as a whole—then the philosophy of the absolute, its motive, its problems, and its solutions appear strange and artificial. To put the matter in positive terms—let knowledge be conceived to be a natural event like a storm or an earthquake, then the only problems of knowledge as knowledge which we can have are those that are involved in its definition and in seeking its natural antecedents and its natural consequences. There can be no more of a problem of the relation of knowledge to reality than there can be of the relation of a storm to reality; but there can be problems of what knowledge is and what precedes and follows it just as there can be problems of what an earthquake is and what precedes and follows it. Such problems will hardly carry us to the absorption of time in eternity or lead us to conceive, however inadequately, of a whole become immediate at a higher stage without losing any of its richness.

The oppositions which current studies in philosophy present, I take, therefore, to be radical and far-reaching. Controversies are no longer about methods and results, but about initial facts and points of departure. But points of departure can not be set down as merely arbitrary and unmotivated assumptions. Nor can they be justly regarded as convenient hypotheses whose claim to acceptance or recognition resides in the facility with which they can be used.

They are rather to be regarded as simplifications of those more general conceptions which the significant achievements of knowledge lead us to entertain. What we call our view of the world is by no means simply the outcome of our philosophy: it is equally the picture of things which we naturally form as a result of the significant deliverances of knowledge in the concrete. It is necessary, therefore, to place points of view in that more general setting of which they are simplifications.

What then is the general setting which motives the assumptions of that philosophy which can regard experience as a time span within a timeless whole? The question may be answered by an examination of the philosophies themselves. The examination would, I think, reveal that the general setting is that afforded by Newtonian physics and the astronomical achievements of such men as Copernicus and Laplace. Upon the background furnished by such a setting is reflected such diverse things as Kant's "*Kritik der Reinen Vernunft*" and Addison's hymn, "The spacious firmament on high." Indeed that background constituted the general and controlling world view for several centuries. Men viewed the world as through a telescope, and philosophy took its departure from such a view simplified and reduced to terms of a mind and its object. As the eye at the telescope watched for some portion of the heavens to swing within its field of vision, so the mind watched for reality to appear within the limits of experience.

How little other sciences besides astronomy and physics contributed to shape the general view of the world in most men's minds is seen as late as 1872 in the reception accorded Emil du Bois-Reymond's sensational address at Leipzig, "*Ueber die Grenzen des Naturerkennens*." The copy I have of that address is of the seventh edition of 1891, and by that time it had been translated into English, French, Italian, and Servian! It is well known that that address elevated astronomy to the ideal of knowledge and that it pictured the limits of knowledge attainable by even a finite mind in terms of a mind to which, in the words of d'Alembert, "the whole world would be one single fact and one great truth."

Now such a general view of the world appears to be one where space conceptions dominate time conceptions. It is the world "as all there," so to speak, which has captured the imagination: a world as a totality which may admit certain internal changes in the relations of its elements to one another, but which, as a whole, is forever and permanently "there" "where." Such a view makes my present experience, my time span, a given *presence* of the whole, a given "hereness" of it. Such a view makes it natural for Kant to affirm, "that, in order to know that there is something permanent,

which corresponds to the conception of substance, and thus to prove the objective reality of the conception, we must have the perception of that which is in *space*, in other words, the perception of matter; *for only space has in it anything permanent*, whereas time, and therefore all that exists in the inner sense, is in perpetual flux.”⁴

In short, then, I take it, that the philosophy of the eternal and the absolute is a philosophy which flourishes where the picture men naturally form of the world is an astronomical or spatial picture. There is the world; here is the mind. There is the outward; here is the inward. There is the external meaning of ideas; here is their internal meaning. There is the object; here is the subject. There is all possible experience; here is my actual and incomplete experience. “There” and “here” is the basal contrast; and as “here” is “now,” time is genuine, but it is never “there,” for if it were, all would be “here” and “now.”

The picture of the world which the notable achievements of knowledge lead us to form to-day is the picture of a world in the making, an incomplete and unfinished world, a world which has had a past and will have a future. It is almost needless to say that this picture is formed under the controlling influence of biological and evolutionary conceptions. It is the picture of the world as a thing with a history. And this history discloses not the possible successive arrangements or relations of the elements of one vast whole which is always there, but, if we may speak of a whole at all, it discloses that whole as itself changing and growing, as a thing which could never be grasped by any mind as one single fact and one great truth. The possibility of permanence in the world is not space, as with Kant, but time, for we can say of things that the place which knew them knows them no more. Only that is permanent which *lasts*, but space held much which it holds no longer. Thus time tends to become as dominant and controlling a factor in our thinking as space was formerly. It is Darwin’s picture which tends to replace that of Newton.

A warning should doubtless be sounded lest philosophers, with their imaginations fired by the more recent vision, should forget that there is the spacious firmament on high, lest they should exalt the world’s ceaseless flux, but neglect its stable factors. Yet, even so, it needs little wit to see that the newer vision means a radical transformation of philosophy. Most radical, I think, is the transformation likely to be wrought in our conception of thought and its relation to the rest of things. It seems to me very difficult for one to believe that consciousness is an event in the world’s history and still hope to understand that event, still hope to throw light on the relation of thought to the rest of things, if he follows the traditional

⁴ Watson’s “Selections,” p. 127.

lines of modern epistemology and psychology. How can one longer deal with the old antitheses between the ego and the non-ego, subject and object, the mind and the world, thought and reality, ideas and things, the internal and the external, if one is genuinely convinced that sense organs, a nervous system, and exciting stimuli must first be *produced* before thinking can occur? I am well aware of the obvious rejoinder at this point, namely, that we can know nothing about sense organs and the rest except as they are given in our experience. But the rejoinder most successfully misses the point. For what is to be our attitude of the insistent lesson of our experience of things is that experience itself is a happening? How can I take the necessity I am under of experiencing things in order to have knowledge of them as the fundamental fact in my philosophy, if the knowledge I thus acquire reveals my experience of things as an event in their history? There are many who can not. Those who can not, believe that whatever problems consciousness, knowledge, and experience present, they must be handled from a point of view radically different from that which has quite generally prevailed since the time of Locke. The eye at the telescope serves them no longer as a figure.

The historical point of view is significant not only as a new point of departure, but also because it tends to discredit many of those problems of philosophy that have often been regarded as persistent. From among them I select for illustration the problem, How can experience give us knowledge of reality? Now, if experience is an event which happens to nature in the course of her history, if it is an event in her life, so to speak, how can we define a distinction between reality and experience which would give us an important and vital philosophical problem? In other words, does the event we call experience point to anything besides its antecedents and its consequences? Is there anything in the situation which should lead us to suppose that besides a reference to its antecedents and its consequences, experience has also another reference, to something which is neither an antecedent nor a consequence, but something which we may regard as the reality which experience represents or which somehow appears in experience? I venture still another form of the same question. If the pointings of experience are temporal, to the past and to the future, but not spatial, to an outside or an other, or to something at right angles with itself, what philosophical problem of reality as opposed to experience can we scare into being? Surely such questions make such a problem look queer and artificial. Again, if we can discover no genuine antithesis between reality and experience, there remains no compulsion to conclude that what precedes and follows experience is itself also experience or at best a

picture painted only in the colors of experience. For experience discloses the history and connections of its own facts. To ask, therefore, whether these facts actually had this history or do have these connections, is simply to ask in general form such questions as these: Did the cave bear live before man? or Does the Atlantic Ocean lie between Europe and America? In brief, experience is a natural event; it is not a representation of nature.

If experience provokes no problem of reality as opposed to itself, it would appear that metaphysics discovers its own problems not in epistemology, but in those bodies of specific knowledge which result from our study of the nature and behavior of definite things. Its procedure becomes experimental, inductive, and objective. As I have elsewhere discussed the general aspects of this view, I content myself here with a single illustration.⁵ A metaphysician may ask, Is chance real? But what does he mean by "real"? That little word has made his question interesting, but it has not made it a metaphysical question. If it had, he must first discover what it is to be real. But how can he make that discovery, if every fact, every event, every distinction, every connection, every relation—everything, in short—which he wishes to investigate brutally forces upon him the problem of its own reality? If, however, the word "real" provokes no metaphysical contrast, the metaphysician will ask, What is chance? When is it found? How does it operate? But he must first have chance to investigate before he can investigate it. And if he has chance as a problem, he will never have a metaphysical problem of its reality. For, I repeat, the moment we are convinced that experience creates no philosophical distinction between itself and reality, the adjective "real" takes a modest position among all other adjectives; it ceases to be the metaphysical adjective *par excellence*.

I have, in the foregoing, indicated what appears to me to be a fundamental contrast in current philosophical controversies, and attempted to put that contrast in its general setting and to suggest some of its possibilities. If I have made myself clear, I think it must be apparent that time itself, in the light of what has been said, does not present a unique problem. It may present difficult and intricate problems, but it does not present a problem which can be regarded philosophically as different in kind from any other problem whatsoever. It may, however, be made to present specious problems like the problem of the specious present, but these tend to disappear, I am convinced, when time is taken as a given subject of inquiry and not as a mystery to be explained. If experience is a natural event with antecedents and consequences, it is itself a time affair, a thing with a past and a future. If, further, consciousness and knowledge

⁵ "Lecture on Metaphysics," Columbia University Press.

are bound up with experience, I find no more difficulty in admitting consciousness and knowledge of time than I have in admitting consciousness and knowledge of anything else. Things are all in the same boat when it comes to that. But I do find a problem in so defining consciousness that provision may be made for the fact that things sail into it and out again without any break in the continuity of their being. To affirm that the definition must be such as to provide also for the occurrence of consciousness itself as a temporal event, may seem to some like affirming a paradox, but it appears to me to be an affirmation based upon the conviction that the bodies of knowledge we build up from our study of things are knowledge of the kind of world in which we live. These bodies of knowledge may be enlarged, or improved, or greatly changed, but it appears to me to be unsound to suppose that they can be enlarged or improved or changed by thinking that they necessarily involve a metaphysical distinction between time and eternity or between appearance and reality? Furthermore, a metaphysics which can be regarded as true no matter what truths the special sciences contain, appears to me to be interesting, but inadequate.

FREDERICK J. E. WOODBRIDGE.

COLUMBIA UNIVERSITY.

REVIEWS AND ABSTRACTS OF LITERATURE

Nature and Causation of the Galvanic Phenomenon. BORIS SIDIS, Ph.D., M.D., and LOUIS NELSON, M.A., M.D. *Psychological Review*, March, 1910.

Mental and physical conditions express themselves in various objective ways. The nature of the breathing, circulation, secretion of glands, etc., changes with alterations in the physical and mental states. Psychologists have found that along with other changes there are certain electrical phenomena.

Féré, Vigoroux, Jung, Peterson, Riecker, Veraguth, and others who have not reported their results, experimented with the galvanic phenomenon. Its source has been ascribed to various causes. These are reviewed in the article here reported on.

According to a former article, by Boris and Kalmus, they have affirmed the fact of the galvanic phenomenon in relation to certain psychophysiological states and claim to have been able to exclude disturbances caused by contact effects, skin changes, and circulation. The experiments indicate that what may be called galvanic reactions do not depend on lowered resistance either bodily or cutaneous as a resultant of psychophysiological processes, as other writers have suggested. Resistance, as a factor, was excluded and the phenomenon still was present as a function of an electromotive force set up by external and internal resistances.

In these experiments, NaCl solution electrodes on definite areas were used. Batteries were entirely excluded in this and subsequent work.

The experiments by Sidis and Nelson were carried on by means of platinum hypodermic electrodes inserted in various parts of the bodies of live rabbits. The galvanic deflections were read by means of a D'Arsonval galvanometer sensible to 225 megohms. The experimenters found that deflections were not caused by purely ideational processes. The galvanic reactions show themselves as a result of the electromotive-force-variations caused by muscular phenomena due to contraction, stretching, or straining.

The muscular activity may be the result of various influences, psychic, sensory, physiological, chemical, thermal, electrical, or mechanical. The muscles in the circuit contribute most of the electromotive force. These muscles may be voluntary or involuntary.

This, I think, summarizes briefly the work that has been carried on by Dr. Sidis. It is evident that many complicating factors must be considered. Electrical phenomena present themselves in so many situations. The measurements of galvanic deflections must be delicately done, in fact so delicately that other measurements will probably yield more practical results for the psychologists. The methods used in the last experiments could not well be applied to human subjects. Cruder or less detailed methods would involve many vitiating complications. The pain and disturbances caused by hypodermic electrodes in themselves would be objectionable in trying to get at central influences.

J. V. BREITWIESER.

COLUMBIA UNIVERSITY.

JOURNALS AND NEW BOOKS

ARCHIV FÜR SYSTEMATISCHE PHILOSOPHIE. Band XV., Heft 4. November, 1909. *Identität und Wirklichkeit* (pp. 433-439): A. BERKOWITZ. — E. Meyerson's *Identité et réalité* is highly instructive as a self-consistent "philosophy of sciences" combating modern positivism and is invaluable as a contribution to the history of sciences. A German translation is desirable. *Le "sentiment intérieur" et son rôle dans la psychologie de Lamarck* (pp. 440-468): H. G. MOREAU. — It is to be regretted that unlike biologists the philosophers have neglected Lamarck who anticipated Comte. The entire third part of his *philosophie zoologique* treats of psychology as a branch of biology. Life, sensation, thought is predicable of *organized* matter; intelligent action characteristic of the higher stages of life is the outcome of the "inner sense" (the sense of existence), this accompaniment of a developed nervous system. *Die sogenannte Ideenlehre des Muammar* † 850 (pp. 469-484): M. HORTEN. — Arabian sources show that Muammar was a naïve realist. Thus, contrary to S. Horowitz's assertions, his ideology has nothing in common with Plato's Ideas. *Der Gegenstand der Erkenntnis* (pp. 485-522): P. SCHWARTZKOPFF. — Since Kant the subject-matter of cognition has been the focus of epistemology and the pivot of metaphysics. Now, is this

subject-matter the extra-subjective thing-in-itself or both subject and object or "immanent moments" of cognition as Bullaty would have it? By *reductio ad absurdum* this immanence-theory is readily met, thus: If objectness be not real but mere immanence of cognition, then cognition itself is mere "fiction." *Die Welt der Natur- und Geisteswissenschaften, die Metaphysik und die Philosophie* (a chapter from a work soon to appear in print) (pp. 523-542): M. BÄR-KUPPENBERG. - In its quest for the raw substance positivism soon became overwhelmed by the material and pronounced its own forced positivity on abstinence, virtue of philosophy in general. It must be emphasized that the goal of philosophy is not the *transcendentally causal* but the *synthetically telic* unity. *Über Persönlichkeitsbewertung* (pp. 543-554): H. GOMPERZ. - The theory of values must add to the logical, ethical, and esthetic also the personalistic values. Now-a-days we find the personality valued as such; e. g., Fichte, regardless of the absurdities of his *Wissenschaftslehre*, is personalistically esteemed a greater thinker than the author of an accepted text-book. *Der Wille. Ein Beitrag zur Religionsphilosophie* (pp. 555-562): F. L. DENCKMANN. - The will-power is the concomitant of cell aggregates in the human brain. Man's conduct, his exercise of religion (as taught by Christ) is based on the training of the will which is not free but capable of freeing itself from all that is morally negative. *Der VII. socialogische Kongress in Bern vom 20 bis 24 Juli 1909* (pp. 563-570). Stein, Ostwald, Roberty, and others discuss the main theme, *Solidarität. Die neuesten Erscheinungen*.

ARCHIV FÜR SYSTEMATISCHE PHILOSOPHIE. Band XVI., Heft 1. February, 1910. *Die Ideenlehre im modernern Gewande* (pp. 1-13): O. PROCHNOW. - Schopenhauer's "Will" objectivating the thing-in-itself into the real world, Remke's dominants determining the direction of organic growth and of energy transformations, Hartmann's Superforces and the unconscious soul, they all are lineal descendants of Plato's Ideas. *Ethische Betrachtungen* (pp. 14-19): G. WENDEL. - A scientific system of ethics must be based on the fundamental distinction between the good and the moral in human actions. The former, an intellectual judgment attained through the evaluation of things, serves as a "regulative" maxim, the latter is purely subjective. *Zur Wissenschaft des Spinozismus* (pp. 20-41): E. RAFF. - Spinoza's pantheism is at bottom a *monismus materialesatus*; his substance as related to infinite space and time is nothing but matter. Also the ego becomes ultimately mere appearance of the absolute substance. And the two shortcomings of pantheism pointed out by Jacobi and Wolff again emerge in the contradiction that (a) the apodicticity of the ego-consciousness and (b) the abstract teleology nowhere admit of a conceptual resolution into the immanency, all in being, becoming, and thinking. *Die Philosophie meines Vaters* (pp. 42-71): V. STERN. - Philosophy hinges on the two problems of being and ethics; to them are devoted Stern's works, *Philosophischer und naturwissenschaftlicher Monismus* and *Gesetze der Physik und Ethik*. The one seeks to supplement Kant, deriving the contradictory world of appear-

ances from the uncontradictory Sein-an-sich. Unlike Spinoza's pantheism Stern's is strictly positive: *all is*. His other work bases ethics on the evolutionary principles of differentiation, adaptation, etc. *Les quatre règles inexactes du syllogisme* (pp. 72-78): L. M. BILLIA. — Heedless of Duns Scot's and Rosmini's corrections of the syllogism, the logicians still cling to Aristotle, and its four rules must again be corrected. Rule I.: *Utroque si præmissa neget, nihil inde sequitur*, save* when there are in all *three* terms with a definite middle term. A like correction applies to Rule II.: *Nil sequitur geminis et particularibus unquam*. Rule III.: *Aut semel aut iterum medius generaliter esto*,—not necessarily. Rule IV.: *Pejorem sequitur semper conclusio partum*, is inexact; one of the premisses may be negative and the conclusion still positive. *Die Psychogenese der Philosophie und der Erkenntniswert der Mystik* (pp. 79-92): L. POHORILLES. — Mysticism, the opposite pole of science, is the expression of the unknown, and yet philosophy, the mother of science, is but a differentiation from mysticism. This genesis is shown by the works of K. Joël, *Der Ursprung der Naturphilosophie aus dem Geiste der Mystik*, and of W. Shultz, *Studien zur antiken Kultur. Das Problem der Form in der Ethik* (pp. 93-120): GERTRUD KÜHL-CLAASSEN. — The confusion of the two domains, of Sein and Sollen, has been removed by Marie Louise Euckendorff's book, *Vom Sein und vom Haben der Seele* whose dictum is, Thou shalt = thou shalt be, a unique principle of moral judgments for the individual, who as a *particular* is but a relation, a *form* actuated by synthesis with the overindividual in the consciousness of worth. *Kant und Wundt über Metaphysik* (pp. 121-141): H. ROMUNDT. — The colossal work of Kant was regarded by himself as a propædæutic to a scientific metaphysic, while Wundt, in his *Systematische Philosophische* declares metaphysics "an obscure and avowedly useless science." It must be surmised that owing to Kant's difficult discourse Wundt has failed to grasp the essence of the critical philosophy. *Definitionsgleichheit und symbolische Gleichheit* (pp. 142-144): O. NEUROTH. — For the sake of clearness in the logical calculus, there should be distinguished three cases of equality illustrated thus: I., equality: $(a+b)(a-b) = a^2 - b^2$; II., definition equality: $a + a \cdots + a \equiv ab$; III., symbolic equality: $\sqrt[n]{a} \equiv a^{\frac{1}{n}}$. *Preisaufrage* (p. 145). The fourth competition by the Kant-Gesellschaft. Subject, Das Rectsgefühl, etc. *Die neuesten Erscheinungen*.

- Alain, *Les Cent-un Propos*. 2^e Série. Paris: Edouard Cornély & Cie. 1910. Pp. 240. 3.50 fr.
- Appleton, L. Estelle. *A Comparative Study of the Play Activities of Adult Savages and Civilized Children*. Chicago: University Press. 1910. Pp. vii + 94. \$.54.
- Bjorklund, Gustaf. *Death and Resurrection*. Translated from Swedish by J. E. Freis. Chicago: The Open Court Publishing Co. London: Kegan Paul, Trench, Trubner & Co. 1910. Pp. xix + 204. \$1.00.
- Greenwood, M. *Physiology of the Special Senses*. London: Edward Arnold. 1910. Pp. vii + 239. 8s. 6d.

NOTES AND NEWS

"ON Friday and Saturday last, June 24 and 25, joint meetings of the Aristotelian Society, the British Psychological Society, and the Mind Association were held at 22 Albemarle Street, London, at which subjects of wide philosophical and psychological importance were discussed before large and interested audiences. The discussions were based upon papers previously printed and circulated among the members of the several societies. On Friday afternoon the problem of "Instinct and Intelligence" was considered on the basis of papers by Messrs. C. S. Myers, C. Lloyd Morgan, H. Wildon Carr, G. F. Stout, and Wm. McDougall; Saturday morning was devoted to the discussion of the question, 'Are Secondary Qualities Independent of Perception?' on the basis of papers by Messrs. T. Percy Nunn and F. C. S. Schiller; and the congress was brought to a close on Saturday afternoon with papers on the nature and development of attention, by Mr. G. Dawes Hicks; the 'faculty' doctrine: outline of some experiments on school children in relation to this doctrine, by Mr. W. H. Winch; and some observations on the æsthetic appreciation of colour combinations, by Mr. E. Bullough.

.

"The societies dined together at the Criterion Restaurant on Friday evening, Professor W. R. Sorley being in the chair. In the course of the after-dinner speeches the important suggestion was made by Professor S. Alexander, and accepted with acclamation by the company, that the Aristotelian Society should strive to become the representative society of English philosophers, much as the Chemical Society, the Physical Society, &c., represent English science in those subjects."

The above comprises the introductory and concluding paragraphs of an account in *Nature* of June 30 by Mr. William Brown, of the University of London, of the proceedings of the meetings above mentioned. Mr. Brown's report includes very careful and detailed summaries of the various papers presented.

PROFESSOR J. H. CREIGHTON, of Cornell University, has been granted leave of absence for the coming year. His place will be supplied by Professor G. H. Sabine, of Stanford University. Professor A. W. Moore, of the University of Chicago, will replace Professor Creighton at Stanford University during the second semester.

THE Fourth International Congress of Philosophy will be held at Bologna during the Easter holidays, 1911, under the presidency of F. Enriques. Professor E. Durkheim has proposed a discussion of "Judgments of Value and Judgments of Fact."

PROFESSOR J. MARK BALDWIN has been elected corresponding member of the philosophical section of the French Academy of Moral and Political Sciences, to succeed Professor William James, recently elected foreign associate.

THE JOURNAL OF PHILOSOPHY

PSYCHOLOGY AND SCIENTIFIC METHODS

THE TENTH ANNUAL MEETING OF THE WESTERN PHILOSOPHICAL ASSOCIATION

THE Western Philosophical Association held its tenth annual meeting at the University of Iowa, Iowa City, on March 25 and 26, in conjunction with the North Central Branch of the American Psychological Association and the newly organized association of Teachers of Psychology in Iowa. Almost all the colleges and universities within a radius of three hundred miles, including Chicago, Northwestern, and the State Universities of Minnesota, Wisconsin, Illinois, Missouri, Iowa, Kansas, and Nebraska, and several state normal schools, were represented in one or more of these groups.

At the business meeting Professor E. B. McGilvary was elected president, Professor J. E. Boodin vice-president, Professor B. C. Ewer secretary and treasurer; Professor Norman Wilde and Professor A. W. Moore were elected members of the executive committee. The next meeting of the association will be held at the University of Minnesota. There follow the abstracts of the papers which were presented.

The Nature of Truth: JOHN E. BOODIN.

The pragmatic movement has emphasized altogether the function of truth—truth as regulating the active procedure of the will, whether in the adjustment to nature or the conduct of the understanding. But this type of inquiry, important as it is, should not blind us to the more difficult problem of the nature of truth.

I have tried to show that there are four presuppositions or laws implied in all knowing, viz., the law of consistency, the law of totality, the subject-object form, and the law of finitude. By the law of consistency I understand that for the purpose of thought we must take *A* as *a* and therefore can not in the same respect take it as non-*A*. This law, therefore, includes the three traditional so-called laws of identity, contradiction and excluded middle. By the law of totality I mean that we must have systematic connection in the larger (in dem Grossen) as well as unique determination within the one kind

or series (in dem Kleinan), *i. e.*, the various kinds or attributes of reality must make such a difference to each other as to cohere in a system, if we are to have truth. By the law of subject-object I mean that within the universe of thought the subject-object relation—the active assimilation of a selected content, the datum, to a systematic purpose which gives it meaning, is insuperable. While, however, we can not think the universe except under the subject-object form, this does not prove that the universe as a whole is a reflective unity. This must be shown by evidence, not *a priori*. What I mean, fourthly, by the law of finitude is that the universe as the object of thought must have finite characteristics or relations. A universe of an infinite number of characteristics or relations would be indeterminable.

Finally the laws of thought are not the result of an arbitrary positing by the will, but are discovered as the conditions without which thinking is impossible. They can not be proved without involving a circle, as every proof necessarily presupposes the laws of thought. But by attempting to assert the contrary in the case of any judgment, we become conscious of their implication and so make them explicit—conditions which are binding upon the will, if it chooses to think. That the world of existence lends itself to the demands of truth must be found out by our success in knowing.

An Idealistic Philosophy as a Basis of Psychotherapy: ROWLAND HAYNES.

Only one question of an idealistic philosophy is here considered, the nature of the self, and only a limited number of writers, Mrs. Eddy, representing the mystical type of psychotherapy, Quackenbos, Dubois, and Worcester representing a partially scientific type, Münsterberg, representing a genuinely scientific type. This paper is a study in the psychology of metaphysics and tries to discover, in the writers discussed, the influence of their concepts of the self on their theory of psychotherapy.

Mrs. Eddy maintains that the self is mind only and this leads her psychotherapeutic theory to affirm that physical ills are a delusion. Quackenbos, Dubois, and Worcester, while differing widely, all believe that the self is twofold, that the psychical element can directly influence the physical, thus their therapeutic theory grows from and uses their concept of the self. Münsterberg distinguishes between the real self of purposes and the self of science and spends the first third of his "Psychotherapy" in demonstrating that the self of purposes has nothing to do with the self which is sick. His concept of the self is a part of his philosophy; his therapeutic theory a part of his concept of science. His philosophy is one of his meth-

ods of insuring the satisfaction of certain instinctive demands, called religious and ethical values. The crowding of these demands has shaped his philosophy and his philosophy has moulded his notion of science and of psychotherapy. In him the relation between his concept of the self and his theory of psychotherapy is indirect but real.

Two Modern Social Philosophies: ERNEST L. TALBERT.

Two tendencies are characteristic of modern thinking. One directs itself toward a subjective personal interpretation of life, the object being to achieve happiness by disbelieving in "matter," disease, poverty, and causes for worry. This subjective and individualistic attitude is represented in the various species of "new thought" and in Christian science. Another interpretation insists that the personal attitude and the cultivation of positive, wholesome feelings, although invaluable, is a one-sided solution of individual and social problems, and urges that the investigation and control of objective communal processes is a fit philosophic task.

Embodiments of the objective standpoints are socialism and anarchism, both of them vital social philosophies having significant philosophic and historical ancestry. The basic socialism is that of Karl Marx. In its inception it was a product of the post-Hegelian reaction, using the rationalistic dialectic of the absolute idea of Hegel to explain the downfall of the negative moment of capitalism and the synthesis in the cooperative commonwealth. It is at once fatalistic and revolutionary, logical and materialistic. Instead of rationalizing the real, of idealizing the established institutions of Prussia, it condemned the "inner contradictions" and irrationality of the capitalistic régime, and eulogized labor and the "proletariat" to offset the interest of Hegel in reason and the controlling orders. Besides the rationalistic, dialectic framework, Marx used the hedonistic ethics and postulates of utilitarianism, and failed to secure a satisfactory amalgamation. However, advances in scientific procedure and reaction of changing circumstances upon the initial categories have resulted in a constructive theoretical and practical movement known as "revisionism." The defects of Marxian socialism trace back to its philosophical and historical origin. It deflects attention from the next thing to be done, because of its faith in a predetermined drift toward a final goal, and it encounters in its economic and ethical aspects many of the difficulties of the English empiricists and hedonists.

Anarchism is anti-metaphysical, anti-dialectical, mechanical, and materialistic; it is fond of the flexible inductive hypothetical method as applied to all problems. It has some likenesses to socialism, but is impatient of external control and systematization, and finds its

ideal in small group harmony. The early atomistic bias is modified in the intelligent philosophical anarchists, such as Kropotkin: control in the social world proceeds from the dominance of sociability, propensities toward cooperation and mutual aid, which are developed through all stages of animal evolution. Anarchism is a protest; it has no satisfactory practical program, it forgets that even social impulses need standardization and objective regulation.

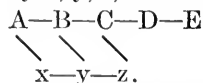
Socialism and anarchism present problems which may well occupy the minds of social theorists and statesmen. Typical problems are: (1) What do we mean by the "American spirit"? Is our common and statutory law now fitted to secure justice to all classes of the community? (2) What basis is there for the socialistic and anarchistic denunciation of the "profession"? To what extent have newspapers, predatory business interests, judges and police repressed free speech and opportunity for development in the so-called "lower classes"? (3) There is a pressing need of a more adequate social psychology which may underlie the social sciences and suggest comprehensive remedial practise.

Finally, three emphases of radicalism are valuable: (1) a contention that liberty is a function, not an attainment once for all, (2) a contribution made by "revisionist," socialist, and philosophical anarchist that a constructive logical method be applied, not only in the laboratory, but also in the field of concrete human interests, (3) a plea that a genuine democracy of the western world must found its theory and technique upon a utilization of the contributions of all functional members of the community. Otherwise, a Platonic stratification of classes without possibility of discussion and contact will continue, and justification of the protests of radicalism will be difficult to disprove.

Epiphenomenalism: E. B. MCGILVARY.

According to Huxley, causation is invariable succession. The cause is the invariable antecedent, and the effect is the invariable consequent. We do not understand the why or the how of the connection, but we discover a causal connection when we ascertain a connection which holds good within experience and meets with no exception.

For this reason he holds that brain states are the causes of conscious processes. Designating the brain states by capital letters A, B, C, D, E, and the conscious processes that accompany them by x, y, z, we have according to Huxley's conception the double series



Both B and x are the effects of A; both C and y are the effects

of B, etc.; the fact that x is an effect of A does not impair the validity of the law of the conservation of energy, because x does not use up any of the energy of A, which energy all passes over into B. x is not an energetic effect, but the fact that it is not an energetic effect does not preclude x from being an effect if it always follows upon A. This is inevitable if by effect is meant merely an invariable consequent.

But the same logic should have led Huxley to recognize that x as well as B is the cause of C. For if x always accompanies B and B always precedes C, then x must always precede C, and an invariable predecessor of C is a cause of C. But just as according to Huxley's view x is an effect of A without using any of the energy of A in coming into being, so x should be a cause of C without expending any energy in being the cause of C. The relation of energetic equivalence obtaining between A, B, C, D, and E is simply one kind of relation that is empirically ascertained to exist between them, and if something stands in the relation of invariable antecedence and succession to these terms, this antecedence and succession need not in any way interfere with the other relation of energetic equivalence which obtains among the terms A, B, C, D, E, provided that something is not of energetic character.

Huxley denied the causality of x, y, and z, not because they could not be causes of material events, but because he thought he found empirical proof that C could occur without x. But in this he was not dealing with C, but with something grossly resembling C. The pithed frog could go through the same performances as the normal frog. This is a mistake. His behavior is not like that of the normal frog; and therefore the empirical data on which Huxley denied the causality of conscious processes are wrongly stated. When correctly stated, these data give us the same right to call x the cause of C, which we have for calling x the effect of A.

The only correction that is needed in Huxley's view is to recognize x as a non-energetic cause of C, for the same reason that it is recognized as the non-energetic effect of A, namely the reason that it is, so far as we know, in a relation of invariable succession and precedence to the respective terms of the mechanical events.

The invariable connection of x with A, on the one hand, and with C, on the other hand, must be interpreted as one of the ultimate connections of the universe. If in the universe relations are as real as terms, then the psycho-physical relation is to be accepted as revealing part of the connective constitution of the universe, and as integral part as the mechanical relations that are revealed in physics. The one connection does not impair the other. The two connections co-

exist. There is intercausality, but this does not involve interactionism in the sense that the mechanical relations are abridged or interfered with by the intercausal relation. This intercausalism differs from parallelism in that the latter declines to admit a causal relation between the psychic and the physical in spite of an admission of invariable antecedence and succession between the two series. Parallelism is logically incompatible with Huxley's definition of causation, which is the current empirical definition.

The Sense of Adjustment and Life of Appreciation: E. D. STARBUCK.
Virtues; Types and Sources: F. C. FRENCH.

Many men who are honorable and kindly in their relations to family, neighbors, and business associates show a marked unscrupulousness in their relations to the public, governments, or corporations. This fact points to a distinction between two main types of virtue. There is one group of virtues based on sympathy, *e. g.*, kindness, good-will, generosity, benevolence, mercy. The other group, dependent more upon a sense of duty, includes justice, honesty, integrity, veracity, courage. The virtues of the first class depend upon acquaintance and close personal relations. They are the personal, gentler, more feminine virtues. The second group are of an impersonal character. They are the sterner, more masculine virtues. Different individuals, different ages, different ethical theories manifest a predominance of one or the other of these two types. While Sutherland tries to derive all virtues from sympathy and the family relationships, and Kropotkin all virtues from the mutual aid and social cooperation outside the family, the truth seems to be that the personal virtues were derived from sympathy and developed under domestic influences, while the impersonal virtues are the outgrowth of the sterner constitution of economics, military and civic life.

An Introduction to Philosophy through the Philosophy of History:
 JAY WILLIAM HUDSON.

A suggestion for a book on the metaphysical and ethical interpretations of life implied in the popular institutions of the English people, to be entitled, "A History of English Ideals." Historic events and institutions mean a vast realm of judgments concerning the true, the real, and the right, no less significant because expressed in the common language and the common deeds of common men. An age's social verdicts are often surprisingly near the technical pronouncements of the metaphysicians and ethicists. Such a study need not attempt to reveal in history the realization of a dialectical process: and its interpretations need not depend upon the standpoint of a definite metaphysics held by the author.

Such a work would be of some worth as an introduction of English-speaking students to philosophy. It would be psychologically adequate—that is, it would be an introduction by way of a natural and cultivated interest, since the average sophomore knows as much about history, especially the history of his own country, as about any other systematized body of knowledge.

Such an introduction would also be philosophically adequate, for there is one purpose among the purposes of introductions indispensable to all the rest, namely, the purpose of developing the power of spontaneous philosophic thinking. In themselves, the metaphysical problems are not likely to heighten the pulse of the average sophomore. But the conditions are changed when problems are made to emerge from absorbing social conflicts and compelling national crises. It is not an artificiality thus to relate philosophy, for philosophy from of old was born of just such concrete situations.

The paramount thing is to introduce the student through his interests, whatever they are. If metaphysics is an abstraction, it should be shown as an abstraction working in and through life, and so no mere abstraction at all.

The Aims of an Introductory Course in Philosophy: E. L. HINMAN.

After considering briefly the pedagogical problems which confront an introductory course in philosophy, this paper proceeds to discuss three main aims which such a course should pursue. First in importance is the purpose of displaying the unity of human culture, and its essentially humane import. As a study of the synthesis implied in knowledge and experience, philosophy is in principle a reconciling and unifying discussion. In modern life the centrifugal tendencies, however, come very near to dominating. Philosophy may here furnish a needed corrective. It may exhibit the manner in which narrow and partisan doctrines are at once fulfilled and overcome in a larger and more catholic view, and may train its students towards a breadth of vision and of sympathies much needed in our time. This refers, for instance, to the apparent clash between science and religion, regarding which philosophy has the power to reveal, on the one hand, the idealistic faith which is at the core of science, and, on the other hand, the universal religious idea which pervades the world's religion. In similar manner the political problems which turn upon the definition of the individual and of the hold which the whole has upon him may be used to illustrate fundamental philosophical issues, and the nature of a philosophical synthesis. A second important aim is that of training the student to the spirit of critical and fundamental thinking. The spirit of thoroughness and of foundation-testing, the appreciation of philosophical criticism and

its vital significance in relation to truth, and the hatred of uncritical dogmatism, are all appropriate results of this phase of such a course. A third objective is that of giving an ordered survey of the system of the sciences, which may be carried out at least to such a degree that the broader cultural ideas may be brought somewhat vividly into relation with the present state of speculation in natural science.

The Naturalistic Approach to Philosophy: BERNARD C. EWER.

Philosophy is a reflective study of human life and its relation to the universe. Logic and psychology are valuable preliminaries, but do not adequately present philosophical problems; and the various special disciplines are of course not equivalent to a comprehensive world-view. The ordinary "introduction to philosophy" is more properly an introduction to metaphysics. What the beginner in philosophy needs is a broad view of nature, including the individual human mind and society, based on the conclusions of the sciences, and exhibiting philosophical problems in the light of these conclusions.

As an experiment, the speaker recently tried to develop such a nature-philosophy in an elementary course, using as a basis the popular writings of eminent scientists, paying constant attention to evolutionary concepts, calling attention regularly to the numerous metaphysical assumptions and problems involved, and thus gradually leading up to the fundamental questions of ethics and religion. No attempt was made to acquaint the student with the sciences themselves, since such acquaintance can come only through special study, but rather with the ideas which scientific men set forth as the outcome of their labor, and which are of distinctly philosophic significance. The advantages of the method seemed to be a sustained interest due to a constant feeling of dealing with the actual world, and a certain concreteness of subject-matter which was helpful in developing the profounder problems of philosophy.

The Address of the President, Professor Carl E. Seashore: *The Rôle of Play in Religion*. (To be published later.)

BERNARD C. EWER,

NORTHWESTERN UNIVERSITY.

Secretary

THE PROBLEM AND CONTENT OF EDUCATIONAL PSYCHOLOGY

IN recent years the problem as well as the content of educational psychology has increased very greatly in complexity. This is partly because the science of psychology itself has been rapidly gaining in both scope and intent until every conceivable aspect of

animal behavior as well as of human conscious life has come to be regarded as falling within its legitimate sphere of investigation. Hence it has come to pass that the one who has the planning of psychological material for those preparing to teach is embarrassed by a wealth of material, all of which seems to have more or less definite value for the purpose in hand. The main problem thus seems to be one of selection of the best from among much that is good, for it is clear that there is not time to teach everything. What, then, are the phases of this rapidly developing science which are most valuable for the training of the teacher, and according to what standard shall they be selected?

The problem we are facing, however, is not merely one of selecting from a complex science the elements that may be of value for some particular purpose. It is even more that of determining clearly a dominant view-point and the laying down of the lines for, and the development of, a new science.

It is interesting to reflect that one or at most two decades ago the problem of an educational psychology hardly existed. At least it had not gained a place at the focus of attention. It was thought at that time, as it had been thought for years, that any account of mental structures and functions, no matter how abstract it might be, if it were true, would meet the need of the teacher for a psychological training. Just because the teacher, *par excellence*, had to deal with minds, he must, perforce, know the science of the mind. We of to-day do not depreciate in any way this general descriptive science, but we doubt if it is of any more significance for those who are engaged in teaching than for those in other professions. If it is worth while, from the standpoint of general culture, to have a certain amount of scientific training, presumably psychology has as good a right as any other science to a place in the student's program. But as we have suggested, this general science has no preeminent claim upon the teaching profession. It is becoming more and more apparent that it is a science that touches in some way all phases of human activity and is concerned in all types of vocations.

With the recognition of this broad general relation between psychology and many different callings, arose also the recognition of the possibility of a much more intimate relation between the facts of the science and practical problems than had been imagined when teachers were first advised to study psychology just because of its being mental science. It was seen, in other words, that the solution of practical problems in every vocation depends in large measure upon an accurate understanding of all the factors involved. Hence the teacher must be interested in the facts furnished by the science of psychology in so far as these facts help in the interpretation and

control of situations and assist in the proper meeting of such difficulties as arise in the work of teaching.

At first, however, the *character* of this need was only imperfectly appreciated and the first attempts to meet it were through a more or less uncritical selection and superficial discussion of certain aspects of psychology such as attention, perception, memory, imagination, etc., and by tacking to them pedagogical applications of various sorts. Münsterberg well describes it as a cramming of some psychological laws to which was added an appendix of moral appeals. The outcome of the process was usually a very unreliable psychology and a sort of disjointed rule-of-thumb pedagogy.

At this point the continuity of the development of an educational psychology was broken. The next step, logically, would have been to work out a psychology of the educative process, or a discussion of the fundamental characteristics of the educative process with reference to the psychical factors involved in it. What should next have developed, in other words, should have been an organic union of aims and means to take the place of the unilluminating scrap-heap type of educational psychology that had first arisen. Certainly the value of descriptive psychology for the teacher did not end with this piecemeal application, and yet this is practically where it stands to-day. The reason for this is that attention has largely been turned in another direction, namely, toward the experimental investigation of various problems which have more or less educational interest and yet are sufficiently psychological to claim the attention of those psychologists of somewhat definite pedagogical bent. The development of experimental methods, particularly in psychology, has furnished a technique for attacking many problems having a practical bearing for the educator as well as those having a relation to the pure science of the psychologist. In many cases, the motive prompting the investigations has been rather that of the pure scientist even when it has been recognized that the results might play into the hands of the educational theorist.

Thus, in one way or another, an extensive field for experimental research in education has been opened up, in part quite definitely psychological and in part only remotely so, but in most cases full of general human interest. In fact, the enthusiasm of many students has been so great that they have been ready to regard the data afforded by the researches in this field as constituting the only *real* educational psychology. For ourselves, however, we can not escape the feeling that the field of experimental education as thus far developed belongs essentially to the advanced student. The beginner in education needs a more organized account of the fundamental relations of psychology and teaching. He has definite and practical

situations to face and these should furnish the starting-point of a genuinely scientific inquiry, which, although dealing with psychical processes and factors, is first and last concerned with educational rather than with psychological problems.

We repeat, then, that it is not mere descriptive psychology that the prospective teacher needs at this point, even though it be of the excellent type represented by James, Angell, Judd, or Royce, or, rather, his needs pass beyond that which these books afford. Nor is he ready, after having studied the descriptive science, to undertake experimental researches in educational psychology. For one thing, he has not as yet a sufficient appreciation of the problems of education to undertake such work with profit. He should understand certain general principles of the psychology of education before undertaking experimental work, just as the experimental psychologist must, to start with, have certain general notions of psychical contents, relations, processes and problems, for only thus can he appreciate the questions that lie before him as an experimentalist.

Experimental education is not, then, in a position to meet the need of the prospective teacher who has just finished his course in general descriptive psychology. Some of its problems have, it is true, grown directly out of school work, and their solution may have an important influence upon educational theory and practise. But, in the case of many of the questions, the impelling motive has been that of pure science and their bearing upon the actual conduct of school work is at best very remote. Important as is the field of experimental educational psychology, it is then preeminently the field for the research student rather than for the novice. Not that the novice may not profitably take up experimental work, but rather that this is a specialized field in which the average person who prepares to teach is not, and need not be, concerned to enter. And yet, as we have said, there has been a tendency on the part of many to limit the field of educational psychology to this sphere, a sphere in which the objects of research are unquestionably derived from education, but in which the interest is that of the pure scientist rather than of the practical teacher.

These then seem to be the alternatives before the prospective teacher at the present time, either general descriptive psychology with no attempt at applying it to his special problem, or a hodge-podge of psychological lore with certain supposed "applications," or, lastly, experimental education. The first and last of these are respectable and legitimate subject-matters, the second no respectable scientist cares to own, a bastard child, as it were. And yet, as we have said, the actual needs of the prospective teacher are met by neither one of these perfectly respectable sciences. Neither one fur-

nishes the specific information for the controlling of practise that a genuine applied science is supposed to afford.

This brings us definitely to the question as to whether there is not an as yet undeveloped science of psychology as related to teaching, a science which will not be a mere jumble of extracts with pedagogical applications attached, but rather a real applied science, with a recognizedly educational point of view and definitely determined problems which are primarily educational and yet which can be coped with best by a study of the psychological factors involved in them. Such an applied science would stand upon its own feet because it would have a unity of its own, its own peculiar problems, its own peculiar stratification and lines of cleavage. Psychological fact appears in it, not merely as psychological fact, but with reference to its throwing light upon educational problems. It presupposes in the student, however, a general knowledge of these psychological facts. It goes without saying that such a knowledge is a prerequisite to getting any light upon the educational problem through these facts. It may be that the candidate for a course in educational psychology does not know much about the general science. But just because his preparation for the applied science is defective is no excuse for calling that educational psychology which must be given him to remedy his defect. It may be necessary for the teacher of educational psychology to stop and teach some general psychology, that he may have in his class the basis on which to prosecute his educational inquiry. But when he is doing this he is not teaching educational psychology, he is rather losing time from what he is supposed to do because of the inadequate preparation of his students for that which they should be able to do when they come to him.

It has been with reference to such things as have been enumerated in the paper thus far that the present writer has for several years been gradually working out what seems to him to be a real psychology of education that is not a mere rehash of the conclusions of the general science. Neither is it experimental education, good and proper as that surely is. It rather attempts a systematic account of the educative process in the light of such elementary psychological facts as bear an important relation to controlling it and hence rendering it more effective. The attempt has been to start from some definitely educational point of view, to lay down certain fundamental educational axioms, concepts, or problems, and to investigate them in the light of the psychical processes that are involved in them.

The fundamental axiom, or concept, is that an educative process is essentially one involving change of some sort or, more specifically, growth. The nature and implications of growth as contrasted with mere mechanical accretion are first discussed and applied to learning.

The centralizing principle thus becomes the learning process as a special phase of growth.

It is freely admitted that this point of view may be too narrow to include all the facts that should belong to an educational psychology. But, on the other hand, it is doubtful if any single point of view can be found which will comprehend all the complexity of the educational process, and this one is sufficiently inclusive for practical purposes. In the process of learning, in its various aspects, we have certainly the central fact of education. It is a process which needs to be studied from many different angles, and especially from that which reveals the way in which and the extent to which it is conditioned by psychical processes, structures, and laws.

In the course as worked out from this basis, the main lines of classification and the most important concepts are, as it has been suggested they should be, primarily educational rather than psychological. Consequently we do not, after this introductory discussion of growth, become immersed in the psychology of sensation as the basis of all knowledge. In fact, to the present writer, it seems very doubtful whether an educational psychology need have anything to say of sensation or of perception as such. The next topic treated is activity or impulse. It is pointed out that growth always presupposes an inner activity of some sort. That which is entirely inert can not grow. Hence the fact that the learner is active, impulsive, is of the utmost significance in any account that may be taken of the learning process. That impulse is an essential characteristic of all organisms from the lowest to the highest is brought out and illustrated in many ways. In the lower forms and in the human infant it appears as mere restlessness, without purpose or content. In higher forms it becomes, in addition to this, desire and even "rational eagerness." We next emphasize the general importance as a prior active attitude for the apprehension of any and all new experience. Impulse is at first, moreover, entirely without *content*, that is, mere tendency to move without objective or accompanying consciousness of meaning. But the mere expression of impulse results in its acquiring some sort of more or less definite content. The suggestion is offered and developed in the course that the rich content of adult mental life is definitely related to and in fact is the outcome of the impulsive, projective attitude which every organism assumes toward its environment. Impulse thus appears to be the initial point in all learning. There must be some movement or initiative on the part of the child before he can be taught. Impulses are not to be crushed out as bad nor permitted to run riot on the supposition that they are good. They are merely the raw material of character, potentialities to be utilized. They do not cease to exist when organized into char-

acter, however, for our psychic life is always active, always reaching out, always projective. The character of the adult may differ in many ways from that of the child, but as far as impulse is concerned it differs simply in that it has content and is organized along more or less definite lines.

This phase has been worked out in varying detail according to the class, but in any case the object is to impress as clearly as possible upon the class that the learning process is one of active appropriation rather than of passive absorption.

We next discuss certain conditions which may be regarded of primary significance in calling forth impulse, conditions which are therefore favorable to learning. Two types of conditions are distinguished, representing two suggestive angles from which to view the process of mental growth. In the first there is the social atmosphere, for the learning process is one which involves in many of its aspects the interaction of minds, is, in other words, a social process. The other vitally important condition of learning is that it shall have motive or purpose, and this aspect of the subject is discussed under the heading of the problem.

With reference to the first of these fundamental conditions, that of the social atmosphere, the idea is presented that educational psychology is in large measure social psychology of a certain type. It is conceivable that learning might go on in a social vacuum, that is, be a purely individualistic affair, but the point is made that learning as far as it appears in school, as far as the teacher is concerned in it, is influenced in very important ways by the presence of other people. The attempt is made to carry this social view-point throughout the course, keeping in mind, for example, that interest, attention, memory, reasoning, and so forth, seldom develop in their recognizedly characteristic ways except under some sort of social stimulation. In other words, it seems best to let the social point of view be present more or less continuously rather than to divide the course into two parts, one dealing with the social and the other with the individualistic aspects of learning. At this point, however, the most general aspects of the social character of learning are discussed with reference to making clear the presuppositions of what follows.

The relation of the problem to learning activity is next considered in a preliminary way. It is not of course supposed that all learning is conditioned by the presence in consciousness of some definite problem, the idea is simply that this is a significant point from which to view many different types of learning. In this discussion it is first necessary to broaden the concept of the *problem* that is apt to be in the minds of most of the class. Many illustra-

tions are given drawn from all the different types of school studies as well as from life outside the school. Such topics as these are considered, the conditions under which problems arise, their relation to impulse and to the development of mental content in general, the function of the teacher with reference to the pupil's questions and their solution, for instance, can the teacher take an active part in awakening the pupil to a consciousness of problems and in helping him to solve them, and the results continue to be educative in the best sense, the relation of the higher forms of social influence to the origin and solution of purposes or things for which one may work?

In the remainder of the course the attention is fixed upon the learning, or more specifically the problem-solving activity, with the object of determining the organization of and place within it of various psychical processes. Thus interest and effort are seen to fall naturally together in the solution of a genuine problem; attention stands for the organization of the self in the face of a difficulty of some sort. The different types of attention stand for successively more and more complex organizations of the self about matters which appeal to it as affording avenues of genuine self-expression. Spontaneous attention is not intrinsically different from or lower than the voluntary or reflective type. The former is simply the expression of a more primitive or instinctive self than the latter. The attention is to be developed by the development of the self with a capacity for appreciating and grappling with many different types of purposes and problems. Attention means organization of the self, and this occurs most characteristically when one faces a problem that is for him genuine.

The next subject taken up is that of the extent and ways in which the predisposition of the psychophysical organism is operative in the learning activity. The various facts which belong to the psychology of habit, of apperception, of association and memory, contribute largely to the development of this phase of the subject. In many concrete ways we attempt to show how that which one does at any time is conditioned by his previous activities which hold over in the form of various motor coordinations, how new acts of skill are based very definitely upon previous accomplishments. This same fact of predisposition holds as truly in the sphere of feeling and ideation, and the influence of past ideas and modes of thought upon present purposes and problems is fully illustrated. If apperception is to be regarded as an assimilative activity and not merely mental predisposition, it is shown that this assimilation actually takes place more characteristically and effectively when

it is motivated in some way than if it is made to depend upon old ideas which are supposedly similar to the facts which are to be taught. Only as old experiences become problematic or discrepant do they become very active in the assimilation of the new.

As far as association and memory are concerned the general nature of the mechanism and of the primary laws is presupposed. The educator is not directly concerned with them, at least with them in the form in which they are presented in most psychologies. Mental events will be bound together in some way or other, whether the teacher thinks about it or not. That there will be some sort of associative connections goes without saying. The teacher's problem is to influence in some measure the *kinds* of connections that are to be established. These are not so much bare connections of idea with idea as more or less complicated systems of mental elements. The question is, then, as to how the most useful systems can be built up, that is, systems which will render past experiences the most thoroughly available for present needs. This systematization will be affected not so much by mere mechanical juxtaposition or by infusing a little pleasure into the union, as by using ideas together in the working out of purposes or in the solving of problems. In other words a teacher is not so much concerned with the fact that ideas do cohere as with the question of how to secure the most useful modes of coherence. He is not so much interested in the fact that two ideas may be associated by contiguity or by similarity as in the fact that a problem or purpose furnishes a dynamic center about which the simpler portions of experience may cluster and acquire indissoluble connections.

This in like manner is seen to be the condition of effective memory, of discrimination, of concept-formation, of judgment, and of reasoning. The limits of a brief paper forbid a detailed statement of this latter portion of the course. In fact, only the barest outlines of any of it have been given and it is not likely that such a schematic statement can prove entirely convincing. It can only be said in conclusion that the main objective of the course is to get old psychological facts from a new angle, such a one as will enable the student to determine which facts are really significant for the control of the educative process. As it has actually been worked out and tried with many classes the writer does not feel that it should be subjected to the criticism of being scrappy or of being a mere rehash of the general science of psychology. The ever-present educational problem gives opportunity for an organized and unified as well as for an entirely fresh treatment.

IRVING KING.

RECORD OF AN EXPERIENCE WHILE UNDER THE
INFLUENCE OF ETHER¹

WHILE living on a farm in Wayland, Mass., during the year 1896, it became necessary for me to have an operation performed for the removal of hemorrhoids. Having eaten nothing since the night before, and after a night of intense suffering, and during the early morning drinking more than a quart of strong black coffee, I was placed under the influence of ether about 9 A.M.

While inhaling the ether, I tried to think of something pleasant, so that my dreams might not be of an unpleasant nature. Gradually I became unconscious, singing, "Oh! the beautiful flowers," in a vain attempt to bring an image of natural scenery before my view.

My next impression was one of being utterly and completely lost to everything, even to the fact that *I* was *I*. It is hard to convey to another the complete sense of loss of everything, friends, home, and individuality. I seemed to be down on the ground, in a deep, dark, dense forest, yet without seeing or feeling any trees, and yet I seemed to sense large tree trunks standing closely together. I had no feeling of pain, only of immeasurable loss. All at once I heard a voice, scarcely audible, calling from a vast distance, "Mr. Walker—Mr. Walker." And oh! the joy that rushed through my mind, the feeling of infinite relief, the feeling of connection with somebody. "Why," I thought, "that is me, I am somebody, that's my name, I have a name, I have a friend, oh! how good," and I was filled with a feeling of contentment such as I have never experienced before or since.

I seemed to know no more until I recovered sufficiently to recognize my wife about 5 P.M. Later, I learned that the voice I had heard, was that of the doctor, who raised my eyelid, and called me by name, about an hour before I became actually conscious. He said to my wife, "He is all right now, he is coming round."

The impressions I received were so vivid that I have tried to analyze them. I have wondered whether they might not be similar to the first impressions of a developed consciousness entering into another world, similar to the feelings that might cause the first fearful cry of a new-born child, just broken loose from all its past environment, provided it had a consciousness sufficiently developed to realize the loss of all it had hitherto been connected with and dependent upon.

It may be a common experience, but I have no knowledge of a similar one.

HARRY WALKER.

PORT JERVIS, N. Y.

¹Communicated to this JOURNAL by Professor William James, and printed by permission of the writer.

DISCUSSION

CAUSE AND GROUND

MR. H. S. SHELTON, in number 10 of the current volume of this JOURNAL, incidentally criticises my treatment of "Cause and Ground."¹

The criticism amounts to this, I think, that the conception of cause is identified by me with that of ground in such a way as to make it valueless for practise, while the conception of ground itself is in a sphere where scientific investigation has no meaning. I should be sorry for your readers to think the former criticism wholly relevant and the latter wholly true and I should wish to explain what a theory like mine tries to do, and how far I still maintain that it has been successful in doing it.

1. As to value for scientific practise. The purpose of a general work on logic is emphatically not to teach scientific men their business. It is a theory of a whole subject, of which their work is only a part; and its primary aim is to put the whole subject in its natural order in a single view. For this purpose, methods processes and ideas must be put in their place; and may often lose the prominence which they claim in the eyes of workers in some special part of the field of knowledge. But to put them in their place is not to reject them; and although one does not expect to teach scientific men their business, one would be sorry to think either that one was wholly out of harmony with the spirit of their procedure, or that absolutely no light was thrown upon its nature, no scientific advance indicated or corroborated, by the juxtaposition and explanation which one had attempted.

In dealing with the idea of cause² I have tried to give reasons for the difficulty and evasiveness of the conception and to explain it as marking a stage in a continuous process of inference, in the higher phases of which it is not applicable. And in quite another place³ I have tried to trace this continuous process itself—the inductive process from perception upwards, and to show that it does equally well without using at all the terminology or the elementary and popular idea of cause and effect. And here I had hoped, and am still of opinion, that I was at least on parallel lines with and had in some

¹ See my "Logic," Vol. I., c. VI.; and also Vol. II., c. IV., "Scientific Induction by Perceptive Analysis," or more shortly in "Essentials of Logic," pp. 164-5.

² Vol. I., l. c.

³ Vol. II., l. c.

degree anticipated a very powerful movement in the ranks of the most recent workers in the field of exact natural knowledge, who "openly propose to expel the word 'cause' from the language of science."⁴

But in thus "theorizing" the ordinary conception of cause and effect, I was not suggesting in any way that it is not of value for the working procedure of certain sciences at certain stages. Chemistry, I presume, from which Mr. Shelton draws his instance of argon, is not in a position to aim at complete explanation ("ground"), and though it has aspirations in that direction, yet practically works in the main by direct perceptive analysis of the qualities of objects, and their effect upon one another. Here the conception of cause and effect in the sense of conditions "producing" a new condition, unaccountably different from themselves, is fully in place. But at this level it is impossible to get the conditions fully relevant to the effect, and the causal relation remains subject to "plurality of causes"; which is in flat contradiction with the principle that the effect must vary with the cause, not to speak of the difficulties attending the priority of cause in time.⁵

Now a contradiction in itself is nothing against a working conception. But any one who wishes to regard a subject as a whole must try at least to soften the contradiction by showing how it leads up to something less contradictory.

2. That is why one was driven, following many suggestions of philosophers, and in accordance with a strong tendency in men of science,⁶ to exhibit the idea of cause and effect as concerned with events in time or the interaction of substances as leading up to a conception which would include what was true in it but get rid of some at least of its contradictions. I will explain the nature of this conception a little further, and try to show how many cross lights of thought are reconciled in it.

⁴ Taylor, "Elements of Metaphysics," p. 175. I see that in a footnote, *l. c.*, Professor Taylor objects to the suggestion that the "descriptive" theory was a discovery of idealists. And I should not make the claim as bearing on the detailed practise of science; but I will try to show elements of kinship with it which I think are not negligible.

⁵ Mr. Shelton in his example does not show his hand on this point. But surely the current idea of cause and effect, if you are going to use it, ties you down to events successive in time.

⁶ I suppose I took the idea of "ground" from Hegel, observing that it agreed with points which I shall notice in Plato, and that Mill's notion of the "sum" of conditions when worked out pointed in the same direction, while Clifford roundly said ("Lectures and Essays," I., 150) that cause is simply one word for understanding all about a sequence of events. I did not, I fear, know of the "descriptive" movement, and was glad to be confirmed by it.

I understand my critic to allege it as a fault of this conception that an experience referred to its ground is one which can not be repeated.

And first, this implies that the interest and value of inductive science demands and is addressed to events which are repeated.

But strictly, I think, this is untrue. If the alleged principle of induction "same cause, same effect" were taken as its principle in bitter earnest, there could be no inference and no discovery. The interest of inductive science is surely in getting from the old knowledge to the new, and therefore in interpreting known laws in relation to new suggestions as guide to novel facts. Inductive theory is apt to leave out this side of the matter because it can not be reduced to rule. But all the same, it is where the real stress of induction lies. Professor Stout's "proportional systems" are the nearest thing, perhaps, to what is wanted at this part of the theory.⁷ If an occurrence were strictly repeated, without novelty of conditions, its inclusion in an induction would have no value nor interest.

But waiving the above, which might be termed a purist view, is it true that an occurrence stated with reference to its real ground can not be repeated in the sense in which ordinary occurrences are repeated under new conditions?

When this assertion is specially made about an occurrence known in its ground it can only mean that we then *ex hypothesi* know so much about it as to differentiate it from any possible future occurrence. That is to say, our knowledge in the case supposed represents the reality of nature—the complexity of the situation—very much more adequately than when we know it as cause and effect qua separate things or events. If so, surely, for the real inductive interest, which lies in proceeding to new knowledge by disentangling new sequences, the analyzed ground is much more helpful than the mere meaning of a concrete cause whose nature and action we are unable to analyze. In a word "ground" means completer knowledge, and completer knowledge is more practically helpful than less complete.

My critic seems to assume that a reciprocal judgment can not have its content developed and must amount to a tautology. But why? I shall show directly that even as a tautology it may be a very valuable protest against errors which frequently occur in practise. But apart from this, the whole content of a science may be involved in a good definition, which is certainly always a reciprocal judgment.

In a particular case, a given science, which can pronounce on a

⁷ See also my Vol. II., p. 174, on generalization by inclusion in a system as opposed to generalization by an abstract class-name.

de facto cause, may very well be unable to supply the detail required for a developed statement of ground. But that is its own lookout. No one doubts that if it could do so it would be better off than it is. Such knowledge is the very ideal on which chemistry is generally understood to have fixed its eyes. If you could say the ultimate law or nature of matter is such, and argon is such and such a modification of it, and its properties flow from this its nature, and among others its gravity, by which we first empirically discovered its existence; that would be a reciprocal judgment, and surely would be an advance towards what knowledge aspires to be. Why not explain a protective resemblance by natural selection as operative on a creature through its special environment? What is there tautologous in this?

But, I will say, tautology is not a bad thing, if it reminds us that an explanation must not leave out the matter to be explained. After all, a thing can only be explained by what includes it. "I can not understand," Plato makes Socrates say, in effect, with a large element of humor and irony, "I can not understand all those cunning causes that people speak of; but I do believe that I am safe in sticking to this, that it is beauty by which things are beautiful." This passage reads like a prophetic criticism of esthetic theories. Suggested explanations of beauty such as pleasure, realism, idealism, pure form, pure feeling, vanish like shadows before such a criterion. Within an explanation, you must retain the thing to be explained.

In ground, you are sure of this. The "effect" has become a case inside a system. In cause and effect you can not be quite sure. The relevancy of cause to effect is incomplete. You do not really know what, in your cause, is causal, and therefore what in it guarantees the effect, because, *ex hypothesi*, effect is outside cause.

I cite another defence of apparent tautology which puts the matter strikingly.

"If the case is taken as the instance of a rule, even that by itself is *some* explanation. I know it has been said, and by those whom I respect, that we have nothing here but bare tautology; that it is frivolous to tell me that this bottle breaks *because* all bottles break. But I confess that I never could see the *bare* tautology. For the particular nature of our one bottle is in this way connected with a general law. It does not break because it is a black bottle, or a bottle made by an infidel on a Sunday, but because it possesses an unstated quality common to other bottles. And this quality is a reason why it breaks. The explanation of course does not satisfy our desires, since we want to make the quality explicit; but, so far as it goes, it does give us some principle, and it can not fairly be condemned as tautologous."⁸

Extremes meet; and while I make no claim to have anticipated the descriptive theorists on scientific ground (the suggestion which

⁸ Bradley, "Principles of Logic," p. 49.

Professor Taylor rejects was not of my making), I do most certainly hold that Plato and Hegel and Mr. Bradley, followed at an enormous interval by myself, were driving at the same point which the "descriptive" movement has worked out on purely scientific soil. And this point is that cause and effect are arbitrary distinctions drawn on the surface of a continuous system or process. And what you must do, if science is to advance towards its aim, is to get this process or system expressed in the simplest terms, showing any effects which may interest you as cases included in it.

At all events, a logical theory has to deal with all these ideas and experiences and bring them together according to their values and interdependence. But in doing so, it does not in the least imply that men of science ought to use other ideas than they do use at particular points in their work. I may add that in my judgment this view of the nature of working ideas according to which they are dictated by the purposes for which they are needed, gives pragmatism all it ought to have, and is, of course a much older view than pragmatism. I know no justification for calling logic which takes such a view—Hegel's logic for example—"intellectualist."

B. BOSANQUET.

OXSHOTT, SURREY.

REVIEWS AND ABSTRACTS OF LITERATURE

Die Taktile Schätzung von ausgefüllten und leeren Strecken. Reprinted from *Archiv für Gesamte Psychologie*, Bd. XVI, Heft 3 and 4. HELEN DODD COOK. Pp. 130.

The importance of method and procedure and their relation to results in experimental studies is nowhere more apparent than in the field of space perception. Time and again quantitative results which were purely a function of method have been generalized into qualitative principles of the field under investigation. Thus contradictory differences between active and passive movement may be traced to the operation of such secondary criteria as the illusion of impact. Controversy over the absolute "indifference point" in various sense fields depends in large measure on the range of magnitudes employed in different investigations, and many studies of visual interpretation are inadequate because the results are conditioned by the particular range within which the observations were made. In her recent study of the tactual estimation of filled and empty extents Dr. Helen Dodd Cook has admirably demonstrated the rôle of method and procedure in the field of tactual space perception.

The study takes its point of departure from the discordant results of Rieber, Parish and others in their experiments on the familiar illusion of open and filled space, and was begun in an attempt to reconcile these differences. In the course of the experiments other interesting results

came to light concerning the influence of place, force, and duration of the application of the stimulus, the rôle of visual imagery, the number of intermediate points, absolute length of the stretch, distribution of attention, mode of apprehending the stimulus, absolute impression, and individual differences with respect to the magnitude and direction of the illusion.

The method used throughout the investigation was that of the resting stimulus, the points of esthesiometers of varied construction being applied to the volar surface of the forearm in the long axis. The empty space or uninterrupted extent was represented by the distance between two points and filled space or interrupted extent by a similar stretch filled in with fixed points at variable distances apart. The experiments fall into two general groups or series.

Series I.—A set of four experiments by the method of minimal change, the standard and variable applied successively to the same area, and the terminal points being equidistant from the wrist and elbow joint respectively. Range—6–14 cm. Results—filled space is here underestimated in comparison with empty space, irrespective of time order. The illusion is influenced in magnitude by the clearness of the intermediate points. Initially, absolute localization plays an important rôle, but with practise the judgment comes to rest more and more on the direct perception of pure differences (qualitative?) in the pressure sensations themselves.

Series II. consists of three groups of experiments by the method of right and wrong cases (groups 5, 6 and 7).

Group 5.—Stimuli applied simultaneously to adjacent areas. Filled space is here always overestimated in comparison with empty space, and the overestimation is not caused by visual imagery, but is purely a tactual phenomenon. Direction of attention to any one stretch increases its apparent length. In most observers no space error is disclosed. When the immediate "Streckeneindruck" is the principal criterion for the judgment the magnitude of the illusion increases with the magnitude (length) of the stimulus. When secondary criteria are largely relied on an inverse relation is found. The dependence of the magnitude of the illusion on the number of intermediate points is conditioned by the way in which the stretch is apprehended (Auffassungsweise)—on whether the comparison is made in terms of the relative intensity of the two stimuli, the clearness of the intermediate points of the filled stretch, localization of the extreme points, or pure impression of extent, the illusion being greatest in the last case.

Group 6—by the method of right and wrong cases, with stimuli applied successively to the same area—confirms the results of Series I., indicating that the direction of the illusion depends on the mode of presentation of the stimulus. Differences in intensity, quality, etc., of the stimulus influence the absolute magnitude of the illusion and its relation to length of stretch, number of intermediate points, etc., but do not affect its direction.

Group 7 presents a combination of the procedures of 5 and 6, the stimuli being applied successively to adjacent areas. There is here a

tendency to overestimate the standard in the case of empty space, but no illusion in the comparison of empty space with filled.

In general the illusion seems to depend chiefly on the distribution of attention, on the mode of apprehending the stimulus and on the type of judgment, and these factors are largely conditioned by the way in which the stimuli are presented (*Darbietungsmethode*). Introspective records taken during the experiments yield, among other things, the following results—when the pure “*Streckeneindruck*” is the basis of the comparison, immediately contiguous stimuli applied simultaneously may seem to overlap. This overlapping increases with the length of the standard.

The presence of intermediate points may cause apparent displacement of the extremes, the amount of displacement depending on the force of application of the stimulus or on the degree of summation of the intensities of the separate points.

Immediate tactual impressions of extent are possible, and are especially clear in the case of filled space.

Absolute impression, dependent on expectation and adaptation, frequently plays a part in the process of comparison.

Large individual differences are shown with respect to the presence of visual imagery and schematic visual representations.

Peripheral irradiation alone is inadequate to account for the illusion.

The simultaneous method of presentation leads to a synthetic apprehension of the stimulus and to overestimation. The successive method results in analytic apprehension, but not always in underestimation.

Benussi's law of the relation of practise effect to mode of apprehension is confirmed in only part of the observers.

The extension of these principles to other tactual and to optical illusions must be made with extreme caution. No single theory seems adequate to explain the large number of spatial illusions. Nevertheless, a comparison of the tactual illusion with the analogous illusion in visual perception yields instructive points of agreement and difference.

H. L. HOLLINGWORTH.

COLUMBIA UNIVERSITY.

JOURNALS AND NEW BOOKS

REVUE NÉO-SCOLASTIQUE DE PHILOSOPHIE. February, 1910. *Kantisme et Métagéométrie* (pp. 5-22): C. SENTROUL. — The non-Euclidean systems of geometry are far from disproving Kant's conception of space, or his philosophy of mathematical knowledge. *Le calcul des probabilités et les régularités statistiques* (pp. 23-52): JOSEPH LOTTIN. — Historically, the statistical method is a corollary of the mathematical theory of probabilities; logically, it is akin to the inductive method. *Arnold Geulincx et le procès de la philosophie aristotélicienne au XVIIe. siècle* (pp. 53-66): M. DE WULF. — The vivid attack made by Geulincx on the method and doctrines of the Peripatetics during the Saturnals of 1652 was well deserved by the degenerated representatives of Peripateticism at

the time. It does not, however, reach Peripatetic philosophy itself. *Variétés. L'état actuel du rosminianisme en Italie* (pp. 67-73): F. PALHORIÈS. — Rosminianism is actually defended in Italy by a few isolated thinkers (Billia, Morando, Caviglione) and possesses an official organ, the "Rivista Rosminiana." It can not be, however, properly called a school, nor even a philosophic group. *L'œuvre scientifique et philosophique de César Lombroso* (pp. 73-93): A. GEMELLI, O.F.M. — Lombroso's work has a philosophical as well as a scientific character. Lacking logical and critical sense in philosophy, devoid of method in the use of scientific observation and experiment, Lombroso, however, can be regarded neither as a scientist nor as a philosopher. *Le mouvement néo-thomiste* (pp. 93-103): L. NOËL. — A historical account of the recent neo-thomistic movement in Italy, Holland, Spain, and Ireland. *Bulletin de Cosmologie* (pp. 104-132): D. NYS. J. LEMAIRE. — A review of the most recent scientific discoveries and hypotheses with regard to the intimate constitution of matter. *Comptes rendus*. Ag. Gemelli, *L'enigma della vita e i nuovi orizzonti delle scienze biologiche*: J. VAN MOLLÉ. Charles Renouvier, *Critique de la doctrine de Kant*: C. SENTROUL. A. Keim, *Helvétius, sa vie, son œuvre*: JEAN NEVEN. R. Saitschik, *Französische Skeptiker, Voltaire, Mérimée, Renan. Zur Psychologie des neurren Individualismus*: JEAN NEVEN. Chanoine Brettes, *L'homme et l'univers*: D. NYS. William James, *Précis de Psychologie, traduit par E. Baudin et G. Bertier*: L. NOËL. Bertrando Spaventa, *La filosofia italiana nelle sue relazioni con la filosofia europea*: C. S. R. P. Gillet, *Devoir et Conscience*: L. NOËL. Dr. J. Kachnik, *Historia philosophiæ*: G. WALLERAND. Dr. J. Kachnik, *Ethica socialis seu Sociologia*: G. WALLERAND. G. Legrand, *L'évolution des doctrines économiques au XIX. siècle*: L. N. *Chronique philosophique. Sommaire idéologique des ouvrages et des revues de philosophie*.

Babbitt, Irving. *The New Laokoon. An Essay on the Confusion of the Arts*. Boston and New York: Houghton, Mifflin Company. 1910. Pp. xiv + 252.

Blight, Stanley M. *The Direction of Desire*. London, Edinburgh, Glasgow, New York, Toronto, Melbourne: Henry Frowde. 1910. Pp. xii + 360. \$0.70.

Carreño, Geraro González. *La educación sexual*. Madrid: Sáenz de Jubera Hermanos. 1910. Pp. xv + 429. 3.50 ptas.

von Dunin-Borkowski, Stanislaus. *Der Junge Despinoza. Leben und Werdegang im Lichte der Weltphilosophie*. Münster i. W.: Aschen-dorffsche Buchhandlung. 1910. Pp. xxiii + 633.

Frost, Walter. *Naturphilosophie*. Leipzig: Johann Ambrosius Barth. 1910. Pp. x + 306. M. 8.

Goodsell, Willystine. *The Conflict of Naturalism and Humanism*. Columbia University Contributions to Education. No. 33. New York: Teachers College, Columbia University. 1910. Pp. vii + 183. \$1.15.

Gross, Dr. Felix. *Form und Materie des Erkennens in der Transzendentalen Asthetik*. Leipzig: Johann Ambrosius Barth. 1910. Pp. viii + 100. M. 2.80.

- Higgs, Mary. *The Evolution of the Child Mind*. London: Froebel Society of Great Britain and Ireland. 1910. Pp. 67.
- Lindsay, A. A. *The New Psychology: Its Basic Principles and Practical Formulas*. Portland, Oregon: Lindsay Publishing Co. 1908. Pp. 99. \$1.25.
- Natorp, Paul. *Die logischen Grundlagen der exakten Wissenschaften*. Leipzig and Berlin: B. G. Teubner. 1910. Pp. xx + 416.
- Peillaube, E. *Les Images. Essai sur la mémoire et l'imagination*. Paris: Marcel Rivière & Cie. 1910. Pp. 513. 9 fr.
- Peladan. *La philosophie de Leonard da Vinci*. Paris: Alcan. 1910. Pp. 189. 2.50 fr.
- Santayana, George. *Three Philosophical Poets. Lucretius, Dante, and Goethe*. Cambridge, Mass.: Harvard University Press. 1910. Pp. viii + 214.
- Stumpf, Carl. *Beiträge zur Akustik und Musikwissenschaft*. Leipzig: Barth. 1910. Pp. 167.
- Talbert, Ernest Lynn. *The Dualism of Fact and Idea in its Social Implications. Philosophical Studies, No. 2*. Chicago: University of Chicago Press. 1910. Pp. 52.
- Talbot, Marion. *The Education of Women*. Chicago: University of Chicago Press. 1910. Pp. 255.
- Volkman, P. *Erkenntnistheoretische Grundzüge der Naturwissenschaften*. Leipzig: Teubner. 1910. Pp. 454. N. 6.

NOTES AND NEWS

BELOW is printed the list of members of the Western Philosophical Association for 1910.

- Alexander, Professor H. B., University of Nebraska, Lincoln Neb.
 Ames, Professor E. S., University of Chicago, Chicago, Ill.
 Angell, Professor J. R., University of Chicago, Chicago, Ill.
 Becker, Mr. F. C., University of Illinois, Urbana, Ill.
 Bode, Professor B. H., University of Illinois, Urbana, Ill.
 Boodin, Professor John E., University of Kansas, Lawrence, Kan.
 Bryant, Dr. W. M., Webster Groves, St. Louis, Mo.
 Campbell, Professor H. G., Morningside College, Sioux City, Iowa.
 Coe, Professor G. A., Union Theological Seminary, New York City.
 Colvin, Professor S. C., University of Illinois, Urbana, Ill.
 Corey, Professor C. E., Washington University, St. Louis, Mo.
 Cowling, Professor D. J., Baker University, Baldwin, Kan.
 Crawford, Professor A. H., Tabor College, Tabor, Iowa.
 Daniels, Professor A. H., University of Illinois, Urbana, Ill.
 Davies, Dr. A. E., Ohio State University, Columbus, Ohio.
 Dodson, Rev. G. R., 48 Nicholson Place, St. Louis, Mo.
 Ellwood, Professor C. A., University of Missouri, Columbia, Mo.

- Ewer, Professor B. C., Northwestern University, Evanston, Ill.
Farley, Professor J. H., Lawrence University, Appleton, Wis.
Fite, Professor Warner, University of Indiana, Bloomington, Ind.
Fracker, Professor G. C., Marquette, Mich.
French, Professor F. C., University of Nebraska, Lincoln, Neb.
Fruit, Professor J. R., William Jewell College, Liberty, Mo.
Gore, Professor W. C., University of Chicago, Chicago, Ill.
Haynes, Professor Rowland, Univ. of Minnesota, Minneapolis, Minn.
Hill, President A. Ross, University of Missouri, Columbia, Mo.
Hinman, Professor E. L., University of Nebraska, Lincoln, Neb.
Hudson, Professor J. W., University of Missouri, Columbia, Mo.
Johnson, Dr. T. M., Osceola, Mo.
King, President H. C., Oberlin College, Oberlin, Ohio.
Knowlton, President P. G., Fargo, North Dakota.
Lindley, Professor E. H., Indiana State University, Bloomington, Ind.
Lloyd, Professor A. H., University of Michigan, Ann Arbor, Mich.
Longwell, Dr. H. C., Northwestern University, Evanston, Ill.
Lovejoy, Professor A. O., University of Missouri, Columbia, Mo.
Luckey, Professor G. W. A., University of Nebraska, Lincoln, Neb.
MacLennan, Professor S. F., Oberlin College, Oberlin, Ohio.
MacMillan, Dr. D. P., Chicago, Ill. Director Department Pedagogic Research and Child Study.
Major, Professor D. R., Ohio State University, Columbus, Ohio.
McGilvary, Professor E. B., University of Wisconsin, Madison, Wis.
Meade, Professor G. H., University of Chicago, Chicago, Ill.
Meyer, Professor Max, University of Missouri, Columbia, Mo.
Millerd, Professor Clara E., Iowa College, Grinnell, Iowa.
Monin, Professor L. C.,
Moore, Professor A. W., University of Chicago, Chicago, Ill.
Norton, Professor E. L., University of Illinois, Urbana, Ill.
O'Shea, Professor M. V., University of Wisconsin, Madison, Wis.
Patrick, Professor G. T. W., University of Iowa, Iowa City, Iowa.
Pillsbury, Professor W. B., University of Michigan, Ann Arbor, Mich.
Powell, Professor E. E., Miami University., Oxford, Ohio.
Raub, Professor W. L., Knox College, Galesburg, Ill.
Reuger, Professor H. A., Colorado College, Colorado Springs, Col.
Rogers, Professor A. K., Butler College, Irvington, Ind.
Rogers, Professor D. C., University of Kansas, Lawrence, Kan.
Scott, Professor W. H., Ohio State University, Columbus, Ohio.
Seashore, Professor Carl E., University of Iowa, Iowa City, Iowa.
Sharp, Professor F. C., University of Wisconsin, Madison, Wis.
Sherman, Dean L. A., University of Nebraska, Lincoln, Neb.
Starbuck, Professor E. D., University of Iowa, Iowa City, Iowa.
Starch, Dr. Daniel, University of Wisconsin, Madison, Wis.
Stephens, Chancellor D. S., Kansas City University, Kansas City, Mo.
Stuart, Professor H. W., Stanford University, Calif.
Swenson, Mr. David, University of Minnesota, Minneapolis, Minn.
Swift, Professor W. J., Washington University, St. Louis, Mo.

Talbert, Dr. E. L., Milwaukee Normal School, Milwaukee, Wis.
 Tawney Professor G. A., University of Cincinnati, Cincinnati, Ohio.
 Templin, Professor Olin, University of Kansas, Lawrence, Kan.
 Thilly, Professor Frank, Cornell University, Ithaca, N. Y.
 Tufts, Professor J. H., University of Chicago, Chicago, Ill.
 Turner, Professor William, St. Paul Seminary, St. Paul, Minn.
 Wenley, Professor R. M., University of Michigan, Ann Arbor, Mich.
 Wilde, Professor Norman, University of Minnesota, Minneapolis, Minn.
 Williams, Professor Mabel C., University of Iowa, Iowa City, Iowa.
 Wilm, Professor E. C., Washburn College, Topeka, Kan.
 Woodbridge, Professor F. J. E., Columbia University, New York City.
 Wright, Professor H. W., Lake Forest College, Lake Forest, Ill.
 Wright, Dr. W. K., University of Wisconsin, Madison, Wis.

At the meeting of the Aristotelian Society on June 6, Mr. Sydney Waterloo read a paper on "Some Philosophical Implications of Mr. Bertrand Russell's Logical Theory of Mathematics." "The paper had two principal objects: (1) to explain in outline the way in which Mr. Russell proves, in his book 'The Principles of Mathematics,' that the notions of infinity and continuity, as defined in modern mathematics, involve no contradictions; and (2) to examine the philosophical consequences of this proof. While admitting that Mr. Russell's proof that infinity is possible has no direct bearing on the question 'What is the nature of what exists?' he suggested that some of Mr. Russell's arguments were perhaps capable of making probable a certain universal hypothetical proposition of the nature of reality—the proposition, namely, that, if anything exists, then it is either an indivisible term or a whole composed of indivisible terms. Mr. Russell's theory of relations perhaps pointed to this conclusion, and he accordingly set forth the reasons which Mr. Russell gives for holding that relations are genuine entities and that they are external to their terms."—*The Athenæum*.

At the University of Missouri Dr. A. K. Rogers, of Butler College, has been appointed professor of philosophy, as successor to Professor A. O. Lovejoy, and Mr. Carter Alexander, fellow in Teachers College, Columbia University, has been appointed assistant professor of educational administration and private secretary to the president.

DR. W. V. BINGHAM, of Teachers College, Columbia University, has been called to Dartmouth College as assistant professor of psychology and education.

DR. J. E. WALLACE WALLIN, of the New Jersey Training School, has been designated Director of Psychological Research by the Committee on Oral Hygiene of the National Dental Association. A squad of children, suffering from decided oral defects, has been segregated for special treatment during half a year or more. A number of standard psychological tests will be carried out at stated intervals, in order to obtain an objective and demonstrable measure of any mental improvement which may result from the restoration of normal oral conditions.

THE JOURNAL OF PHILOSOPHY

PSYCHOLOGY AND SCIENTIFIC METHODS

HUXLEY'S EPIPHENOMENALISM: A CRITICISM AND AN APPRECIATION¹

HUXLEY'S theory of the relation between mind and body receives little attention nowadays when parallelism and interactionism divide the field between themselves. It seems to be taken for granted by those who are unsympathetic with interactionism that parallelism is the only alternative, that Huxley's position is intelligible only as a step in the direction of parallelism, and that short of parallelism one may not stop when once this direction has been taken. It will be the attempt of this paper to show that while Huxley's theory is indefensible as it stands, it is capable of development into a view other than parallelism, and that this view is self-consistent and consistent with known facts. In my opinion, it is the most satisfactory working hypothesis at present available, and avoids the difficulties involved in interactionism and parallelism, but its apparent advantages over its rivals can not here be discussed. All I can do is, starting from Huxley's theory, to show what modification is necessary to arrive at this view, and why this modification is necessitated by the very logic of his position and made possible by a correct statement of facts an incorrect statement of which misled him into epiphenomenalism; and then I hope to remove some difficulties that may stand in the way of understanding the view thus developed.

To get Huxley's view before us exactly, I shall take the liberty of making rather long quotations from him. As his doctrine was an attempt to reconcile with the law of the conservation of energy the apparent fact that conscious processes² are effects of physical proc-

¹ A paper read at the meeting of the Western Philosophical Association at Iowa City, March 25, 1910. In view of the discussion that followed the reading, some passages have been rewritten for the sake of greater clearness.

² It is not necessary here to enter upon a discussion of Huxley's view of conscious processes or of how much he included under this term. Let it suffice to say that in general his doctrine of the relation between mind and body, with the modifications that I shall propose, is independent of any special view of the

esses in the brain, let us begin with his statement of the relation of conscious processes to that law.

"The doctrine of the conservation of energy which I have endeavored to illustrate is thus defined by the late Clerk Maxwell:

" 'The total energy of any body or system of bodies is a quantity which can neither be increased nor diminished by any mutual action of such bodies, though it may be transformed into any one of the forms of which energy is susceptible.' It follows that energy, like matter, is indestructible and ingenerable in nature. The phenomenal world, so far as it is material, expresses the evolution and involution of energy, its passage from the kinetic to the potential condition and back again. Wherever motion of matter takes place, that motion is effected at the expense of part of the total store of energy.

"Hence, as the phenomena exhibited by living beings, in so far as they are material, are all molar or molecular motions, these are included under the general law. A living body is a machine by which energy is transformed in the same sense as a steam-engine is so, and all its movements, molar and molecular, are to be accounted for by the energy which is supplied to it. The phenomena of consciousness which arise, along with certain transformations of energy, can not be interpolated in the series of these transformations, inasmuch as they are not motions to which the doctrine of the conservation of energy applies. And, for the same reason, they do not necessitate the using up of energy; a sensation has no mass and can not be conceived to be susceptible of movement. That a particular molecular motion does give rise to a state of consciousness is experimentally certain; but the how and the why of the process are just as inexplicable as in the case of the communication of kinetic energy by impact."³

Two things should be observed with regard to the conceptions that appear in this quotation. The one concerns the general conception of law and the other concerns the meaning of the particular law of causation. Scientific laws are for Huxley assumptions of order in the universe, borne out by experience. "All physical science starts from certain postulates. . . . The validity of these postulates is a problem of metaphysics; they are neither self-evident nor are they, strictly speaking, demonstrable. The justification of

nature of consciousness. All that the doctrine presupposes is that consciousness is not material. Huxley has a definition of matter which is given on page 60 of the work to be referred to in the next foot-note, but this definition again need not be accepted by one who holds to his general view of the relation between mind and body. All that is necessary is to conceive matter as occupying space and moving therein and existing in realistic and not idealistic fashion.

³ *The Progress of Science*, in "Methods and Results," pp. 94-95 of the Macmillan edition, 1904.

their employment, as axioms of physical philosophy, lies in the circumstance that expectations logically based upon them are verified, or, at any rate, not contradicted, whenever they can be tested by experience."⁴ If Huxley is at times dogmatic, his dogmatism is only his resolute purpose to remain consistent with his postulates so long as "expectations logically based upon them are verified, or at any rate, not contradicted" by experience. His obstinate attempt to reconcile the appearance of consciousness in connection with physical changes in the brain with the law of the conservation of energy was not due to any conviction of the logical necessity of that law. His interpretation of the logical basis of that law was exactly the same as that given by Clerk Maxwell himself, who said: "This doctrine, considered as a deduction [induction?] from observation and experiment can, of course, assert no more than that no instance of a non-conservative system has hitherto been discovered. As a scientific or science-producing doctrine, however, it is always acquiring additional credibility from the constantly increasing number of deductions which have been drawn from it, and which are found in all cases to be verified by experiment. . . . When once apprehended it furnishes to the physical inquirer a principle on which he may hang every known law relating to physical actions, and by which he may be put in the way to discover the relations of such actions in new branches of science."⁵ Huxley believes that the law is true, and he believes this because the assumption that it is true has enabled the scientist to discover more truth.

The second observation has to do with the meaning of causation as Huxley used this conception. "Another postulate is the universality of the law of causation; that nothing happens without a cause (that is, a necessary precedent condition), and that the state of the physical universe, at any given moment, is the consequence of its state at any preceding moment."⁶ Again, in another work, he says:

⁴ *Op. cit.*, pp. 60-61.

⁵ "Matter and Motion," chapter V.

⁶ *Op. cit.*, pp. 60-61. The only word that need give us pause in trying to understand this statement of his meaning of causation is the word "necessary." This pause is necessitated in view of the fact that elsewhere he "repudiates and anathematizes the intruder." "Fact I know; and Law I know; but what is this Necessity, save an empty shadow of my own mind's throwing?" ("On the Physical Basis of Life," *op. cit.*, p. 161.) It is evident to a careful reader that Huxley believes in necessity and disbelieves in Necessity. The former is only the synonym for invariability. The latter is a "most gratuitously invented bugbear," whose nature Huxley does not exactly define, although he writes of it as if it were a supposititious monster which, it is alleged, prevents men always from doing what they like; and of course being a man who had often experienced the satisfaction of doing what he liked, he was naturally inclined to believe this monster to be a myth.

"For that relation [of cause and effect] is nothing but an order of succession, which, so far as our experience goes, is invariable; and it is obvious that the nature of phenomena has nothing to do with their order. . . . The only meaning of the law of causation, in the physical world, is that it generalises universal experience of the order of that world."⁷ Whatever one may think of Huxley's refusal to define causation as anything but an invariable order of succession, one at least may not deny him the right to use this definition of the term if he consistently abides by it. Now it is clear that if by causation be meant nothing but invariable order of succession, something else than invariable order of succession is not causation. Now the law of the conservation of energy formulates a relation which is something else than that of invariable succession. This relation is that of quantitative equivalence of energy among physical phenomena which are in the invariable order of succession. The law of conservation is not a deduction or corollary from the law of causation, but is the statement of a further relation between physical events, with which the law of causation is compatible, but which can not be logically inferred from that law. Again, inasmuch as the law of the conservation of energy is a law that is based on observed physical sequences and only on observed physical sequences, and is in its very terms applicable to physical sequences alone, the fact that there is an energetic equivalence between physical cause and physical effect does not preclude the possibility that always following *certain* physical events there are events that are not physical. If such prove on empirical evidence to be the case, the invariable non-physical sequent upon such a physical event does not invalidate the empirical law of the conservation of energy. The latter law may hold good of the physical members of the sequence, and if it does the presence of a further relation in addition to the energetic-conservation relation is simply an illustration of the fact with which we are familiar in other cases, the fact, namely, that the same term may stand in several relations, and that one relation does not always suffer modification from the presence of another relation.⁸ A brain process may therefore have two effects, one a physical effect, exhibiting an equivalence of energy with its cause, and another a non-physical effect and, because non-physical, having no energetic relation to its cause. The absence of the energetic relation in the latter case does

⁷ "Hume," New York, 1879, p. 182. I take it that Huxley means, when he says that the nature of phenomena has nothing to do with their order, that one can not argue *a priori* from the former to the latter.

⁸ For instance, the relation of equality between two twos is not impaired by the presence of further relations of likeness or unlikeness that may obtain among the four objects severally.

not necessarily carry with it the absence of the relation of invariable antecedence and consequence, that is, the absence of the causal relation as Huxley defines it. Assuming, therefore, the facts of the relation between brain states and later brain states, on the one hand, and the relation between brain states and later conscious processes, on the other, to be what Huxley thought they were, Huxley was perfectly justified in insisting that the conscious processes should not be "interpolated in the series of physical transformations." On the other hand, he was perfectly justified—on the same assumption—in asserting that the conscious processes are the effects of the brain changes. And he was justified, further, in indignantly repudiating the charge that such an assertion committed him to materialism. The recognition that the psychic is the effect of the physical commits no one to a materialistic interpretation of the psychic, unless he commits himself to the doctrine that physical causes can have *only* physical effects. Such a doctrine is at best an assumption, and no one who makes that assumption is justified in thrusting it upon others who prefer the assumption that "molecular changes in the brain are the causes of all the states of consciousness of brutes."⁹ While it is true that no one has ever observed molecular changes in the brain immediately preceding conscious processes, we have very good indirect evidence that such changes do precede conscious processes, and in view of such evidence we have the right, in absence of empirical confutation, to assume that such sequences are invariable. And this justifiable assumption is nothing but the assumption of a causal connection between body and mind, when causal connection is defined as Huxley defines it. One may not choose to make this assumption, but in the present condition of our knowledge in this matter, one can not justify this refusal on the ground that any empirically ascertained facts preclude it.¹⁰

My conclusion, so far, is that Huxley was warranted in assuming that the psychic is the effect of physical changes in the brain, and in maintaining that this assumption does not prejudice the assumption of a quantitative equivalence of energy in the successive brain changes. But unfortunately Huxley was not satisfied with leaving matters here, nor did he draw the proper logical conclusion from these assumptions. He went on, in defiance of logic, to deny that the psychic can be the cause of brain changes.

That this is sheer inconsistency can best be brought out by using symbols to designate the physical and the psychic processes involved.

⁹ "On the Hypothesis that Animals are Automata," *op. cit.*, pp. 239-40.

¹⁰ It is not possible here to make good this statement by examining all the arguments for interactionism that are based on empirical grounds, hence this statement must be left in its apparent dogmaticalness.

Let us designate the physical processes by the first letters of the alphabet in capitals, and the psychic by the last letters in lower case. We have then the formula

$$\begin{array}{ccccccc} A & \rightarrow & B & \rightarrow & C & \rightarrow & D \rightarrow E \\ & & \searrow & & \searrow & & \searrow \\ & & x & & y & & z \end{array}$$

where the arrows point from cause to effect, according to Huxley's assumption of the causal relations obtaining. Now if both *B* and *x* invariably follow *A*, and if both *C* and *y* invariably follow *B*, then *C* invariably follows *x*. *x* can not be the invariable accompaniment of *B* in following *A* without being the invariable antecedent of *C* which invariably follows *B*. To put it otherwise, *C* can not stand in the order of uniform succession to *B* without also standing in that same order to what is uniformly simultaneous with *B*. On Huxley's assumption, therefore, *x* is "a necessary precedent condition" of *C*; but by the same token it is the cause of *C*, in Huxley's phraseology. To borrow Huxley's own language we may say that if it is experimentally certain that a particular molecular motion does give rise to consciousness, it is just as certain that consciousness gives rise to the next following molecular motion; but the how and why of the process are just as inexplicable as in the case of the communication of kinetic energy by impact.¹¹ If we accept the laws of motion on empirical evidence and assume that in such laws of motion we discover a part of "the rational order which pervades the universe,"¹² on the same evidence we should accept psycho-physical laws, and regard them too as a revelation of the rational order of the universe.

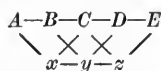
Thus not only is *x* as well as *B* the cause of *C*, but also by the same reasoning is *x* as well as *B* the cause of *y*. In other words, Huxley's assumptions carried out consistently give us three distinct lines of causal connection in the complex series of physical and psychical events. There is the purely physical series of cause and effect; there is the purely psychical series; and there is the psycho-physical series. The first is expressible by our symbols thus: *A—B—C—D—E*, where the lines are lines of causal connection. The second is expressible thus: *x—y—z*. The third to be fully expressed must be written partly in chiasmic fashion:

$$\begin{array}{ccccc} A & B & C & D & E \\ & \searrow & \times & \times & \nearrow \\ & x & y & z & \end{array}$$

¹¹ This last reservation merely means that no amount of poring over any term taken in complete abstraction from the actual relations in which it appears will enable us to understand in what relations it appears.

¹² *Op. cit.*, p. 60. I presume that by rational order he means order which makes possible the verification of expectations logically based on the assumption of that order.

Each series is, on Huxley's assumptions logically carried out, a causal series; but not any one of them excludes the other. Each is an abstraction from the whole complex of series; but the abstraction is not a falsification; it does not have to be corrected, but merely to be supplemented by the other two series. The whole complex of series can be symbolized in this fashion:



But the fact that y has a psychical cause is no evidence that x has one, any more than the fact that some brain states have psychic effects is a proof that all physical processes have psychic effects. It is simply a question of fact what events have what causes and what effects. According to the assumption of "the objective existence of a material world," the physical series extends forward and backward beyond the shorter psychical series. But when the psychic emerges its connection with the particular physical events which condition it, and which it conditions, respectively, is not a purely fortuitous connection. Its invariability of occurrence under these physical conditions, and the invariability of the occurrence of the following physical events upon the preceding psychic event, are, to use Huxley's phrase again, part of "the rational order which pervades the universe." The psychic, where it appears, is as integral a part of the universe as the physical. It is only physically epiphenomenalistic; that is, when we are considering *only* the physical connections, the psychic does not enter into account as an object of consideration. The epiphenomenality of the psychic is nothing but its *irrelevance to the task of the physicist*, which is the problem of tracing the purely physical connections. This irrelevance is not a symptom of an intrusion of the psychic into a universe where it does not belong, and where it stays only on sufferance. Belonging to that universe in which it is born, it has its lawful place and lawful connections, and more can not be said for the physical, except that the latter is more pervasive. It is only a metaphysics that recognizes the right of primogeniture, which can exclude mind from membership in the constitution of the universe.

In criticism of the above position it will probably be urged that x can not be the cause of C , because C could happen if B were given without x . The simplest reply to such a criticism is that it ignores the assumption of the view it criticizes. *If* we never have C without both B and x immediately preceding, what right have we to say that we can dispense with x and yet get C , because B would still remain? The only empirical way in which we can determine whether any antecedent is dispensable is to eliminate it and see what happens.

But if we can never experimentally eliminate one of the antecedents of an event, we have no empirical warrant for denying the causality of that event. The fact that certain other physical changes, such as the fall of a stone, can take place without consciousness is no proof that the specific brain change that immediately follows a specific volition could have occurred without that volition. It is true that according to the assumptions of physical science, given *B*, *C* follows, and this assumption is made without reference to the presence of *x*. But the fact that this assumption does not take into consideration the presence of *x* along with *B* does not force one, *when one does take account of x*, to say that *x* is dispensable. If one does take *x* into the reckoning, that is, if one transcends the purely physical view of the situation, then one should apply to *x* the same conception of causation¹³ as is applied to *B*. One should not blow hot on an invariable physical antecedent and cold on an invariable psychological antecedent. However, the fact that *x* is thus to be recognized as a cause of *C* does not warrant one, on Huxley's assumption, in saying that the presence of *x* makes *C* different from what would have followed if *B* had been alone. For the assumptions under which he works preclude the possibility that *B* could be alone; inasmuch as he assumes that *invariably* following *A* are *both B* and *x*. One can not make such an assumption and while still clinging to it also assume that *B* can appear *without x* in sequence upon *A*. If we grant, on the other hand, that *B* could appear without *x* after *A*, then we must deny that *x* is the effect of *A* in Huxley's sense of the word effect; for then *x* would not be an invariable sequent upon *A*. To do otherwise would be like trying to answer the old puzzle: what would happen if an irresistible force were to act upon an immovable body? The answer of course is that the assumption of an irresistible force contradicts the assumption of an immovable body. In the same way it has been asked what would be the bearing upon its own truth of the supposed truth of the statement that all statements are false. The reply is that from an inconsistent statement it is difficult to see how consistent conclusions can consistently be drawn. So when one assumes that *x* always accompanies *B* and that both *x* and *B* always precede *C*, it is difficult to see how one can further assume that *B* without *x* is always followed by *C*. *B* can not always be accompanied by *x*, and also sometimes be by itself. The former assumption may be incorrect, but if it is correct the

¹³ This presupposes that by cause is meant an invariable antecedent condition. If cause is defined otherwise, then the question arises whether that conception is applicable to what is psychic, and it may be applied only if applicable. For instance, one may choose to define cause as an invariable *physical* antecedent, and thus by definition rule out the psychic as cause. But if this is done, one should also rule out the psychic as effect.

latter is precluded. Now as a matter of fact we have about as much evidence that the stimulation in a certain way of a normal optic nerve under certain brain conditions is always followed by a certain "conscious process" as we have for believing that it is also always followed by a definite change in brain conditions. It is hard, therefore, to see how, in our present state of knowledge, one can justify oneself on empirical grounds in denying the propriety of making the assumption that both x and B always follow upon A . If this assumption is made, then, I submit, one is logically bound to regard x as well as B as the cause of C ; and, again I submit, one is logically bound to assume further that C never occurs without the prior occurrence of x as well as of B .

But, again, the assumption that x is an indispensable antecedent of C does not commit one to denying that all the energy of C is found in B , and that all the physical characteristics of C are physically accounted for by B . For by physically accounting for any event is only meant, on Huxley's assumptions, stating all the necessary antecedent *physical* conditions of that event. This can be done and must be done, if done at all, by completely ignoring everything antecedent that is *not* physical. When one turns to the consideration of the non-physical antecedents of the event, if it has any, one must refuse, because these antecedents are non-physical, to impute to them any physical character, such, for instance, as that they allow some of their energy¹⁴ to pass over into their physical effect: not having energy themselves they can not take part in a transaction in which they could engage only if they had it.

It is now possible to indicate briefly the points in which this view,¹⁵ now developed from Huxley's epiphenomenalism, differs from interactionism and from parallelism and also the points in which it agrees with them. It differs from interactionism in declining, consistently with its own assumptions, to say that B without x would be followed by something else than C ; it thus declines not because B without x would still be followed by C , but because, on the assumptions made, B never appears without x . It agrees with interactionism in assuming that C would not have occurred without x . It differs, on the other hand, from parallelism in asserting a causal interrelation between the physical and the psychical where there is evidence that the psychical follows uniformly upon the physical, and

¹⁴ I am using energy here in the sense in which Maxwell uses the term in his "Matter and Motion," not in the sense in which energy is frequently used of will when treated as a purely psychical fact. I am not denying the propriety of the latter use; I think, however, that if it is used in both senses, it is advisable to be distinctly aware of the ambiguity.

¹⁵ If this view requires a name, I should suggest intercausalism as perhaps as appropriate as any.

vice versa; it does this because what it means by causation is invariably uniform sequence. It agrees with parallelism in declining to admit that any physical characteristics of *C* are not completely accounted for physically by *B*, and in declining to admit that a physical account needs to be revised and corrected by a psycho-physical account. Supplementation is not necessarily correction.

One thing further should be said in setting this view right against a possible criticism. The theory of causation adopted in this view, while it may be stated in purely Humian terms, is not necessarily so stated. On the contrary, it is possible to regard relations not as accidentally adventitious in the universe, but as constitutive of it just as much as terms are—just as constitutive of experience as relations are in Kantianism. But while Kantianism is not content with merely recognizing the constitutive character of relations, but proceeds to affirm that all constitutive relations are supplied by the synthetic unity of apperception, this view may regard relations as existing in their own right and not needing any transcendental support. This is the form of the view that appears to me the more tenable, and this seems to be the form of the view, so far as Huxley held it, which he at least at times did hold, as seems to be shown by his speaking of “the rational order which pervades the universe.” According to this view the psycho-physical connections and the psychological connections in the universe are just as ultimate and underivative as are the physical connections. The important point is not to assert dogmatically beyond the evidence that any form of connection, because it obtains somewhere, must obtain everywhere.¹⁶

Before closing this paper it remains to render Huxley a piece of justice that has been generally denied him. In his essay of 1874¹⁷ he declined expressly to recognize the causality of “states of consciousness.” His critics have generally failed to state the reasons he gave for this denial. They have usually represented that his reason was the inconceivability of a causal relation in which consciousness is cause and a physical event is effect.¹⁸ This is gross misrepresentation. Huxley did not dogmatize about material causa-

¹⁶ Professor James's chapter, *The One and the Many*, in his “Pragmatism,” is an eloquent protest against this kind of dogmatism.

¹⁷ *On the Hypothesis that Animals are Automata*, reprinted in “Methods and Results.”

¹⁸ Professor James, “Principles of Psychology,” Vol. I., p. 137, for instance, after quoting from Huxley among others to show what the automaton theory is, says: “But one has no right to pull the pall over the psychic half of the subject only, as the automatists do, and to say that *that* causation is unintelligible, whilst in the same breath one dogmatizes about *material* causation as if Hume, Kant, and Lotze had never been born.”

tion, nor did he dogmatize about the impossibility of psychic causation. He assumed the former as a postulate; and he gave not a dogmatic reason, but an empirical reason for declining to assume the latter. "Is there any evidence that these states of consciousness may, conversely, cause those molecular changes which give rise to muscular motion? *I see no such evidence.* The frog walks, hops, swims, and goes through his gymnastic performances quite as well without consciousness, and consequently without volition, as with it. . . ."¹⁹ This is obviously an incorrect statement of the facts, but it is not dogmatism. There is no hint here of an *impossibility* of psychic causation; all there is is a statement of an observer that he *finds no evidence* for such causation. We are at liberty to criticize the acuteness of his observation, not his "dogmatism." The excerebrated frog does *not* go through all his gymnastic performances quite so well "without his consciousness as with it." In fact, his consciousness is assumed to be absent because he is now brainless. If we say that he can get along without this assumed consciousness as well as with it, we should also say that he can get along as well without his brain as with it. This Huxley did not seem to have seen, and of course his reasoning here is very bad, and it is, I think, because of this fatal misstep that he failed, in this paper on animal automatism, to work out to its proper conclusion the theory which he had so brilliantly begun. Fortunately, however, he made amends five years later, but his critics have, whether through discretion or ignorance, neglected to mention and welcome his return from the error of his ways. Therefore I take the liberty of commending to their attention the tenth chapter of Huxley's little book on Hume, especially the first six pages of that chapter. There he says: "The only meaning of the law of causation, in the physical world, is, that it generalises universal experience of the order of that world; and if experience shows a similar order to obtain among states of consciousness, the law of causation will properly express that order. That such an order exists, however, is acknowledged by every sane man."²⁰ He proceeds a little later to quote with approval Hume's assertion: "Ambition, avarice, self-love, vanity, friendship, generosity, public spirit: these passions, mixed in various degrees, and distributed through society, have been, from the beginning of the world, and still are, the source of all the actions and enterprises which have ever been observed among mankind." After several rather long citations from Hume, Huxley asks: "But, if the necessary connexion of our acts with our ideas has always been acknowledged in practice, why the proclivity

¹⁹ *Op. cit.*, p. 240. Italics mine.

²⁰ "Hume" (New York edition, 1879), pp. 182-3.

of mankind to deny it in words?" He answers this question by again quoting from Hume, and the quotation is too long to reproduce here, but the gist of it is that the denial is due to a strong propensity to believe that causal connection means more than constant conjunction. "But, being once convinced that we know nothing of causation of any kind, than merely the *constant conjunction* of objects, and the consequent *inference* of the mind from one to another, and finding that these two circumstances are universally allowed to have place in voluntary actions, we may be more easily led to own the same necessity common to all causes."²¹ Still further on in this same chapter Huxley says: "If a man is found by the police busy with 'jemmy' and dark lantern at a jeweller's shop overnight, the magistrate before whom he is brought the next morning reasons *from those effects to their causes in the fellow's 'burglarious' ideas and volitions, with perfect confidence*, and punishes him accordingly. And it is quite clear that such a proceeding would be grossly unjust, if the links of the logical process were other than necessarily connected together."²² Huxley evidently shares this confidence with the magistrate, and goes so far as to say that the denial of this causal connection is as much a waste of time as would be the denial of a geometrical truth.

These quotations from Huxley and from Huxley's quotations from Hume show that Huxley did not abide by his denial of causality to psychic events in relation to subsequent bodily actions. It is quite true that he never took up the task of showing how this subsequent concession is reconcilable with his early position, and he gave evidence that in 1892 he had returned to his earlier position.²³

He never succeeded in reconciling a causal order which "is acknowledged by every sane man" with his epiphenomenalism. It has been the purpose of this paper to show that if epiphenomenalism is interpreted as the physical irrelevance of psychical phenomena, an irrelevance based on the purpose of physics to confine its attention to the merely physical, a reconciliation is feasible. Huxley himself furnished all the essential conceptions necessary to this reconciliation. He merely failed to see the logical relation to each other of these conceptions, and his failure was not due to a dogmatic preconception of the impossibility of thoroughly mutual causal relations between mind and body, but to inaccurate statement of empirical facts.

EVANDER BRADLEY MCGILVARY.

THE UNIVERSITY OF WISCONSIN.

²¹ "Hume."

²² "Hume," p. 190, italics mine.

²³ See his famous last foot-note in his definitive edition of the paper, *On the Physical Basis of Life* (op. cit., p. 163): "Or, to speak more accurately, the physical state of which volition is the expression."

THE CENTRAL TENDENCY OF JUDGMENT

SINCE the work of the early investigators of the time sense the concept of the "indifference point" (I.P.) has played an ever-present rôle in experiments on judgments of magnitude, duration, and intensity. Judgments of time, weight, force, brightness, extent of movement, length, area, size of angles, have all shown the same tendency to gravitate toward a mean magnitude, the result being that stimuli above that point in the objective scale were underestimated and stimuli below overestimated, while the mean magnitude itself was invested with no constant error. This region in the scale, flanked above and below by negative and positive constant errors, was called the indifference point, or more properly the region of indifference.

The tendency has been throughout to infer that the I.P. disclosed in any particular experiment was in some way an absolute quantity and should be found in other experiments on the same quality of stimulus. In this way arose the ideas of a "most favorable extent" (Kramer and Moskiewiez, Jaensch) and a "most favorable time" (Vierordt, Höring, Estel, etc.). Among the investigators of the time sense, since an I.P. was found for every group of intervals employed, grew up the doctrine of periodic I.P.'s, those for regions higher up in the scale being multiples of the I.P.'s found in the experiment in which the shortest intervals were used. Attempts were made to correlate the unit of periodicity with various bodily processes—the swing of the leg, breathing time, pulse beat (Wundt, Münsterberg). All of this speculation passed the criticism of laboratory workers and was incorporated in the general texts as a curious fact, productive of many illusions and constant errors, but the analysis was carried no farther.

In an earlier study¹ the writer undertook an experimental analysis of the phenomenon of the I.P. in judgments of the duration and extent of rectilinear arm movements. The results of this investigation showed conclusively that, with the method of reproduction, the following principles hold.

I. The I.P. is relative,—not absolute. It is a function of the series limits of the stimuli employed. Given the series of magnitudes with which we are to work, we may be quite certain that a region of indifference will occur at about the midpoint of that particular scale.

II. A periodic I.P. can be found within a total series (S) by working with its special sections (A, B and C).

¹"The Inaccuracy of Movement" (with special reference to constant errors), H. L. Hollingworth, *Columbia Contributions*, Vol. XVII., No. 3, June, 1909.

III. The same absolute magnitude may be either an I.P., or affected with a positive constant error, or with a negative constant error, according to the particular range or section in which it occurs.

IV. The gradual extension of the series limits is accompanied by a corresponding shift in the region of indifference.

V. No magnitude estimated out of relation to a series or group of which it is a member evinces any considerable constant error.

VI. The phenomenon of the I.P. disappears as the interval between separate judgments is extended. The first disposition is soon dissipated and is no longer adequate to affect the second performance.

VII. In a parallel tabulation of the I.P.'s and the ranges of intervals used in the various time-sense studies the influence of the latter on the magnitude of the I.P. is clearly seen.

VIII. The phenomenon of the I.P. and the so-called positive and negative time errors result from a general law—the *central tendency of judgment*. In all estimates of stimuli belonging to a given range or group we tend to form our judgments around the median value of the series—toward this mean each judgment is shifted by virtue of a mental set corresponding to the particular range in question. This *central tendency* is not a "law of sense memory." It is a law of immediate perception and disappears as the experiment becomes a memory test.

IX. In experiments by the method of reproduction this *central tendency* is reenforced by the law of motor habit.

For an account of the experiments on which these conclusions rest and for detailed exposition of their significance the reader must be referred to the earlier study.

THE PRESENT STUDY

Purpose.—On account of the reenforcing value of the law of motor habit the earlier experiments did not indicate how clearly or in how far the results secured were a function of the method of motor reproduction. In order to support the case completely it should be shown that the same law of judgment is present in experiments into which the method of reproduction does not enter. In order to put the generalization to such a test the following experiments have been made on judgments of the size of squares, by the method of recognition.

Observers.—The observers were all women students in Barnard College with from one and a half to two and a half years of training in psychology. Different observers were used in the two experiments and none of them knew the purpose of the experiment, nor were they familiar with the results of the earlier study.

Material.—The material used in both experiments A and B was the same, the chief differences between the experiments consisting in the way in which the series limits were varied. On a dark gray wall were placed 30 squares of light gray cardboard, ranging in size from 2.5 cm. on a side to 50 cm. and increasing from 2.5 to 7 cm. by increments of 0.5 cm., from 7 to 15 cm. by increments of 1 cm., from 15 to 40 cm. by increments of 2.5 cm., and on to 50 cm. by increments of 5 cm. Each card was numbered in consecutive order. Alongside these standard cards and at the same distance from the observer was an exposure apparatus, by means of which, at proper intervals, the fourteen test cards could be presented one at a time. These test cards varied in size from 3 cm. to 40 cm. on the side, ranging from 3 to 7 cm. by increments of 1 cm., from 7 to 15 cm. by increments of 2 cm., from 15 to 40 cm. by increments of 5 cm.

Procedure.—In each experiment a test card was exposed for 5 seconds. The observer then waited for 5 seconds, the eyes resting meanwhile on a dark screen. She then turned to the standard series and was allowed 5 seconds in which to select a card corresponding in size to the one just exposed and to write its number in her record. A second test card was then exposed, and so on throughout the experiment. By keeping a record of the order in which the test cards were shown, the experimenter was able subsequently to compare the observer's judgment with the actual magnitude. As a result of this method of selection all constant errors due to the law of motor habit in reproduction are eliminated and any error disclosed will be entirely an error of judgment of visual magnitude.

EXPERIMENT A

This experiment began with series 3, 4, 5, 6, 7, three trials for each magnitude, in chance order. The smallest card (3) was then dropped and the larger card (9) substituted, and three trials taken in chance order, for each member in the new series 4, 5, 6, 7, 9. In this way the successive series moved up along the total range, dropping at each change its lowest member and including the one next larger than its greatest member. The series, that is to say, always consisted of 5 test cards, and as the experiment progressed, magnitudes were dropped from the lower end and new ones added to the upper end. Ten observers were used, 150 trials being taken on each observer. Table I. gives the C.E. of the 10 observers in terms of the square root of the area—that is, in terms of the length of one side of the square. Each figure is the C.E. resulting from 30 judgments.

TABLE I

GIVES THE C.E. IN CM. OF EACH CARD IN EXPERIMENT A.
10 OBSERVERS, 1,500 TRIALS

	3	4	5	6	7	9	11	13	15	20	25	30	35	40
1	0	-.13	-.23	-.24	-.21									
2		+.15	+.52	+.53	-.01	+.44								
3			+.51	+.15	-.11	+.32	+.31							
4				+.19	+.39	+.55	+.21	-.02						
5					+.31	+.21	+.42	-.13	0					
6						+.74	+.75	+.64	+.56	+.48				
7							+.131	+.80	+.137	+.173	+.215			
8								+.139	+.160	+.184	+.143	+.192		
9									+.94	+.172	+.215	+.98	+.90	
10										+.240	+.265	+.150	+.45	+.178

EXPERIMENT B

This experiment began with the series 3, 4, 5, 6, 7, 9. Three trials for each magnitude were taken in chance order. The next higher magnitude (11) was then added to the series and again 3 trials for each magnitude (3-11) were taken in chance order. At this point the next magnitude (13) was introduced, 3 trials for each card taken, and the process continued until in the ninth series the whole range of test cards from 3 to 40 was included. Six observers were used, 270 records being taken from each observer. Table II. gives the C.E. of the 6 observers for each magnitude in each succeeding series. As in Table I. the errors are given in terms of one side of the square. Each figure in the table is the C.E. of 18 judgments of the same card.

TABLE II

GIVES THE C.E. OF EACH CARD IN EXPERIMENT B.
6 OBSERVERS, 1,620 TRIALS

	3	4	5	6	7	9	11	13	15	20	25	30	35	40
1	.03	.10	.08	.42	.25	.58								
2	.03	.17	.15	.45	.25	.65	.86							
3	.03	.26	.48	.60	.11	.80	.89	.60						
4	.03	.53	.73	.88	.45	.40	.53	.65	1.43					
5	.03	.65	.98	.83	1.05	.43	.36	.52	1.60	2.63				
6	.05	.65	1.05	.78	.85	.72	.43	-.25	1.62	2.05	2.40			
7	.03	.76	1.05	.90	.92	.93	.80	1.00	1.35	1.73	2.25	4.82		
8	.05	.87	1.12	.73	1.23	.70	.82	1.83	1.27	1.77	1.63	1.85	3.08	
9	.08	.68	1.08	.87	1.10	.75	.42	.92	1.52	1.57	1.43	.97	2.10	4.42

In each of these experiments we have another case of the gradual extension of series limits, and if the *law of central tendency* is operative, I.P.'s might be expected to occur in each series and gradually to rise in the range as the larger magnitudes are added. The A.E. and its variability are not given in the tables, since only

the C.E. is of interest for the problem in hand. As a matter of fact the phenomenon of the I.P. is concealed in both experiments by a strong positive constant error which comes from a general tendency to overestimation in judgments of square magnitudes. This tendency has been found by other investigators. Woodworth and Thorndike find a positive constant error in estimates of area by a mental standard. Baldwin, Shaw, and Warren find the same tendency in judgments of the size of squares and attribute it to a change in the memory image. This error, however, is irrelevant to the present problem. The important fact is that underneath this ever-present overestimation the *law of central tendency* is also operative, and its presence can be clearly shown by a proper analysis of the figures.

Casual examination of Table I. shows that the positive constant error for any one magnitude increases as the place of the magnitude in the series descends. Thus the — C.E. (— .21) for card 7 in series 1 changes to a decided + C.E. (+ .39, + .31) in series 4 and 5. The + C.E. (+ .31) of card 11 increases to + 1.31 in series 7, and the errors of the other cards undergo in a strikingly uniform way the same transformation. This is a clear indication that in any one series the magnitude is influenced by other magnitudes occurring above and below it and is in every case shifted toward the center of the series. Thus in series 1 card 7 is drawn toward the smaller magnitudes, and its judgment results in a — C.E. In series 5 the same card is drawn toward a higher set of magnitudes and hence acquires a decided + C.E.

The process is clearly shown by an examination of the 6 cards (7 to 20, inclusive) that occurred in all 10 series. Each of these cards occupied, in the course of the experiment, all 5 positions. Thus card II. is in series 3 the largest magnitude; in series 7 it is the lowest; in series 5 it is the central card; while in series 4 and 6 it occupies the intermediate positions on either side of the center. The same, in appropriate series, is true of all 6 cards, from 7 to 20 inclusive. Now if there were no source of error present except the *central tendency of judgment* each card should have theoretically no C.E. when it occurred in the middle of a series, *i. e.*, it should be the I.P. for that series. But, since there is another error present due to the general tendency to overestimation in judgments of square size, the theoretical conditions are not fulfilled, and each card, even when it occurs in the central position, shows an actual + C.E. We may assume, then, that the error shown in this central position is due to the character of the material, and that so far as the *law of central tendency* is concerned it may be considered 0, or what we might call the *normal error*. If the errors of any magnitude in the

successive series from 1-10 be calculated with respect to this *normal error*, the operation of the *law of central tendency* should lead to the following results. As the series progress the relative errors of any magnitude, that is, the deviations of the actual from the *normal errors*, should show an I.P. phenomenon—they should be negative above the normal, zero at the normal, and positive below it. The facts are shown in Table III., in which, for cards 7-20, the error of each card when it occurred in central position is assumed to be *normal*. It will be seen that above the normal the errors are, with a single exception, negative, while below they are, with only three exceptions, positive. The transformation is from a high — value through 0 to a high + value.

TABLE III

7	9	11	13	15	20
— .10	— .11	— .11	— .66	— 1.37	— 1.32
+ .10	— .23	— .21	— .77	— .81	— .11
0	0	0	0	0	0
+ .28	— .34	+ .33	+ .16	+ .23	— .12
+ .20	+ .19	+ .89	+ .75	+ .43	+ .68

Thus from any point of view in which the figures may be regarded the *central tendency of judgment* is revealed, working, however, underneath a general tendency to overestimation. This result is confirmed by the results of Experiment B, in which the lower magnitudes were allowed to remain in the series while the higher were being added. The results appear in Table II. Again there is present the positive constant error due to the character of the material, but underneath the *central tendency* is clearly to be seen.

The magnitudes here used fall into three groups. To the first group belong cards 3-9, present in all 9 series, and influenced in judgment by the gradual inclusion of the higher magnitudes 11-40. According to the aforesaid law the effect of these higher magnitudes should be to draw the lower cards toward a constantly augmenting center, that is, as the higher cards appear one by one, the central tendency of the respective series rises. The positive errors of cards 3-9 should thus become constantly greater as the experiment proceeds. Again the deductions are strikingly verified. Thus the error of card 4 increases from + .10 in series 1 to + .68 in series 9; that of 5 from + .08 in series 1 to + 1.08 in series 9, etc. This effect is due, in any one series, partly to the introduction of still higher magnitudes, partly to habituation to the larger cards already introduced and now being repeated.

The second group of magnitudes consists of cards 20 to 40 inclusive. When any one of these cards, say 20, is introduced, the

observer is already considerably adapted to the lower magnitudes, and as the next higher card (25) is introduced in the following series this adaptation to the lower cards is much furthered by the fact that each of the 9 cards below 20 is again repeated three times, while adaptation to magnitudes higher than 20 is only slightly begun by the threefold repetition of card 25. The consequence is that as the experiment proceeds habituation to the lower range increases much more rapidly, at first, than that to the upper range, on account of the greater number of lower cards. In this group, then, we should expect transformations just the reverse of those in group I., that is, the + C.E.'s should become constantly smaller as the high card is drawn more and more in judgment toward the center of the series. Again expectation is confirmed. The error of card 20 falls from + 2.63 in series 5 to +1.57 in series 9; that of card 25 from + 2.40 to + 1.43; that of card 30 from + 4.82 to + .97; and that of card 35 from + 3.08 to + 2.10.

There remain yet to be considered the three cards 11, 13, and 15, comprising group three. This group, standing as it does midway between groups one and two, which show directly opposite transformations, might be expected to show either of two results. First, the two tendencies might neutralize each other, the errors in group three remaining approximately constant or varying irregularly. Second, the first tendency might operate in the first few series, after which, by virtue of increasing habituation to the larger cards the second tendency might begin to assert itself in the later series. So far as the figures go they are sufficiently irregular to admit of either interpretation. There is neither uniform increase nor decrease throughout. There is, in fact, a strong suggestion of the second possible result—initial decrease followed by increase as habituation to higher magnitudes grows. Thus the errors of card 11 fall from + .86 in series 2 to + .36 in series 5, then increase to + .80 and + .82 in later series. Card 13 falls from + .60 in series 1 to - .25 in series 6, then increases to over + 1.00 in series 7-9. Card 15 falls to + 1.35 in series 7, increasing to + 1.50 in the last series.

TABLE IV

	3	4	5	6	7	9
1	-.01	-.42	-.67	-.30	-.44	-.08
2	-.01	-.35	-.60	-.27	-.44	-.01
3	-.01	-.26	-.27	-.12	-.58	+.14
4	-.01	+.01	-.02	+.16	-.24	-.26
5	-.01	+.13	+.23	+.11	+.36	-.23
6	+.01	+.13	+.30	+.06	+.16	+.06
7	-.01	+.24	+.30	+.18	+.23	+.27
8	+.01	+.35	+.37	+.01	+.59	+.04
9	+.04	+.16	+.33	+.15	+.41	+.09

One could scarcely ask for more convincing evidence of the *law of central tendency* than that afforded by the behavior of the C.E.'s in these three groups of magnitudes. The evidence may be re-enforced, however, and the process more clearly exhibited by further treatment of the errors in group I., consisting of cards which were present in all 9 series. In the case of this experiment we have no means of determining, as we did in experiment A, the normal error due to the character of the material. We may, however, observe the deviations of the errors in a given series from the average of the errors in the whole 9 series. These deviations should show, as did Table III. for experiment A, an indifference point phenomenon for the errors of any given magnitude in successive series. Such a calculation results in Table IV. As was to be expected, the I.P. phenomenon is clearly present. The successive deviations from the average, in the case of the errors for any given magnitude, pass from pronounced negative direction through an approximate zero point to a pronounced positive direction. This change was caused in every case by the inclusion of higher magnitudes in the series, thus producing an upward shift in the central tendency or median of the series, toward which each lower magnitude was assimilated in greater or less degree, according to the amount of habituation to the upper range.

It is not necessary to go further into the theoretical and interpretative consideration of *the law of central tendency*, since the writer has already discussed this elsewhere.² But it should be pointed out that none of the factors usually introduced to explain the occurrence of indifference points are adequate. Unexplained differences in time error (Fechner), mechanical sources of error in apparatus (Schumann), peculiarity of the sense organ (Vierordt), lack of current motor control (Delabarre), relative expenditure of energy (Wundt), change in the memory image (Wreschner, Leuba), fatigue and dynamogeny, all these may contribute their share toward the actual magnitude of a given error, but their influence can hardly be conceived as varying up and down a scale of objective magnitudes in such a way as to account for the shifting I.P. with extension of the series limits.

Nor is the phenomenon in any way the result of contrast. It is, on the contrary, just the reverse—a case of two magnitudes approximating each other in judgment by virtue of their temporal contiguity. The tendency seems explicable only in terms of itself. Just as our experience with a race, class, or social group results in the conception of a *type* which shall in some way represent the central tendency of the group, and from which the separate members shall deviate the

² "Inaccuracy of Movement," chapter III.

least, so in an experiment on sensible discrimination we become adapted to the median value of the series, tend to expect it, to assimilate all other values toward it, and to greater or less degree to substitute it for them. Either this tendency is the rudimentary process out of which the higher acts of conception grow, or it is the habit of conception extended to sensory fields and interfering with a quite elementary process of comparison and recognition. The importance of the law in any series of psychophysical measurements should be apparent. The error to which it leads is distinctly an error of judgment, and is quite independent of sensory or physiological conditions which may of themselves be sources of other types of errors.

H. L. HOLLINGWORTH.

COLUMBIA UNIVERSITY.

REVIEWS AND ABSTRACTS OF LITERATURE

The Individual and Reality. An essay touching the first principles of metaphysics. EDWARD DOUGLASS FAUCETT. New York, London, Bombay, Calcutta: Longmans, Green, & Co. 1909. Pp. xxiv + 449.

A work which is hailed by William James "as a great and powerful agency in the spreading of truth" naturally invites attention. The book—modestly called an "essay"—is one more indication, and a striking one, of the strong modern movement toward the fusion, or at least the working combination, of the antithetic streams of thought represented by the terms individuality and continuity. In his "Riddle," published in 1893, the author was a pronounced individualist, championing a thoroughgoing monadology; in the present work the individual, though by no means surrendered or explained away, is abundantly supplied with "doors and windows." It is described as a "center" in an essentially continuous universe; not *the* center, for the outlook is entirely pluralistic; but one of innumerable centers, all of which are open to the tides and pulsations of the cosmos. They are "emphases, foci of intense activity, traveling eddies, as it were, within a MOTHER-STUFF COESSENTIAL WITH OURSELVES." The author's system is thus at once dynamic and objectively idealistic. He calls it a "real-idealism" or an "idealistic dynamism." All existence is alive, differences being purely matters of extent and type of organization.

With his metaphysical interest Mr. Faucett combines a lively concern as to the ethical outlook. He finds no morality whatever in nature, which is fundamentally blindly impulsive and non-rational. Yet there are two fundamental characteristics of existence which render it increasingly amenable to the guidance of mind, and so susceptible of ends of value, or moral outcomes. These are a blind groping toward unimpeded and enlarged activity and a large measure of plasticity; and on the strength of them he holds to a "far-off divine event," toward which

through intelligent control the whole creation may be, and should be, made to move. Meliorism is the cause he maintains over against the false "perfection" of absolutism. In such a scheme the office of mind is evidently a capital one. Consciousness is described as a state of a part of a highly organized, or "major, center." It is that part of the center which, so to speak, shines "in its own light," the "light" being the heightening of function due in part to the center's superior organization, partly to the struggle which always goes on between centers that are in contact when their equilibrium is destroyed, as, for example, in the brain cells under nervous stimuli. This struggle involves mutual "invasions and penetrations." Sensation is the spoil of such an "invasion"; it is the sharing on the part of the "major center" in the subconscious experiences of a multitude of "minor centers" in the cortex, the nerves, etc. It is never complete; the appropriated activities are always partial and confused—the mere surface of the processes involved—so that perception is rather a "show" of reality than an accurate representation of it.

Quite objective as is the book in the main, in its epistemology the writer unfortunately construes his term "center" as though it were a circle, the circumference (*i. e.*, the limit) thereof being the salient feature for thought. Somehow all things are known to be mental facts, though how a characteristic shared by all alike could be distinguished is not suggested. It is laid down as the fundamental proposition, that "*appearances, as aspects of MY sentient experience, appear*"—an idealist assumption that presents us with the subject-matter of inquiry all neatly classified and labeled in *advance* of inquiry! It is matter for regret that the author did not keep to the logic of his chosen term "center," make the implied circumference coincide with the ever-expanding confines of the universe of knowledge, and show that the traditional epistemological firmament, which so generally shuts in the idealist, is really open sky, penetrable and penetrated in myriad ways by cosmic activities. It is to be regretted, also, that he did not give more space to the discussion of the evidence for immortality, instead of resting the case on the one principle of persistence of type. To this end some of his argument for palingenesis through a plurality of earthly lives might profitably have been spared. Yet in the main the reader will find much of just discrimination and apt characterization in these well-printed pages with their fresh literary style—for example, his description of the significance of God to the plain man, in the discussion of the "God-who-is-to-be"—much, too, that is suggestive and intellectually stimulating in the way of alert inquiry and up-to-date metaphysical speculation.

COLUMBIA UNIVERSITY.

WM. FORBES COOLEY.

L'Evolution, Doctrine de Liberté. F. LEENHARDT. Foyer Solidariste. Saint-Blaise et Roubaix. 1910. Pp. 155.

As the title suggests, this work purports to present the evidence for the conception of evolution as a doctrine of liberty as opposed to that

theory which designates it a doctrine of necessity and materialism. Building upon the results of science, it seeks to harmonize these with the facts of moral life. Part I. is concerned with the conception of evolution necessitated by the examination of the biological sciences. Part II. discusses the nature of ethical evolution, evolution in the moral life of man.

An historical study of the idea of evolution in embryology shows that the first conception of necessary development was modified upon a closer knowledge of the facts, so as to include a factor of initiation, a certain original activity. The realization of a plan in the development of the embryo is in part subordinated to the conditions in which the realization takes place. Embryonic development appears as a repetition, but as a repetition with accidents.

The consideration of the conception of evolution in phylogeny with the assistance paleontology shows the same necessity for positing an element of initiation. The development from a germ as a necessary process, as the realization of a plan must give way in the face of such phenomena as recoils and arrested developments and allow for elements of contingency. Religious tradition is in harmony with the conclusion that there exists a factor in the development of life which may be called liberty. Creatures not only develop organically from within outward, but become one of the factors of their own development.

In response to the objection to the idea of beings deprived of reason taking part in their own creation, the author resorts to a study of certain facts in comparative anatomy considered in their relation to physiology. The order followed in the formation of beings in the past presents a certain parallel to a hierarchy of observed functions. Inferior animals are in direct relation to their environment. The development of a nervous system and the formation of an organ which centralizes something of all the functions of the nervous system permits an activity which is not directly in response to the environment. The preponderance of the hemispheres in vertebrates is significant, since the hemispheres are the organs of activity which may be called spontaneous, that is, not provoked by the exterior environment, but is in response to interior solicitations; in a word, psychic. Paleontological life becomes significant when it is considered as the means to the formation of an organism containing the stored-up and transformed impressions of ages, an organism which is more highly developed, autoactive, an organism which reaches its climax in a being capable of reflective liberty.

Ethical evolution takes its point of departure with the advent of an animal conscious of himself, a personal animal. The dominant trend of this evolution is effort towards independence, towards the formation of an activity conscious of itself and absolutely master of itself, otherwise the moral nature of man. Ethical evolution is the characteristic of the development of humanity as psychical evolution was found to dominate the evolution of mammals. But the evidence tends to show that this evolution is not directed in a straight line, according to a preconceived end, but is marked with discordances and contingency. The powers that man

creates, such as intelligence, science, civilization which should be instruments for self-direction, can be applied to contrary ends. This deviation is seen to possess significance and value when it is viewed as a result of the power of choice in man. It is this liberty which is the source of the origin of the sentiment of responsibility, the characteristic tract of the development of humanity. The future of humanity is uncertain. It may proceed from an abnormal group in such conditions as were created by a man master of himself, Jesus; the contrary is also possible. But the end of terrestrial humanity arises from human liberty.

In conclusion we may say that the work does not appear to offer anything especially new in the way of a contribution. It leaves the problem of the relation of initiation with the mechanical conception untouched. This question may suggest itself as fundamentally involved in the whole investigation.

SAVILLA ALICE ELKUS.

MUNICH.

Théorie des Principes de L'Absolu. HENRY ROULLEAUX DUGAGE. Paris, Plon-Nourrit et C^{ie}. 1909. Pp. ix + 58.

This little book is remarkable for the naïve manner in which it handles complex problems and the easy assurance with which it effects the transitions of the argument apparently oblivious of traditional difficulties therein suggested.

It proposes to cast aside every philosophical system and upon the basis of a single certainty, by means of rigorous analysis alone, to deduce the principle of existence, the absolute. It is "an inquiry into the principle which reason must deduce from the first principle of consciousness, considered as the only basis of certitude, in order to conceive itself and the universe." The primary fact which reason necessitates is consciousness, self-consciousness (*Je suis*). Descartes's error consisted in admitting other original absolutes than this single subjective one. Part I. discusses the principle of knowledge, "*Je suis*."

Analysis shows that this fact of self-consciousness involves the existence of the universe. "I exist and with me all the universe." Part II. is concerned with the principle of being (That which I am). The notions of time, space, matter and cause, while objective in the sense that thought asserts them, are subjective. They are the points of support, the limits of existence, "which consciousness creates itself in order to conceive itself."

The argument then proceeds to the deduction of a universal consciousness. "To the universal object which each consciousness conceives corresponds the universality of these individual consciousnesses." The laws of nature are the same for all individuals. This fact requires the existence of a universal consciousness. The innumerable beings which compose the universe "are only the emanations of this unique thought." Individual consciousnesses are simply points of view of a single consciousness.

Part III. passes to the deduction of the principle of morality, "That which I am to others." Thought is not only conscious, it is energy and

will. These active individuals can only constitute a whole on condition that they are of the same essence. "The existence of the universe can only be conceived as if a law organized it and morality is at the same time the general principle and the practical rule of this organization." The common principle which is found to be the basis of the morality of all civilizations is that of the solidarity of individuals. "The consciousness of this unity of being is the basis of morality." Altruism is the source of human progress.

After a perusal of the book one is impressed with the idea that the ethical ideal sketched in the last chapter is the inspiring motive of the work. But however this ideal may appeal to our sympathies, it fails to commend itself as a logical deduction resulting from the analysis of a certainty.

SAVILLA ALICE ELKUS.

MUNICH.

Le sens de l'existence. L. STEIN. Translated by A. CHAZAUD DES GRANGES. Paris. 1909. Pp. xi + 534.

This is a presentation in lively and accurate French of the author's "Sinn des Daseins" which appeared in 1904 and which furnishes an excellent introduction to the later "Philosophische Stroemungen der Gegenwart" (1908). The book is a collection of essays presented in four groups as Metaphysics, Epistemology, Ethics, and Sociology. An excellent abstract of the original appeared in the *Revue de Métaphysique et de Morale*, May, 1905 (Suppl., p. 6).

Metaphysically, the world is a bundle of active forces which the law of causality governs, although it is not a mere mechanism. The energetic theory of matter is close to Ostwald and Mach.

Epistemologically, the ancient world tried to bring reality under the concept of immutable substance, the middle ages under the concept of attributes, the seventeenth century under that of modes, the present, of relations. Now the principle of identity rules consciousness and truth is seen to be the agreement of thought with itself.

Ethically, experience shows us the actual realizing of the better, and the duty of man consists in acting for this end.

Sociologically, we find progress depending on association. Society creates reason. "Plato and Aristotle could not have appeared amongst the Hottentots." But society is becoming less and less tyrannical. At first it ruled by fear, then by faith, now by intelligence. A social hierarchy is necessary and legitimate, but beside the "blue-blood" aristocracy has arisen an aristocracy of wealth, to which is being added an aristocracy of the "knights of labor."

The author's thought is selective rather than creative. Although clear and stimulating in style, the reader feels at times a strangeness in certain historical interpretations—does natural science owe so much to Schelling?—and the criticism of opposing theories are decidedly weak. As the French reviewer remarks—I paraphrase from memory—"is all

pessimism a 'philosophy of the sick,' and can not one fail to believe that the best thing for the world is a Prussian Hegemony that has carried on the labor legislation that figures in the program of Von Bülow without meriting the reproach of "neuropath"?

HAROLD CHAPMAN BROWN.

COLUMBIA UNIVERSITY.

Attention and Interest: A Study in Psychology and Education. FELIX ARNOLD. New York: The Macmillan Co. 1910. Pp. 272.

It is worthy of note that a definite attempt is being made to provide two types of books in psychology and education that are intended to increase the efficiency of the teaching of these subjects. One of these is the elementary text-book for beginners in various phases of the subjects; the other is the monograph on some special topic, designed to provide occasional collateral reading for beginning classes and a convenient handbook for students in advanced classes. This second type of book is represented in Dr. Arnold's "Attention and Interest: A Study in Psychology and Education." This book differs from a thesis in that the aim is not to present the results of a single investigator, but to collate and interpret all the significant results upon the given topic. Although the author has covered the entire fields of attention and interest in a general way, he has specifically aimed "to clarify and arrange the many facts that have been brought to light by numerous experiments in the psychological laboratories."

This book is divided into three parts, viz.: I., Attention; II., Interest; III., Education. The first part includes chapters on The Given Situation in Attention, The Objective Aspect of Attention, The Psychophysical Aspect of Attention, The Physiological Aspect of Attention. The second part discusses The Motor Aspect of Interest and The Ideal Aspect of Interest. The third part is devoted to Attention in the Class-room and Interest in the Class-room.

It seems to the reviewer that it would have been a gain to leave the last two chapters out of the present volume. The purely psychological chapters would have then formed a unity. The two pedagogical chapters occupy only about one ninth of the entire book. In their present contracted form, though very interesting and valuable, they do not show how they are related to the preceding portions of the book. Dr. Arnold is thoroughly qualified to offer us an entire volume on the educational aspects of attention and interest and it is hoped that he will do so in the near future.

This very useful and commendable volume is marred by some oversights in details of editing. Some words are misspelled and some are not spelled uniformly throughout the book. As illustration of this we note in the index "Pryer" for "Preyer." On page 27 "Titchener" is spelled "Tichener" in one place and in another it is spelled correctly. Seashore's initials should be "C. E." instead of "E. C." as given in the index. There seems to be no uniformity in writing the titles of books or magazines. For example, we find one of Titchener's works referred to in the

following ways: Page 27, "*El. Psych. of Feeling and Attention*"; page 27, a few lines remote, "Lectures on the Elementary Psychology of Feeling and Attention." On page 23 it is written as follows: "*Feel. and Attent.*" In some other places it is still different. As another illustration of the same lack of uniformity we note on page 40 in one place "*Psych. Arbeiten.*" and in another "*Psych. Arb.*"

FREDERICK E. BOLTON.

STATE UNIVERSITY OF IOWA.

JOURNALS AND NEW BOOKS

INTERNATIONAL JOURNAL OF ETHICS. April, 1910. *The Reality of the Temporal* (pp. 257-271): J. ROYCE. - The reality of time is the reality of life and action. This reality is not given as a fact of immediate experience, but must be appreciated in an act of will. The time order as a whole is not real at any one temporal instant, but only as a time-inclusive totality or eternally. In its wholeness it constitutes the eternal. *The Ethics of Plato* (pp. 271-281): R. G. BURY. - A brief discussion of the preliminary dialogues, the developed theory of virtue, the good for man, and the personal ideal as exemplified in Socrates. *Ethical Problems of Prison Science* (pp. 281-295): C. R. HENDERSON. - A statement of the chief problems of the science with special reference to the meeting of the International Prison Congress to be held in Washington in October, 1910. *The Appeal to Nature in Morals and Politics* (pp. 295-313): W. J. ROBERTS. - A plea for the exact use of the Stoic conception of a law of nature and a criticism of some historic misuses of the term. *The Sociological Basis of Ethics* (pp. 314-329): C. A. ELWOOD. - Conduct, being activity of social importance, must be based upon social knowledge; a science of the right or wrong of conduct must be based upon sociological knowledge. *Post-Kantian Idealism and the Question of Moral Responsibility* (pp. 329-340): J. W. SCOTT. - The ultimate source of all actions is the whole; but that system constituting function which is our intelligent activity is the whole. We are, therefore, the original doers of our actions and ultimately free. *A Study of the Popular Attitude towards Retributive Punishment* (pp. 341-357): F. C. SHARP and M. C. OTTO. - A study of the moral attitudes of one hundred students in the short course in agriculture at the University of Wisconsin. Ninety-two approved, under one condition or another, of the infliction of suffering or loss upon the wrongdoer merely for the sake of producing suffering. *Book Reviews*: Ralph Barton Perry, *The Moral Economy*: J. W. TUFTS. Paul Gaultier, *L'Idéal Moderne*: C. W. SUPER. Gustav Spiller, *Moral Education in Eighteen Countries*: M. L. EASTWOOD. William James, *A Pluralistic Universe*: F. W. HUBBACK. Hugo Münsterberg, *The Eternal Values*: J. A. LEIGHTON. Chas. E. Garman, *Letters, Lectures, and Addresses*: R. B. C. JOHNSON. M. A. Mügge, *Friedrich Nietzsche*: S. WATERLOW. J. A. Hobson, *The Industrial System*: W. J. ROBERTS. William Clarke, *A Collection of His Writings*: GEORGE UNWIN. Edwin A. Bumball, *Jesus and Modern Religion*: NATHANIEL SCHMIDT.

REVUE DE PHILOSOPHIE. February, 1910. *Des droits en concours dans l'œuvre de l'éducation* (pp. 113-132): H. TANDIERE. - The State should engage in the education of the child only in so far as it assists, in its task of education, the family which alone can properly accomplish this task; and in so far as it approves the moral teachings of the church. *Un réaliste peut-il être pragmatiste?* (pp. 133-155): R. JEANNIERE. - A thorough and complete representation of Professor Montague's articles of the same title as they appeared in Vol. VI. of this JOURNAL. *Le réalisme Kantien d'après M. Aloïs Riehl* (pp. 156-167): PIERRE CHARLES. - Riehl, in his *Geschichte der philosophische Kritizismus* shows the insufficiency of the psychological and idealistic interpretations of Kant and insists that as a matter of fact the Kantian philosophy involves the absolute reality of the thing-in-itself. *L'atome nécessaire (fin)* (pp. 168-182): A. VÉRONNET. - Thermodynamics by no means renders useless the idea of atoms and molecules, but on the contrary gives it a wider application in the explanation of physical transformations. By means of thermodynamics, moreover, we may expect to become as well acquainted with liquid and crystalline molecules as at present in chemistry with gaseous molecules. *Étude sur les théories de la connaissance. II. L'associationnisme* (pp. 183-193): PAUL CHARLES. - The associationism of J. S. Mill and Herbert Spencer, presented in the first portion of the article may be criticized as follows: (1) It vainly attempts to explain by means of the mental constitution of the observer the necessity and universality of natural laws; (2) the advocates of the doctrine can not cite a single actual case in which association is transformed into belief by virtue of mere repetition. *Analyses et comptes rendus*: W. James, *A Pluralistic Universe*. J. F. Schmidt, *Zur Wiedergeburt des Idealismus*: P. CHARLES. L. Nelson, *Über das sogenannte Erkenntnis-problem*: P. CHARLES. Ch. Lalo, *Les sentiments esthétiques*: L. LÉDA. Sainte Thérèse, *Œuvres*. A. Croiset, *Les Démocraties antiques*: T. DE VISAN. H. A. Prichard, *Kant's Theory of Knowledge*: E. BARON. J. B. d'Aurevilly, *J. de Maistre, Blanc de Saint-Bonnet, Lacordaire, Gratry, Caro*: F. PILLON. *L'Année philosophique. Notes bibliographiques. Recension des Revues.*

Coit, Stanton. *Woman in Church and State*. Ethical Message Series, No. 1. London: West London Ethical Society. 1910. Pp. 70. 6d.

Kelynack, T. N. Ed. *Medical Examination of Schools and Scholars*. London: P. S. King & Son. 1910. Pp. xvi + 434. 10s. 6d.

Winstedt, E. O. Ed. *The Christian Topography of Cosmos Indicopleustes*. Cambridge: University Press. 1909. Pp. x + 376 + xiv plates. 12s. 6d.

NOTES AND NEWS

DR. JOSEPH A. LEIGHTON, professor of philosophy and chaplain at Hobart College, has been elected to the chair of philosophy at the Ohio State University, vacant by the retirement from active service of Professor W. H. Scott.

THE JOURNAL OF PHILOSOPHY

PSYCHOLOGY AND SCIENTIFIC METHODS

SOME IMPLICATIONS OF ANTI-INTELLECTUALISM

THE sea-change that unconsciously comes over philosophic terms is well illustrated in the shift of meaning that the term "intellectualism" is even now undergoing. In its traditional sense, the word is used to denote the antithesis to the sensational theory of knowledge, viz., the theory that *intellectus ipse* furnishes the indispensable conditions or ingredients of knowledge. At present it is frequently used to contrast with voluntarism. It denotes what appears to its opponents to be a false estimate of the place of knowledge in experience; and an exaggeration of the value, in *philosophy*, of strictly logical criteria and methods. From this point of view, sensationalism itself is a form of intellectualism, in so far as it starts with sensations as cognitive units, and treats appreciation and effort as derivatives of such terms, or as accretions of them.

It is easy, however, to overstate the extent to which this shift of meaning has been accomplished. A flavor of the earlier controversy still hangs about the current polemic against intellectualism. Often it is not apparent whether anti-intellectualism is urged as a protest against the false placing of the knowledge point of view (irrespective of how knowledge is constituted), or as a protest against emphasizing rational considerations in knowledge at the expense of the empirical. This ambiguity is the more natural because the two manners of anti-intellectualism have much in common and readily run together. Nevertheless, confusion is likely to result from failure to discriminate the two types; accordingly I introduce my discussion with an accentuation of their contrast.

One form of intellectualism may remain at the knowledge point of view as ultimate. It may hold that knowledge is the true access to existence, and that "things *are* what they are *known* to be." But it upholds the superior claims of non-rational, non-logical factors in constituting the web of things known. It especially antagonizes the claim to supremacy in knowledge of rationalizing functions, of conceptions, of abstract and general principles, laying the stress upon

the particulars, the uniques, the givens, which resist reduction to thought. Since the rationalist is led by the undeniable presence of such irrational surds in *our* knowledge to the ideal of a higher reality which is the content of valid (*i. e.*, rational) knowing, this anti-intellectualism also contends against the doctrine of another (noumenal and absolute) reality behind the world of things concretely known.

With the spirit of this polemic, the other sort of anti-intellectualist is in full sympathy. But he introduces two differences of emphasis. In the first place, he may attach considerably more value to logical functions in constituting knowledge than does his fellow-in-arms. He may hold that knowledge is what it distinctively is precisely by the operation of factors of mediation, that is, of abstraction, generalization and logical relationship. He may hold that concepts render things more intelligible, not less so; even that they are the *only* means of rendering things *intelligible*. But, in the second place, he will hold that rendering things intelligible is a special and peculiar function, having its own special origin and aim; and in making it his business to find out what is the specific character of knowledge he finds that "making things intelligible" is, in origin and in effect, a function operated in the interests of behavior. Accordingly, what he objects to in the intellectualist is not so much the latter's emphasis upon logical factors in knowledge, as his isolation of the knowledge standpoint (in procedure and criteria), from its functional place and rôle—an isolation which is equivalent, of course, to making knowledge an ultimate and all-inclusive philosophic criterion.

If we call both types of anti-intellectualism by the name of pragmatism, certain significant differences present themselves in pragmatic theory. The form of pragmatism which remains at the standpoint of knowledge (insisting upon the presence of non-rational factors in the knowledge structure) is akin historically to British nominalism and sensationalism—save that it breaks loose from the isolated and atomic character assigned by British empiricism to "sensations," assimilating the latter rather to the continuity and flow of vital feeling. In its insistence upon testing conceptions by consequences, it holds that the important thing is that the consequences shall be particular (*i. e.*, concretely experienceable) rather than that they shall be active.

The other type of pragmatic anti-intellectualism starts from acts, functions, as primary data, functions both biological and social in character; from organic responses, adjustments. It treats the knowledge standpoint, in all its patterns, structures, and purposes, as evolving out of, and operating in the interests of, the guidance and enrichment of these primary functions. The vice of intellectualism

from this standpoint is not in making of logical relations and functions in and for knowledge, but in a false abstraction of knowledge (and the logical) from its working context. It may be proper to add that instrumental pragmatism (or the doctrine of what Mr. James has called the "Chicago School") is distinctively of this last type. Bearing this fact in mind might perhaps clarify some of the obscurities found in this branch of pragmatism.

These things being premised, I want to say a few words, by way of *obiter dicta*, upon the implications of this latter type of anti-intellectualism. In the first place, as to its bearings upon the proper way of conceiving philosophy. Philosophy is itself a mode of knowing, and of knowing wherein reflective thinking is much in play. It is hence self-contradictory for an instrumental pragmatism to set up claims to supplying a metaphysics or ontology. As a mode of knowledge, it arises, like any intellectual undertaking, out of certain typical perplexities and conflicts of behavior, and its purpose is to help straighten these out. Philosophy may indeed render things more intelligible or give greater insight into existence; but these considerations are subject to the final criterion of what it means to acquire insight and to make things intelligible, *i. e.*, namely, service of *special* purposes in behavior, and limit by the *special* problems in which the need of insight arises. This is not to say that instrumentalism is merely a methodology or an epistemology preliminary to more ultimate philosophic or metaphysical inquiries, for it involves the doctrine that the origin, structure, and purpose of knowing are such as to render nugatory any wholesale inquiries into the nature of Being.

This conclusion leads to my next remark. Wherever the intellectualistic bias in philosophy operates there is inevitably an attempt to discriminate between what is real being and what is not, between reality and appearance, between objective existence and the subjective—which somehow exists and yet has no true existence. From the instrumental standpoint this extraordinary performance (so extraordinary that it is usually taken as the defining mark of philosophy) is easily explicable. It is the business of any knowledge event to discriminate, *in a given specific situation of perplexity and consequent indeterminate response*, between what is genuine and what is counterfeit, the veridical and the illusory, what is and what merely seems, what is valid or objective and what is invalid or "subjective." If we have regard for the proper setting and limitations of the knowledge event, it is obvious that these distinctions are wholly relevant and relative to *making an inference or drawing a conclusion*, which in turn is a condition of projecting, auspiciously, further behavior. If we are committed to the intellectualistic fallacy, we forget these limitations of context and purpose; we take this type of discrimina-

tion wholesale and transfer its terms to being or existence in general. Since plainly no common form and no scientific form of knowledge indulges in such preposterous extension beyond the control of a specific situation, "philosophy" comes to be a uniquely mysterious discipline. The universe at large being divided into the real and the unreal, the objective and the subjective, being and appearance, absolute and phenomenal, gives rise inevitably to all sorts of problems as to how these antithetical things get on together; there being none of the specific tests that condition common-sense knowing and science, these inquiries may proceed indefinitely.

Another problem which gets placed in a very different light when the intellectualistic fallacy is avoided is that which Perry has recently named in these pages as the *ego-centric predicament*.¹ From the intellectualistic point of view, the self that is implicated in every knowledge event has to be conceived as a term of the knowledge relation; the intellectual function being final and inclusive, there is no other way of disposing of it. Hence the self, the ego, the subject, is at once identified with "mind" or "consciousness" (or whatever), and the latter is treated as one of the two correlative constituents of knowledge, the object known being the other. Then the whole brood of "epistemological" problems swarms. Sticking to the facts of empirical situations, the ego, subject, self is seen, however, to be simply the agent that undertakes and is responsible for the cognitive event. The relation in question is that of an agent to its act, not that of one of the two terms of knowledge to the other term. Difficulties may be attached to the proper conceiving of the relations of agent and act; but at all events they are specific, concrete difficulties of the same sort that manifest themselves in the consideration of any function of any living organism. They do not concern a relation constitutive of a special discipline, called epistemology, a relation found nowhere outside of the epistemology that deals with it. In other words, the wholesale "ego-centric predicament" disappears, and for it is substituted the concrete question of how an act in the way of knowing is related to other types of action.

I am quite aware of the dogmatic and seemingly arbitrary sound of these utterances. Their purpose, however, is not to prove anything, but simply to outline, with some emphasis, the implications of a certain type of anti-intellectualism. There is nothing specially novel in the anti-intellectualism that accepts the stock problems of the intellectualist philosopher, and then attempts to solve them by calling in the assistance of non-intellectual factors, such as feeling, immediate intuition, faith or volition; this is a standing device of the whole history of philosophy. There is something more promising in

¹ This JOURNAL, Vol. VII., p. 5.

an attempt which, accepting the complete right and autonomy of knowing and of logic in its own field, tries to see what this field of knowledge and reflective intelligence is and means as a specific type of behavior in a more inclusive scheme of behavior.

JOHN DEWEY.

COLUMBIA UNIVERSITY.

ON SECULAR COOLING AS AN ILLUSTRATION OF THE METHODS OF APPLIED MATHEMATICS

FRIENDS and critics to whom I have shown my article on "The Methods of Applied Mathematics"¹ have usually made remarks to the effect that the most interesting part of the essay would be its application. It is one thing for the philosopher to abstract and classify the methods of the various specialist sciences, and quite another for him to show that this process is of definite practical use, by giving examples of the manner in which the scientific specialist makes grave and serious errors through ignoring the rightful methods of his science. This essay is an attempt to accomplish the latter purpose.

Amongst the examples of the misapplication of the methods of applied mathematics, none is more interesting or more cogent than that concerning the secular cooling of the earth. Owing to recent discoveries in radioactivity, the discussion has become, in some respects, of purely academic interest. But many of the old fallacies are still extant, and, to act as a check on future errors of the same kind, it will serve a useful purpose to examine the fallacy from the foundation and to show in what manner it arises from the misapplication of mathematical method.

The basis of this well-known method of Lord Kelvin² may be briefly described as an attempt, from observations of the increase in temperature as we penetrate into the crust of the earth, to calculate the time that had elapsed since the consistentior status, or, in other words, since a permanent solid exterior first formed on the surface of the earth.

The present essay is not concerned with the calculation, but with the premises on which it is based. It is intended to show, not only that this speculation has been proved invalid by recent discoveries, but that, if the necessary limitation of mathematical methods had been clearly understood, it would never have been put forward.

¹ This JOURNAL, September 30, 1909.

² See *Trans. Royal Soc. Edinburgh*, Vol. 23, republished in "Mathematical and Physical Papers," Vol. 3, to which paging references are made.

The basis of the calculation is an equation of Fourier, which was designed as a solution of the hypothetical problem of "the rate of variation of temperature at any point, in a solid extending to infinity in all directions, on the supposition that at an initial epoch the temperature has had two constant values on two sides of an infinite plane."³

I do not think that the essential conditions for the earth, in the vast unknown time since the consistentior status, to approximate to this ideal, have ever been clearly and explicitly stated. Some of them will appear at first sight to be truisms and some have been overlooked as a matter of habit, because, in the vast majority of the operations of mathematical physics, they are of the obvious kind that can be tacitly assumed.

The following statement of these implications makes no pretense to be exhaustive; but it will indicate that, in such a case as the present problem, much is liable to be assumed without sufficient and adequate examination. In order that Fourier's equation should be applicable to the concrete case of the real earth during geologic time, this real earth must satisfy, amongst others, the following conditions: (1) The spherical rotating body must for practical purposes correspond with this infinite plane. (2) This same earth must have constant conductivity and specific heat both in time and place. (3) The earth must be mathematically solid. There must be an absence of convective action both in time and place. (4) The temperature of the surface and of the heated interior at a given distance from the surface must be constant for both time and place. (5) The variations in temperature gradient must depend on conductivity and specific heat only, and the process of averaging the varying temperature gradients must be valid. (6) There must be no source of heat other than that originally contained in this solid of known temperature and known specific heat.

It is highly probable that, in any ordinary instance where conductivity formulæ would be used, these assumptions would be valid. In the ideal case of the cooling, within reasonable limits of time, of a large suddenly extruded mass of lava, no reasonable objection could be raised on any of these grounds. But, in the case of the earth cooling through geologic eras, we shall find that no single one of them is entirely satisfied, and that some occasional errors are so great as to invalidate the calculation. I have no competence (and if I had it would be outside the scope of this paper) to examine the necessary modifications dependent upon each of the sources of error; but ordinary application of common-sense reasoning will show

³ *Ib.*, p. 301.

that, with some of them, a small variation from mathematical exactitude will, if acting for a sufficient time, make great differences in the result. To show this we will examine our six necessary conditions separately.

1. The question of the earth as a sphere is too mathematical for treatment here. This particular difference from ideal conditions does not appear to affect the argument if the others are satisfied; but Professor Perry has shown that, if we assume a higher conductivity for the earth's interior, the spherical nature of the earth must be taken into account.⁴ This source of uncertainty, however, is small compared with those that follow.

2. The criterion of constant conductivity is unproven and it is difficult to see how proof can be obtained. On so speculative a question, no definite conclusion seems possible, and the only methods of attacking such a problem would seem to be found in general arguments based on probability. I doubt if it is possible to state all the conditions that might conceivably affect the heat conductivity in the interior of the earth. There are so many unknown factors. But we can reasonably be sure that it will be affected by at least the following three: change of chemical constitution, rise of temperature, enormous increase of pressure. Let us examine the effect of each of these factors.

It is superfluous to remark that we have no direct knowledge of the earth's interior, or that we can only speculate. But, in any speculation of this kind, we are entitled to take as our starting-point the ascertained fact of the high density of the earth (circ. 5.2) which is about double the estimated density of the crust.

This higher density may conceivably be due to one of two causes, either change in chemical constitutions, or a great change in volume due to the superincumbent pressure. Of these possibilities the former would appear to be the more probable. There are good theoretical reasons for thinking that there is a limit to the compressibility of any substance, however great the pressure may be. If this change in density be, in the main, due to change of composition, it follows that the substances in the interior of the earth must be metallic.⁵ There are no known non-metallic substances of a density greater than 5. The presence of any considerable proportion of metal would enormously increase the conductivity.

Change of pressure *per se* would undoubtedly increase the con-

⁴ *Nature*, Vol. 51, p. 225.

⁵ As a speculation, not essential to the argument, it is allowable to surmise that there may be a considerable proportion of iron, for three reasons: (1) on account of its large proportion in the earth's crust compared with other metals, (2) on account of the existence of terrestrial magnetism (this is perhaps the weakest argument), (3) by analogy with meteorites.

ductivity, and, if the greater density of the interior were due to difference of pressure, this increase would be very great. This statement will need small emphasis. In the absence of chemical or intramolecular change, it is obvious that more compact packing of the molecules will facilitate the passage of heat. Plain evidence of this action is shown in the increase of electric conductivities of metals with fall of temperature. With the comparatively small contraction of volume, we find an increase of electric conductivity very much greater than the contraction in volume. The variations in this true electric conductivity⁶ are always accompanied by corresponding, though not necessarily proportionate, variations in heat conductivity. Indeed, I do not think any competent chemist or physicist will be inclined to dispute the conclusion that pressure and consequent decrease in volume will probably have the effect described.

The effect of increase in temperature is doubtful. The conductivity of metals decreases with rise of temperature, but the change is small compared with their much greater intrinsic conductivity. The evidence with regard to the ordinary rocks is not conclusive. Lord Kelvin⁷ thought that their conductivity would decrease with rise of temperature. Professor Perry⁸ is inclined to form the opposite conclusion. In all probability the problem will merge itself into the larger one of the state of matter at abnormal temperatures and pressures. Such a difference between competent specialists is a cogent illustration of the uncertainty of the data on which the method is based.

These three sources of difference, so far as present knowledge will carry us, would affect the conductivity of the interior of the earth in the following way:

<i>Cause</i>	<i>Effect (on conductivity)</i>
Change in chemical composition with a greater metallic content.	Great increase.
Increased pressure.	Increase (or with great compression considerable increase).
Increased temperature.	If metallic decrease, but small in proportion to intrinsic conductivity. If non-metallic, doubtful.

The balance of this hypothetical evidence, therefore, clearly inclines to an increase of conductivity of an unknown amount. To hypothetical evidence we can add the positive evidence that, accord-

⁶ This argument, needless to say, refers to true electric, not to electrolytic, conductivity.

⁷ *Nature*, Vol. 51, p. 439.

⁸ *Ib.*, p. 583.

ing to Professor Schuster, the electric conductivity must be considerably greater inside the earth.⁹ Thus the conclusion seems highly probable that the heat conductivity of the interior of the earth is considerably greater than that of the crust.

It will throw an interesting light on the present line of reasoning to note the effect of this probable conclusion on Lord Kelvin's estimate of geologic time. Professor Perry¹⁰ has shown that the estimate would thereby be multiplied by a factor "two to six times the ratio of this internal conductivity to the conductivity of the skin." This interesting result is a striking instance of the manner in which, by the use of complicated mathematical formulæ, errors in the data produce a more than proportionate error in the result.

3. The problem of the solidity or fluidity of the earth's interior is generally supposed to have been solved by observations on the behavior of the earth in its reactions to tidal forces. On this subject Lord Kelvin¹¹ expresses the conclusion that "On the whole we may fairly conclude that, whilst there is some evidence of a total yielding of the earth's mass, that yielding is certainly small, and the effective rigidity is at least as great as that of steel." Elsewhere he says that this rigidity is certainly more than "a continuous globe of glass of the same diameter and probably than one of steel."¹² Sir George Darwin¹³ is of the same opinion and thinks it probable that "the earth is solid at least far down to its center." Against this conclusion can be brought the simple observed fact of the extrusion of lava.

In the face of these observations, it will at first sight appear absurd to maintain the possibility of convective action in a body probably as rigid as steel. But, for the purposes of geologic time, these facts prove very little. It is only necessary to inquire exactly what we mean by liquid convection and how much of this will render a conductivity formula useless, to see that these observations are by no means as conclusive as they seem.

When we have proved that the earth is effectively rigid in its reaction to tidal forces and in its behavior with regard to the transmission of earthquake shocks, it may yet be effectively fluid or viscous with regard to long-continued forces acting for vast eras of time. It must be borne in mind that, in speculating on the condition of matter in the interior of the earth, we are treating of conditions which lie beyond the range of present-day science. Of these condi-

⁹ *Phil. Trans.*, Series A, 1889, p. 512.

¹⁰ *Ib.*, p. 225.

¹¹ "Mathematical and Physical Papers," Vol. 3, p. 329.

¹² *Ib.*, p. 237.

¹³ "The Tides," pp. 232-237.

tions we know little, but we can infer with a fair degree of certainty the existence of a very high temperature and of a colossal gravitational pressure. It is evident that it is an inadmissible extrapolation to dogmatize with regard to the possible reactions of matter under conditions so far removed from those of which we have experience.

Interesting and valuable as these researches on the tides may be, they in no way negative the idea that there may be slow convective action throughout the whole interior mass of the earth. Let us imagine such an action as slow as a foot a year. This, in the course of 20 million years, would carry a mass of material from the center of the earth to the circumference. Indeed, convection to the extent of a foot per century would probably entirely vitiate such a calculation as the one we are now considering. Any such action, even as slow as this, would connote a continual circulation of the mass, and, for the purposes of geologic time, would be equivalent to a great increase of conductivity at depths where the heat begins to approach that of the interior.

To any suggestion that this argument is hypothetical, I would at once admit that, were I attempting to found complex mathematical calculations on these suppositions, such speculations would be inadmissible; but the suggestions are no more speculative than the inference that, because the earth is rigid in its reactions to tidal forces, therefore no such reactions exist. The indefinite grading of the properties of solids and liquids here suggested is indicated by more than one branch of chemical fact and theory.

The fallacy of ignoring the possibility of liquid convection in the interior of the earth is a cogent example of the manner in which factors, commonly negligible, become important when we attack a problem of an entirely different order. Because, in studying the cooling of a cannon-ball, we can ignore any minute liquid convection that may exist, it is assumed that this may still be ignored when we study the cooling earth. But the conditions are entirely different. The small intrinsic conductivity of rock and the enormous mass of the earth making cooling so slow, has reduced the conductivity effect to an infinitesimal. But, when that is done, we must also take account of other factors which, because they also are infinitesimals, may commonly be ignored. In studying the cooling cannon-ball we can also ignore the effect of gravitation; but, in the cooling sun, gravitational friction will supply heat for many millions of years.

The former paragraphs refer only to variation of conductivity and convective action in space. There still remains the question of such variation in time. Even if we admit the improbability of such convective actions now (and there is no reason for such an admission) that assumption by no means precludes their possibility in the

remote past. If this is so, our present temperature gradient would have reference, not to the consistentior status, but to the time when such convective actions ceased, which, for all we know, might have been many millions of years after the original cooling of the earth's crust.

The specific heat of the earth is another problematic factor, but one which is probably of trivial importance.

5. The sources of errors in connection with the determination of temperature gradients are considerable and raise some theoretical questions concerning the conditions under which the taking of an average is permissible. Without attempting to enter very thoroughly into these, it will be generally admitted that this process is inadmissible when the variations are large and when their causes are known. In Lord Kelvin's original papers and, so far as I have been able to ascertain, in any subsequent papers, there is no serious attempt to deal with this problem. There is in one passage a suggestion that some particular variations may be due to the residual heat of an eruption,¹⁴ but, as we shall see later, this, if true, would invalidate the calculation of an average. We now know that at any rate a part of these variations is due to differences in the radioactive content of the rocks, but this question I propose to defer for the present.

Apart from the newly discovered effect of radioactivity, there are at least two known possible reasons for the enormous variations in gradients (from $\frac{1}{15}^{\circ}$ F. per foot to $\frac{1}{100}^{\circ}$ F. per foot) : differences in conductivities of rocks and other means by which heat may escape, and the residual heat due to the eruptions of former times. It is evident that, while it would be allowable to take an average of variations due to the first cause, it would be entirely inadmissible with regard to the second, as all such variations of temperature gradient would be positive. So far as the variations were due to that cause, the correct data for a mathematical calculation would be not the average, but the lowest gradient that could be found.¹⁵

The magnitude of variations due to volcanic action past and present has never been estimated, nor—now the problem is complicated by radioactivity—does there appear to be much chance of our so doing; but the uncertainty suggests a number of speculative questions to which some answer must be obtained before it would be possible to admit the validity of the usual deductions from temperature gradients. That the necessary data are unproved may be

¹⁴ "Mathematical and Physical Papers," Vol. 2, pp. 176-177.

¹⁵ Recent borings, made with due regard to some possible sources of error show a tem. grad. of 1 in 77. This correction alone would more than double Lord Kelvin's estimate (Chamberlain and Salisbury, "Geology," Vol. I., p. 543. N. B. $(77/55)^2 = 2.4$ nearly).

shown by the following queries, which raise a few of the unsolved geologic problems that have some bearing on this question: Is there a single locality on the surface of the earth where, if we go deep enough, we should find no traces of igneous rocks formed since the consistentior status?¹⁶ What is the range in place and time, of the effect on the temperature gradient of the existence of a group of volcanoes? (Observations from southern Italy might throw light on this problem.) In what ways and to what extent may temperature gradients be modified by igneous action that does not reach the surface? In what way, if at all, will continuous erosion and sedimentation modify any conclusions that may be drawn? The effects of this extend many miles deep in the earth's crust—as a rule, deeper than our observations of temperature gradients. As the possibility of slow interior convection vitiates the assumption of a mathematically solid earth, so the fact of such convective action in the crust may vitiate the assumption that the gradients that have been observed may be averaged.

Indeed, in this case, immediately we apply a single mathematical formula to such a vast expanse of time, we see that some of our original assumptions must be reconsidered. Let us imagine ourselves on a time machine which would cover a hundred thousand years in what to our senses was a day, and we shall see that our fixed and steady earth, cooling as if it were a rigid globe of glass or steel, is a figment of the imagination. In the place of this still fixed solid earth we should see a globe, the center of plutonic energies. Its surface would rock beneath our feet like the billows of the sea, literally mountains high, and as it rocked, the solid land would pour into the ocean in one mighty flood. There would be vast eruptions from innumerable centers forming lava covering great areas which would once more be plunged beneath the surface of the ocean. Is it possible for all these changes to take place and yet leave the heated interior mass so unaffected that we can calculate how long it has taken to cool on the assumption that it was fixed and steady? Where is the original rock that first cooled in the remote past? Where are we to look for our data if we wish to make our calculation?

To sum up our analysis of this particular method, so far as possible, apart from recent discoveries in radioactivity, it will be seen that the premises are subject to a large number of uncertainties. Assumptions have been made on matters about which we have very imperfect knowledge, and our present inquiry has disclosed the existence of a large number of variable and doubtful factors which

¹⁶ Recent investigations have shown that the great granitoid series, found in the Archean complex, are not the original crust of the earth, but are mainly intrusive in the surrounding metamorphic schists.

make this method entirely inadmissible for the calculation of a maximum limit to geologic time. Assuming the non-existence of any other source of heat, the utmost maximum that could be obtained from the known facts would be referred not to the temperature gradient, but the plain fact that volcanic action is still going on, and that consequently a considerable fraction of the original heat is still existent in the earth's interior. On this basis, if we accept Lord Kelvin's estimate¹⁷ that such original heat is equal to twenty thousand million times the amount dissipated each year, our only calculable maximum would be something less than this enormous lapse of time. We must subtract something from this maximum to allow for more rapid radiation in past eras, and for the fact of observation that the interior of the earth is still hot. How much should be deducted on these counts is an academic question that I shall not attempt to solve. Whether this is a probable or even a possible maximum is also a question that does not arise at this point. But, apart altogether from the discovery of radioactivity, the temperature argument appears to be so faulty that this is the only allowable maximum result deducible from the study of the secular cooling of the earth.

With the introduction of more recently discovered factors, even this residual validity vanishes. The two known sources of internal heat discovered since the publication of Lord Kelvin's papers are internal tidal friction and radioactivity. Sir George Darwin has shown that the heat equivalent of the loss of rotational energy of the earth, owing to tidal friction, if the earth had originally a day of 5 hours 40 minutes, would be equivalent to a secular loss for 3,560 millions of years.¹⁸ He gives a number of mathematical calculations to show that the greater part of this heat would be formed in the central parts of the earth,¹⁹ and so he comes to the conclusion that this would not appreciably affect the temperature gradient near the surface.²⁰ But this conclusion, like so much other mathematical reasoning, implies an entire absence of interior convective action both now and in the remote geologic past. If we reject this implication, this tidal heat thereby becomes a factor of which we must take account in our study of secular cooling.

Careful investigation of the radioactive content of the igneous and sedimentary rocks has shown that, if similar action occurred in the interior, the heat evolution from this source alone would be many times greater than the amount lost by secular cooling. Into this matter we need not now enter. The discovery of radioactive heating

¹⁷ "Popular Lectures and Addresses," Vol. 2, p. 6.

¹⁸ *Philosophical Transactions*, Series A, 1879, p. 592.

¹⁹ *Ib.*, p. 593.

²⁰ *Ib.*, also pp. 564-566.

is one that no scientist of the past century could be expected to have anticipated. It is, however, a very cogent example of the shallowness of this kind of mathematical speculation that it was so ready to assume that there existed in the universe no sources of energy other than those with which we were acquainted.

Let us now show the theoretical reference of this more practical analysis. In my paper on the "Methods of Applied Mathematics" I summed up the most probable sources of error in the fitting of conceptual mathematics to perceptual science in the following four propositions: (1) the validity of mathematico-physical formulæ is dependent on the range and theoretical certainty of the physical or other principles involved in the premises; (2) it is also dependent on the completeness with which the conditions relevant to any particular problem have been abstracted from reality; (3) both these sources of error are increased with the complexity of the formulæ and with the magnitude of the substituted terms; (4) in cases of extensive extrapolation, such formulæ are liable to give not only minor errors, but results which bear no recognizable relation to concrete reality.

Applying these tests to secular cooling, we find: (1) that, although the full discussion of the theoretical foundation of Fourier's formula is too detailed a mathematical question for the present essay, it contains physical assumptions not of the order of axioms; (2) in its application to geologic time, the abstraction is entirely inadequate, some known, and probably many unknown, material factors have been omitted; (3) the formula is complex, small errors in the data make considerable errors in the result, and the extrapolation enormously exceeds the ordinary limits of space and time; (4) it is therefore highly probable, from these theoretical considerations, that the conclusions bear no recognizable relation to concrete reality.

Let us note the special interest of these conclusions. On the one hand, we have an exposition of the principles of applied mathematics which contains truths so clear that the philosophical critic is inclined to dismiss them with the remark that they are true but obvious. On the other hand, we have a theory which, during the past half century, has filled countless pages in books and scientific articles, molded the course of scientific and geological speculation, effected theories of evolution and of heredity, and entailed enormous labor on the part of mathematicians, scientists and writers (to say nothing of students, readers and mechanical workers). To all this, given the clear understanding of a few simple mathematical principles, it is possible to make the single exhaustive comment: one erasure will suffice. What more cogent example could be desired of

the need of a thorough investigation of the theoretical principles of scientific method? We require less mechanical experiment, less mechanical mathematical calculation, more thought, more philosophy.

With the detailed working out of one example, it is hardly needful to give further examples of the misapplication of mathematical method. The tidal-retardation fallacy is another example more obvious than the last, so clear indeed that to apply these principles in detail is almost pedantic. This example, however, is of special interest in that recent discoveries in radioactivity do not affect the argument. This case it is unnecessary to discuss further, because the mathematicians have already discovered their errors by empirical methods. To elaborate other instances would be superfluous. I can, indeed, best conclude this essay, as I concluded my exposition of main principles, by saying that all acquainted with the multitudinous applications of mathematical reasoning to the complexity of the universe around us can, for themselves, find many other examples.

H. S. SHELTON.

ASHFORD, MIDDLESEX, ENGLAND.

DISCUSSION

IF THE BLIND LEAD THE BLIND

A COMMENT ON "LOGICAL FORM" IN PROFESSOR PERRY'S "REALISTIC PROGRAM"¹

WHEN will philosophy tire of that Fata Morgana, mathematical method? It is little short of tragic if realism, bearing, as it does, balm for so many ills to which the philosophic flesh is heir, theory of relations, the theory of 'logical constants' or indefinables, the theory of infinity and continuity, and the theory of classes and principal contribution which modern logic is prepared to make to philosophy concerns the form of exact knowledge," and also: "The should be led astray. But I am apprehensive when told that "The systems, concern everything fundamental in philosophy. No philosopher can ignore these and like theories without playing the part of an amateur. . . . For philosophy deals with the same topics as modern logic, but treats *popularly and confusedly* what modern logic treats with the *painstaking thoroughness and exactness* of the expert"² [italics mine].

Before these statements become incorporated in a realistic platform, I should like to present the three following theses, with the proviso that it is not as a subordinate philosophic discipline, as a

¹ This JOURNAL, Vol. VII., No. 14, July 7, 1910.

² *Loc. cit.*, p. 374.

branch of logic, that the investigation in question is invalidated, but only as a discipline peculiarly suited to contribute to the solution of the philosophic problem:

1. The unclearness of mathematical logic and the lack of agreement in its usages make all efforts to transfer its concepts to philosophy impracticable.

2. Even if these concepts were clearly defined, their specific relation to the logic of mathematics would make the transfer of them a neglect of "the division of the question."³

3. Even if these concepts were clearly defined and transferable, the type of method set by mathematics is suitable only for the critical recasting of philosophic systems and not for a developing philosophy such as modern realism.

I

To one who has followed the literature of the subject there is no need of recalling the unclearnesses of the concept in question. M. Lucas de Peslôüan has exhibited them with considerable detail in a series of articles reviewed in this JOURNAL,⁴ and prior to 1907 they have furnished MM. Poincaré and Couturat an ever-fresh bone of contention in the pages of the *Revue de Métaphysique et de Morale*—until the latter became too deeply absorbed in the problem of international language to carry on the debate. However, there may be those to whom a few examples will not be amiss:

Logical constants—"Logical constants are all notions definable in terms of the following: . . ." (Russell, "Principles of Mathematics," p. 3).

"Thus pure mathematics must contain no indefinables except logical constants" (*idem*, p. 8).

"The particular notions which appear in the propositions of symbolic logic, and all others definable in terms of these notions, are the logical constants. The number of undefinable logical constants is not great" (*idem*, p. 11).

Logical constants are then definable, undefinable, some definable and some undefinable. And why not both and neither? Incidentally, "A constant is to be something absolutely definite, concerning which there is no ambiguity whatever" (p. 6). It is interesting to collate different passages concerning the specific logical constants.

Infinity—This term has unambiguous definitions in two distinct

³ "Exact knowledge must be precisely limited in its application. A disposition in philosophy to employ terms in an unlimited sense, and to make unlimited assertions, is doubtless the principle reason why philosophy at the present time possesses no common body of theory."—Perry, *loc. cit.*, p. 375.

⁴ Vol. V., pp. 21-25; Vol. VI., pp. 610-612.

usages, as ordinal and as cardinal infinity. But starting from these definitions, mathematicians have attained a wealth of paradoxes concerning the transfinite before which Bolzano's *Paradoxien*⁵ pale like Halley's comet before the sunrise. M. Poincaré⁶ has claimed that they are rooted in the assumption that an infinite collection exists, and I also have tried to make manifest the ambiguity involved in the so-called "existence proof."⁷

Class—Here is a central difficulty. Peano⁸ merely calls a class any collection of objects. Russell⁹ says a class is "all the terms satisfying some propositional function." But Jourdain,¹⁰ because of the discovery (!) of nonentities that make null classes look like real classes, puts the question whether every propositional function really does determine a class, and Russell himself¹¹ in a frantic attempt to get rid of certain paradoxes, proposes (1) a zigzag theory of classes, *i. e.*, some propositional functions define classes and some do not, although apparently you can't tell which is which until you try—and then you are likely to be wrong, (2) a theory of the Limitation of Size, *i. e.*, a class is not a class if it gets too big, and (3) a No-class Theory, *i. e.*, there aren't any such things, anyway. Now,¹² he is proposing a theory of logic based on a theory of types, but Poincaré says¹³ that this attempt is very unclear in its distinctions of the finite and transfinite.

This section could be continued *ad infinitum*.

II

The limitation which their specific purpose imposes on these concepts makes them unsuited to philosophy.

Consider such a simple notion as that of equality. Whitehead¹⁴ says: "When two groups of symbols are connected by this sign ($=$), it is to be understood that one group may be substituted for the other whenever either occurs in the calculus *under conditions for which the assertion of equivalence holds good*" (italics mine), *i. e.*, when you can. This is not on every occasion. For example, let

$$f(x, y) = 0,$$

⁵ B. Bolzano, "Paradoxien des Unendlichen," Berlin, 1889.

⁶ *Rev. d. Mét. et d. Mor.*, 1906.

⁷ This JOURNAL, Vol. 5, 1908, pp. 628-634.

⁸ Notations, "Form. d. Math.," t. I., p. 4, 1904.

⁹ *Op. cit.*, p. 19.

¹⁰ "De Infinito in Mathematica," *Red. d. Mat.*, t. VIII., 1906.

¹¹ Reviewed here, 1906, pp. 388-390.

¹² *Am. Journ. of Math.*, Vol. XXX., 1908.

¹³ *Rev. d. Mét. et d. Mor.*, 1909, pp. 451-482.

¹⁴ "Universal Algebra," p. 5.

then

$$\frac{dy}{dx} = - \frac{\frac{\delta f(x, y)}{\delta x}}{\frac{\delta f(x, y)}{\delta y}},$$

but it is not possible to write $-\frac{\delta o/\delta x}{\delta o/\delta y}$. And this notion is too narrow to be transferred to other mathematical systems.

The mathematical linear continuum is a defined collection of entities such that if they are correlated with possible cuts in a straight line, there will be one-one correspondance, *i. e.*, there will be no entity to which one and only one possible cut does not correspond, and no cut to which one and only one entity does not correspond. For some purposes, then, the mathematical linear continuum is a substitute for the line, and we say the line is, in so far forth, a linear continuum. But no linear continuum, merely taken as such, ever has direction. Direction is a rather significant characteristic of lines. It may be doubted if the mathematical notion of the continuum has the value in philosophy of Aristotle's simpler notion of parts having a common boundary within a whole. There has been one great attempt to take over the mathematical concept of infinity into philosophy—Professor Royce's absolute idealism. Readers of that philosophy can judge of its success. It is certainly an advantage to free oneself of the notion that the infinite is *per se* contradictory, if one ever had that notion, but the gain in drawing a parallel between "the structure of the number series and the bare skeleton of the ideal self"¹⁵ is not so evident. Philosophers have not been brought to perfect agreement even as to the advisability of asserting that "the Absolute is a Kette."¹⁶ There is certainly a suspicion possible that this mathematical concept, defined in a specific sense, is not significant, even if correctly taken over into philosophy.

III

Mathematical method, as such, is suited only for a critique of a developed system.

Dr. Karl Schmidt in an interesting paper in this JOURNAL¹⁷ has presented the thesis that the most important thing for present-day philosophy to do is to "make up its mind" concerning certain philosophic issues, *i. e.*, get definite "generating problems" and develop them into a philosophy. When developed the same able thinker has

¹⁵ "World and the Individual," Vol. I., p. 527.

¹⁶ *Idem*, p. 546.

¹⁷ 1909, pp. 673-685.

proposed a Critique of Cognition that may be applied to them.¹⁸ This critique has been developed from the study of scientific method but not taken over from it. With this procedure the present writer is in entire sympathy. Therefore, if there is to be a realistic platform, the agreement should be primarily one of fundamental opinions. The method of the development is insignificant compared with the attainment of results, and as Dr. Schmidt has so clearly seen, the logico-mathematical form is suited to criticism only, not to development.

Suppose it were made the method of development. Let us assume that realists are agreed on a complete set of postulates. Their task is then to deduce the consequences of these postulates, manipulating them according to the laws of the system of formal logic agreed upon. The result would be worse than the worst type of scholasticism. Either ethical, political, sociological, and religious views are independent of philosophy—and in that case what significance can philosophy claim?—or else the realists would all say the same things about these issues. What a dull place the world would be if every one were converted to the cause! Each man's life would be playing his part in realizing the deduced consequences of realistic postulates. Common points of view, tendencies, are healthy; but mathematical agreement of opinions is disease.

And the sole method of philosophy would be dialectic, although dialectic has never convinced anybody. It has silenced many. Professor Royce founds his system on irrefutable dialectic—on propositions the very denial of which reaffirms them. But Professor Spaulding¹⁹ refutes him. It would be an interesting exercise in dialectic to refute Professor Spaulding in turn. It is probably possible, as no dialectic argument in the history of philosophy has ever won uniform assent from those to whom it was addressed, and they have not always been dull.

The above comment suggests the sad conclusion that philosophers must do the work of philosophy. No other science is going to do it for them. However complex or however simple concepts may be, their form must be studied in relation to the facts they are intended to interpret. The great merit of Kant is that he made up his mind as to his "generating problem" and adapted his method to its solution. The solution has difficulties, but it is great. We reject it, not because it is bad philosophy, but because his "generating problems" are not ours. If our civilization resembled more closely that of Kant's country and day it would be a different story.

¹⁸ *Idem*, pp. 281-287.

¹⁹ *Phil. Rev.*, Vol. XIX., No. 3, 1910, pp. 276-301.

And perhaps the unclearness of philosophy that so troubles the realists is not due to the fact that we have not absorbed mathematical logic, or any other science, but arises because we have allowed sciences, cuckoo like, to lay their eggs in our nest and have unresistingly brooded upon them until the hatchings startled us from our lethargy. By all means we should aim at clearness, precision, and all the other virtues—we have, all of us, too few of them. And we need to know as much about the achievements of science as is possible. But the conceptual synthesizing which must interpret this knowledge and make it into philosophy—for no mere heap of knowledge is philosophy—is the work of the philosopher and his concepts must be adapted to its specific needs. It is time to seek philosophic problems and philosophic methods for the philosopher.

HAROLD CHAPMAN BROWN.

COLUMBIA UNIVERSITY.

REVIEWS AND ABSTRACTS OF LITERATURE

Esthetic as Science of Expression and General Linguistic. BENEDETTO CROCE. Translated by DOUGLAS AINSLIE. London: Macmillan & Company. 1909. Pp. xxxi + 403.

Mr. Ainslie has translated the whole of the theoretical part of Croce's "Estetica" and has presented in English an abbreviation of the historical part. An appendix contains a translation of an address on "Pure Intuition and the Lyrical Character of Art," delivered by Signor Croce at Heidelberg at the Second General Session of the Third International Congress of Philosophy. This lecture includes a brief presentation of Croce's theory and might well be read before the larger work. The translator's introduction to the "Æsthetic" is a glorification of Croce and all his works. He is hailed as "one of the very few great teachers of humanity." His "Logic" and his "Philosophy of the Practical," which, with the "Esthetic," make up his "Philosophy of the Spirit," are praised in the highest terms. He is the "Columbus" of esthetics. Signor Croce is known to English readers as a critic of the first rank and as the author of a work on esthetics which has attracted much attention, but few were prepared to hear him praised in such extravagant language.

For the most part the translation is very close to the original, in fact it is almost literal. There are, however, occasional departures which modify somewhat the meaning of the author, as, for example (p. 18), where the expression "indifferente alle discriminazione posteriori ed empiriche della realtà ed irrealtà" by "indifferent to discriminations, posterior and empirical, to reality and to unreality."

On the other hand, faithfulness to the original can hardly justify a sentence which begins, "It is from human psychology, that is, literary psychology, that comes the other objection, to the effect," etc. And it is

difficult to see what is to be gained by using constantly such an expression as "*posing*" a problem, or such a term as "*equivoque*." The reader is very frequently put to unnecessary labor in his attempts to reach the author's thought. The style of the original is also open to criticism. The terminology is somewhat Germanized. The translator exonerates the author from the charge of Hegelianism on the ground that he has gone beyond Hegel. Croce's esthetics is not Hegelian, but his thinking contains much that comes from Hegel and Kant. It is occasionally necessary to overcome some slight irritation at the author's uncompromisingly authoritative tone in the statement of his own views and in the criticism of the views of others. These various obstacles should not, however, deter the reader from the examination of a book which has aroused more interest than any other recent work on esthetics.

Since the time of Kant the investigation of esthetic problems has usually led more or less directly to the discussion of certain mental states. The beautiful and the sublime have been defined with reference to the feelings which they arouse. The beautiful, for example, has been defined as pleasure objectified, etc. Signore Croce carries subjectivism in esthetics to a point far beyond any which it has previously attained. Others have resolved beauty into something wholly within the mind; Croce goes farther and makes *the whole of art* entirely an affair of the inner world. Art is identified with the "esthetic vision"; it is "entirely internal." What we ordinarily call art is for him merely the *externalization* of art.

The work in which this doctrine is presented is very broadly conceived. It touches many of the departments of human activity and contains, indeed, a summary sketch "of the entire philosophy of the spirit in its fundamental moments." All human activity is either *practical* or *theoretical*, the practical having to do with the will, the theoretical having to do with knowledge. Practical activity is either *economic* or *moral*. Knowledge is either *intuitive* or *logical*. "The spirit is conceived as consisting of four moments or grades, disposed in such a way that the theoretical activity is to the practical as is the first theoretical grade to the second theoretical, and the first practical grade to the second practical. The four moments imply one another regressively by their concretion. The concept can not be without expression" (*intuition*), "the useful without the one and the other, and morality without the three preceding grades." Intuition is thus made fundamental; it is independent of logical knowledge. Concepts may sometimes be present in intuition, but they are present not as concepts, but as simple elements of intuition. Moral maxims in the mouth of a character in a tragedy are present not as concepts, but as characteristics of the speaker. An intuition is a complete synthesis. Concepts and associations *as such* are not present in intuition. When they are present at all they are welded into a single whole of intuition. Pure intuition has no reference to reality or non-reality. "Intuition is the undifferentiated unity of the perception of the real and of the simple image of the possible." "All intuition is expression," expression in some kind of material, verbal, pictorial, musical, or what not. The proof which the author gives of this identification (pp. 13-14) is neither

convincing nor necessary. As a matter of fact, his statement is a definition and not a conclusion. Expression means not expression to another, not external manifestation, but internal expression, presentation to one's own mind, simply intuition.

As we have already seen, art is identified with the "esthetic vision," and this proves to be nothing other than expression or intuition. All intuition is then art or esthetic intuition. What we ordinarily include in the latter differs from the rest only in quantity or extensity; it is exactly the same in kind. The various steps from bare impression to the external manifestations which are ordinarily called works of art is stated as follows:

"The complete process of esthetic production can be symbolized in four steps, which are: (a) impressions; (b) expression or spiritual esthetic synthesis; (c) hedonistic accompaniment, or pleasure of the beautiful (esthetic pleasure); (d) translation of the esthetic fact into physical phenomena (sounds, tones, movements, combinations of lines and colors, etc.). Any one can see that the capital point, the only one that is properly speaking esthetic and truly real, is in that (b) which is lacking to the mere manifestation or naturalistic construction, metaphorically also called expression."

The esthetic fact is form and nothing but form. It is form as distinguished from content, from matter, when "matter is understood as emotivity not esthetically elaborated, that is to say, impressions, and form, elaboration, intellectual activity and expression."

"Art is the expression of impressions" not of ideas (nor even of emotions, for emotions themselves would have form, and would, we conclude, be themselves art). Impression is apparently to be taken in the Kantian sense. Unity is an essential characteristic of the work of art.

"Another corollary of the conception of expression as activity is the *indivisibility* of the work of art. Every expression is a unique expression. Activity is a fusion of the impressions in an organic whole. A desire to express this has always prompted the affirmation that the work of art should have *unity*, or, what amounts to the same thing, *unity and variety*. Expression is a synthesis of the various, multiple, in the one."

From the identification of art with "spiritual esthetic synthesis" and from the further statement that there are no subordinate kinds of esthetic syntheses, it follows that the ordinary divisions and classifications of art have nothing to do with esthetics proper. They have to do only with the externalization of art.

Beauty is defined as "*successful expression*, or better, as *expression* and nothing more, because expression, when it is not successful, is not expression. Consequently, the ugly is unsuccessful expression. . . . In works of art that are failures, the beautiful is present as unity and the ugly as multiplicity."

Such concepts as the sublime, comic, ludicrous, and so on are regarded as pseudo-esthetic. "The facts, classified as well as possible in the above-quoted psychological concepts, bear no relation to the artistic fact, beyond the generic one, that all of them, in so far as they designate the material

of life, can be represented by art; and the other accidental relation, that esthetic facts also may sometimes enter into the processes described, as in the impression of the sublime that the work of a Titanic artist such as Dante or Shakespeare may produce. . . ."

What is ordinarily called beautiful or physically beautiful is simply the stimulant of esthetic reproduction. This statement applies to what we usually call works of art as well as to natural objects.

These in brief are the main elements in Croce's own doctrine. His work is valuable, however, not simply for the theory which it presents, but for the many suggestive views which the author puts forward on most of the subjects related to esthetics. His criticisms of other esthetic doctrines are very outspoken and usually adverse, nevertheless they are stimulating and valuable. In the historical part of his treatise, Croce presents in brief a review of all the historical contributions to esthetics. According to his own statement a historian always adds something to the facts; he is never absolutely impartial. What Croce himself adds (or omits) is determined partly by his own doctrine and partly by his admiration for Vico and a few other Italian contributors.

The main question with regard to Croce's esthetic doctrine seems to the reviewer to be this: Is the identification of art with a purely subjective state the most effective means for organizing the facts which fall within the field which is generally recognized as belonging to esthetics? Can the question of the meaning and significance of what Croce calls the "externalizations" of art, can the problems connected with the production of art and the nature of the artistic genius, can the questions occasioned by every consideration of the esthetic experience, be handled any more successfully on this theory than on any other that has been presented? To the present writer the great value of Croce's work seems to lie in its freshness and in its many stimulating suggestions, not in the novelty which it has nor in the conclusiveness which it has not.

ADAM LEROY JONES.

COLUMBIA UNIVERSITY.

Old Criticism and New Pragmatism. J. M. O'SULLIVAN. Dublin and Waterford: M. H. Gill & Son, Ltd.; London, New York, Bombay, and Calcutta: Longmans, Green, and Co. 1909.

One closes this book with the sense of having enjoyed with the writer a period of fruitful reflection leading to a riper realization of the meaning of familiar things, yet with a feeling of regret that a work of such fine quality of thought and scholarship should be on the whole so fragmentary in result. The work consists of four essays, two on "Old Criticism," which form its main body, and two on "New Pragmatism," which are brief in compass and rather supplementary in character. So that, while the "and" of the title stands for a certain degree of unity, the addition which it marks renders the unity rather unimportant.

The first essay is the author's doctoral thesis entitled, "A Comparison of the Methods of Kant and Hegel, Illustrated by their Treatment of the Category of Quantity." This occupies two thirds of the book and is a

valuable contribution. Its point of departure, reached after a careful comparison of the standpoints, first of Kant and Hume, then of Kant and Hegel, is Kant's treatment of the categories. This most obscure portion of the "Critique of Pure Reason" is subjected to a patient and searching, yet not unsympathetic, criticism, with reference mainly to the category of quantity, for the purpose of laying bare the actual disconnectedness of Kant's treatment of the categories, along with his sense of their relationship, as shown by many suggestions which were afterwards developed by Hegel. According to the author, disconnectedness between the elements is everywhere characteristic of the system of Kant. Pure reason is itself a rather forced abstraction. Then the logic and the esthetic are left in mutual isolation. When we come to the categories we find that all are supposed to arise from the synthetic unity of apperception; yet in point of fact they are derived in a rather haphazard way from the current forms of judgment. Hence, "the 'metaphysical deduction' was foredoomed to failure, since it reverses the natural order of things." It is in the "transcendental deduction" that we begin to appreciate their systematic relations. From this point he undertakes an exhaustive analysis of the category of quantity, to show that even in Kant there is not only a certain order among the categories, but a certain development, *e. g.*, from unity, through plurality to totality, corresponding, respectively, to Hegel's (1) attraction, continuity or unity, (2) repulsion, discontinuity or amount, (3) limit or number. All of these are interrelated forms of the synthesis of the homogeneous in the given of sense; and thus forms alike of intuition and of thought.

What is to explain Kant's failure to develop the systematic character of the categories? The author gives two reasons: First, because Kant was interested, from beginning to end, in the application of the categories to experience—with the problem of the possibility of synthetic judgments *a priori*; while Hegel was interested in the logical development of the ideas for themselves. Secondly, because of Kant's profound respect for the laws of physical science. For him the forms of science were, after Newton, once for all fixed, while for Hegel they were steps in a still uncompleted critical process.

The second essay is on Kant's Treatment of Causation. Kant's purpose here is "to provide a firm basis for natural science, and at the same time to show the impossibility of freedom as an empirical factor and the futility of the attempt to prove the existence of God by means of the cosmological argument." But Kant adopts a "streak" view of causation, *i. e.*, the cause of an isolated event *b* is sought in another isolated event *a*. This, however, is a very rough-and-ready way of treating the matter. Really, the totality of phenomena at any moment is the cause of the totality of the next moment. And this is presupposed in Kant's proof of the causal axiom. But statements about the world as a totality in fact assume that the world is a thing in itself. Kant is then in an awkward dilemma: he must reject either the principle of causation or else the fundamental idea of his dialectic as a whole. Or, he must either renounce his phenomenalism or else his hope of proving the validity of necessary

synthetic *a priori* judgments. Or again, he must either adopt a streak view of causation or presuppose an "ideally perfect experience" as given. With his failure to prove the absolutely necessary character of the laws of nature, his attack on freedom must also be rejected. And in any case his proof of the causal axiom leaves the inner experience untouched.

The titles of the last two essays are "Pragmatism as an Epistemological Method in its Relation to Criticism" and "General Comment on Criticism and Pragmatism." They are well written, and thoughtful as far as they go, but rather lacking in substance. The author's suggestion that criticism is responsible for pragmatism is not made nearly so strong as it might be. He makes one point, however, which is well worth noting, namely, that a pragmatic epistemology may be adopted in conjunction with almost any brand of metaphysics.

WARNER FITE.

UNIVERSITY OF INDIANA.

JOURNALS AND NEW BOOKS

REVUE DE PHILOSOPHIE. March, 1910. *Amour spirituel et synthèse aperceptive* (pp. 225-240): P. ROUSSELOT. — *Amour* (desire or appetite in general) plays a double rôle in the intellectual processes: (1) in the form of the desire for God and for the complete self it is the motive power, the dynamic, active element, of the intelligence; (2) in the form of the desire for the God who is truth, a desire which causes us to see our good in every truth, it effects in us the synthesis of apperception. *La défense de la vie* (pp. 241-261): DR. GRASSET. — A description of the physiological processes of defence against the attacks of extraneous matter and a plea for a similar concerted defence against the enemies of the social life. *L'Absolu. Étude historique* (pp. 262-281): C. HUIT. — An inquiry into the place of the concept of the absolute in the philosophies of Israel, India, Egypt and pre-Socratic Greece. *Chronique pédagogique* (pp. 282-293): G. JEANJEAN. — Short critical reviews of Cramanssel's *Le premier éveil intellectuel de l'enfant*; Dugas's *Le problème de l'Éducation*; A. Binet's *Les Idées modernes sur les enfants*; Foerster's *L'école et le caractère*; Ferrière's *Projet d'école nouvelle*; Gerini's *Gli scrittori Pedagogici Italiani del secolo decimonono*; Vowinckel's *Pädagogische Deutungen*; and of the latest volumes of *Archives de psychologie*, *Zeitschrift für Experimentelle Pädagogik*, *Zeitschrift für Kinderforschung*, and *Eos*. *Étude sur les théories de la connaissance*. III. *Le Kantisme* (pp. 294-305): P. CHARLES. — The Critique of Pure Reason, summarized in the first portion of the article, may be criticized on the grounds, (1) that the concept of space is acquired through the exercise of the senses—hence is *à posteriori*; (2) that the categories may be explained without resort to innate forms *à priori*; (3) that these subjective forms applied to the world of experience lead inevitably to scepticism. *Analyses et comptes rendus*. L. Prat, *Contes pour les métaphysiciens*: G. BRUNEL. A. Bros, *La survivance de l'âme chez les peuples non-civilisés*. A. Leclère, *Pragmatisme*,

modernisme, protestantisme: F. CHOVET. F. le Dantec, *La crise du transformisme*: J. MARATAIN. G. Kertz, *Die Religionsphilosophie Joh. Heinr. Tieftrunk*. K. Krienelke, *J. H. Lomberts philosophie der Mathematik*: H. OLLION. L. Garriguet, *La valeur sociale de l'Évangile*. K. Oesterreich, *Kant und die metaphysik*: H. LÉARD. *Notes bibliographiques. Recension des Revues et Chronique*.

REVUE DE PHILOSOPHIE. April, 1910. *La vertu et le juste milieu* (pp. 337-346): P. D'HÉRONVILLE. — The Aristotelian conception of virtue as a mean is essentially derived from Plato's theory of the harmonious life, and is the forerunner of the scholastic and christian doctrines. It describes virtue in a common-sense way as habitual action in accordance with reason. *L'Absolu. Étude historique* (2^e Article) (pp. 347-376): C. HUIT. — An inquiry into the concept of the absolute in the Socratic and subsequent Greek philosophies, in the scholastic systems, and in continental philosophies up to and including that of Leibniz. *Revue critique de cosmologie. Théories et hypothèses scientifiques* (pp. 377-392): J. M. DARIO. — Recent studies in cosmology, such as A. Rey's *La théorie de la physique chez les physiciens contemporains*, P. Duhem's *La théorie physique, son objet, sa structure*, and Poincaré's *La Science et l'hypothèse* and *La valeur de la Science* point to the following conclusions: (1) none of the physical sciences is purely experimental; each involves logical processes; (2) hypothesis plays an essential rôle in physical science; (3) the principles of the physical sciences are hypotheses; (4) physical theories teach us something of an ultimate objective reality. *Étude sur les théories de la connaissance. IV. Le pragmatisme de l'école française* (pp. 393-422): P. CHARLES. — In the first place an amplification and application, taken largely from *L'évolution créatrice* and *Les données immédiates de la conscience*, of Bergson's statement that our thought is essentially practical; secondly, a criticism of this position in that it involves an unjustifiable separation of the *true* and the *useful* or *practical*: "the useful and the true are not opposed the one to the other. As a general rule, we reach the useful through the true." *Analyses et comptes rendus*: G. Rodrigues, *Le problème de l'action*: E. BARON. W. James, *The Meaning of Truth*: E. BARON. J. Zaragueta, *Introduccion general a la Filosofia*: F. CHOVET. H. Schloess, *Introduction à l'étude des maladies mentales*: R. VAN DER ELST-GAUME. E. Picard, *Le droit pur*: C. BOUCARD. Y. Delage et Goldsmith, *Les théories de l'évolution*: F. CHOVET. N. Moeller, *De Leibniz à Hegel*: T. DE VISAN. *Recension des revues et chroniques*.

REVUE DE PHILOSOPHIE. May, 1910. *Quelques problèmes de Logique et d'Histoire de la logique. I. Kant* (pp. 449-466): A. MÜLLER. — In the Kantian philosophy experience is a synthesis of subjective and objective factors. This statement is substantiated by a study of Kant's theory of the *a priori* and his theory of the categories. *L'Absolu, Étude historique* (3^e Article) (pp. 467-495): CH. HUIT. — Discussion of the idea of the absolute as found in the various philosophies, from that of Bacon to that of Paul Janet and E. Caro. *Revue critique de morale* (pp. 496-

523): G. MICHELET. — Critical reviews of six or eight recent French works dealing with ethical problems. *Le Devoir est-il une superstition?* (pp. 524–535): X. MOISANT. — Contemporary philosophic thought, contemporary customary thought, and logic itself conspire to answer this question in the negative. *Analyses et comptes rendus*: F. Leenhardt, *L'évolution, doctrine de liberté*: F. CHOVET. Dr. P. Carus, *Philosophy as a science*: F. CHOVET. J. Huré, *Les Assises sociales universelles*: T. DE VISAN. G. Frommel, *La Verité humaine*. W. Ostwald, *L'Energie*. J. Charmont, *La Renaissance de droit naturel*: C. BOUCAUD. J. M. Geonach, *La théorie des idées dans la philosophie de Malebranche*: J. BRUNEL. J. Kremer, *Das Problem der Theodicee in der Philosophie und Literatur des xviii Jahrhunderts*. F. Tocco, *Studi Kantiani*. *Notes bibliographiques. Recension des Revues*.

Archambault, P. Emile Boutroux (Les grands philosophes français et étrangers). Paris: Louis Michaud. 1910. Pp. 220. 2 fr.

Cohen, H. Kants Begründung der Ethik nebst ihren Anwendungen auf Recht, Religion und Geschichte. Berlin: B. Cassirer. 1910. Pp. xx + 557.

Del Vecchio, Giorgio. Il concetto della natura e il principio del diritto. Milano, Torino, Roma: Fratelli Bocca. 1908. Pp. 174.

Eislér, R. Geschichte des Monismus. Leipzig: A. Kroner. 1910. Pp. viii + 204. 3 M.

Endres, J. A. Petrus Damiani und die weltliche Wissenschaft. (Beiträge zur Geschichte der Philosophie der Mittelalters hrsg. von C. Bäumker, G. Freih von Hertling, M. Baumgartner.) Munster: Aschendorff. Pp. 36. 1 M.

Geyer, B. Die Sententia divinitatis, ein Sentenzenbuch der gilbertschen Schule. Aus den Handschriften zum ersten Male hrsg. und historisch untersucht. (Same collection.) Pp. xii + 208. 8 M. 75.

Gillouin, R. Henri Bergson. (Les grands philosophes français et étranger.) Paris: Louis Michaud. 1910.

Guthrie, K. S. The Philosophy of Plotinos. His Life, Times and Philosophy. London: Luzac & Co. 1910. Pp. iii + 64 + 32. 3 sh.

Gründfeld, A. Die Lehre von Göttlichen Willen bei den jüdischen Religionsphilosophen des Mittelalters von Saadja bis Maimûni. (Beiträge zur Geschichte der Philosophie der Mittelalters hrsg. von C. Bäumker, G. Freih von Hertling, M. Baumgartner.) Munster: Aschendorff. Pp. viii + 80. 2 M. 75.

Keicher, O. O. F. M. Raymundus Lullus und seine Stellung zur arabischen Philosophie. Mit einem Anhang, enthaltend die zum ersten Male veröffentlichte "Declaratio Raymundi per modum Dialogi edita." (Same collection.) Pp. viii + 224. 7 M. 25.

Lebreton, J. Les Origines du dogme de la Trinité. 1910. Pp. xxvi + 569. 8 fr.

- Lutz, Ed. *Die Psychologie Bonaventuras*. (Beiträge zur Geschichte der Philosophie der Mittelalters hrsg. von C. Bäumker, G. Freih von Hertling, M. Baumgartner.) Munster: Aschendorff. Pp. viii + 218. 7 M.
- McTaggart, J. and Ellis. *A Commentary on Hegel's Logic*. Cambridge: University Press. 1910. Pp. xvi + 311. 8 sh.
- Melin, G. *L'organisation de la Vie Privée*. *L'Orientation particulariste*. (Etude de Morale et de Sociologie.) Paris: Bloud. 1910. Pp. viii + 160. 2 fr. 50.
- Peillaube, E. *Les Images*. *Essai sur la mémoire et l'imagination*. (Bibliothèque Philosophie expérimentale, 9.) Paris: M. Rivière. 1910. Pp. vii + 514. 9 fr.
- Poyer, G. G. Cabanis. (Les grands philosophes français et étranger.) Paris: Louis Michaud. 1910. Pp. 224. 2 fr.

NOTES AND NEWS

WILLIAM JAMES died at his summer home at Chocorua, New Hampshire, on August 26. He had returned from Europe only a week before and his death was quite unexpected. He was born January 11, 1842, and his early studies were scientific in character. His experience with the Agassiz expedition to Brazil in 1865 and his subsequent work at the Harvard Medical School, from which he graduated in 1870, had, no doubt, much to do with the fine breadth of interest and great human sympathy with which he approached all philosophical questions. Professor James lectured on Comparative Anatomy and Physiology from 1872-1880; from 1880 until the close of his university career he occupied himself with psychology and philosophy. His "Principles of Psychology" appeared in 1890. This together with "The Varieties of Religious Experience" (1902) and "Pragmatism" (1907) are the chief landmarks of his influence.

It is announced that the seventh international congress for criminal anthropology will be held at Cologne in October, 1911.

At the meeting of the Association of German Scientific Men and Physicians, to be held at Königsberg beginning on September 18, the addresses at the general sessions are as follows: "Epistemology and Science," Professor Külpe, of Bonn; "Puberty and the School," Professor Craemer, of Göttingen; "The Localization of Brain Function," Professor von Monakow, of Zürich; "The Attitude of the Newer Physics to the Mechanical View of Nature," Professor Planck, of Berlin. In connection with the meeting there will be an excursion, starting from Swinemünde on September 5, going on to Wisby, Stockholm, Helsingfors, Wyborg, St. Petersburg and Riga, and ending at Pillau on September 18.

THE Rev. Robert Harley, F.R.S., a congregational clergyman, well known for his important contributions to mathematics and symbolic logic, died on July 26, in his eighty-third year.

THE JOURNAL OF PHILOSOPHY

PSYCHOLOGY AND SCIENTIFIC METHODS

WILLIAM JAMES

IN responding to the request of the editors to write a few words regarding the late William James, I find myself without any of his books at hand. In any case, an adequate estimate of his philosophy could hardly be made at this time. Those who have been associated with him for many years can alone contribute to the story of his intellectual development—a fascinating topic, I imagine. Those who have studied under him will tell the tale of his teaching. While I have been honored with his friendship for many years, circumstances forbade intimacy, and I am not fitted to speak fitting words of his personality. Of William James neither as philosopher nor as man shall I, then, attempt to write, but will attempt some scattered and hurried impressions of what falls between.

The following bare facts, gleaned in part from the public press, are given as matter of record. He was born in New York City, January 11, 1842, being a little more than a year older than his brother, Henry. He must have come naturally by his psychological and metaphysical bent, for the writings of his father are acute and subtle. Many will recall the delightful introduction to some of them with which William James prefaced an edition of the "Literary Remains" of his father. In a daily paper, it is stated that James Russell Lowell called Henry James, Sr., the "best talker in America." The younger James's early education was somewhat scattering, a fact that perhaps had some bearing upon his freely expressed aversion to the over-regimentation of our American college education. Even Harvard he thought too conventional—especially in its unwillingness to make professors of men who would not work well in harness.

His special training was scientific, not literary, being had at the Lawrence Scientific School, upon an Agassiz expedition, and finally at the Harvard Medical School, where he graduated in 1870. Classicists can doubtless explain how it happened that a man of such exquisite literary sense was the product of a scientific training. The

student of his works notes both that his psychological career grew naturally out of his physiological interests (he was a teacher of physiology in the Harvard Medical School from 1872 to 1880), and that he was moved to strong reaction against the dogmatic attitude of many scientific men of that time. Chauncey Wright, I suppose, was one of the profoundest intellectual influences of his life—but in the reverse direction. In 1878 he married Miss Alice Gibbons, who, with four children, survives him. From 1880 till his retirement in 1907 he was on the Harvard staff as teacher of philosophy or psychology, one or both. That his work was recognized in Europe as well as in this country is witnessed in his honorary degrees from Italy, Switzerland, and England, and his membership in the academy of almost every European country. By common consent he was far and away the greatest of American psychologists—it was a case of James first and no second. Were it not for the unreasoned admiration of men and things German, there would be no question, I think, that he was the greatest psychologist of his time in any country—perhaps of any time. The division of philosophy into schools affects the judging of philosophers, but those of the most opposite schools will cordially acknowledge that Mr. James has been one of the few vital and fruitful factors in contemporary thought.

Every one, I suppose, would cite his sense of reality as Mr. James's foremost trait. I would not say that philosophers as a class are lacking in this trait, but the business of philosophy is to generalize and to systematize; and philosophers are under a greater temptation than others to follow the bent of their own leading principles, to fill in missing considerations and to overlook contrary indications. Mr. James was extraordinarily free from this defect. He saw things in the varied aspects which they have by nature, and was content to report them as he saw them.

The saying, commoner a few years ago than now, but still frequently heard, that Mr. James contradicted himself too much for a philosopher and that he lacked the power of systematic reflection, was in fact a tribute to the sincerity and scope of Mr. James's vision and reporting. As matter of fact, the various portions of Mr. James's "radical empiricism" hang together—in my judgment—in a way indicative of good technical workmanship, but he took things as he found them, and if things were not simple, or consistent, or systematized, his philosophy did not consist in forcing system upon them. In this sense only do I find his thought unsystematic.

In any case, Mr. James has added a precious gift to American philosophic thought. However much or however little it may follow in the path that Mr. James struck out, his influence has made it more hospitable to fact, more sensitive to the complex difficulties of

situations, less complacently content with merely schematic unities. One of the defects that troubled Mr. James in the writings of many of the younger philosophers in America, a certain crabbedness and obscurity of style, is, I think, in some degree traceable to this very influence. It is comparatively easy to appear clear when engaged in expounding second-hand ideas or expatiating upon some convention of literary tradition. Groping in unexplored fields after considerations that are themselves obscure lends itself to clear writing only when it coincides with such lucid vision and constructive artistry as Mr. James himself possessed.

This brings me to what I should name as the second of Mr. James's gifts—his power of literary expression. This power strikes both the layman and the professional philosopher, and strikes them at first glance. I shall not be so stupid as to enlarge upon it, and, not being a literary critic, I shall not attempt to describe it. But it is pertinent to remark that in Mr. James's case not only was the style very much of the man, but it was also of the essence of his vision and of his thought. The picturesqueness of reference, the brilliant accuracy of characterization, by which he has enriched philosophic literature, were a part of his sense for the concrete, and for the varied aspects of the world. He was not a philosopher who by taking pains acquired a literary gift; he was an artist who gave philosophic expression to the artist's sense of the unique, and to his love of the individual. It is no accident that the note which sounds through his last systematic work, "*The Pluralistic Universe*," is "vision." Akin to the objection that Mr. James was not systematic enough for a philosopher, was the remark that he was more of a literary man than a philosopher—a remark sometimes uttered by those who did not like Mr. James's unprofessional short-cuts to results. The late Dr. W. T. Harris, by temperament and training at the opposite pole of philosophy, did not share this superficial opinion. I recall hearing him say that Mr. James's artistic power was genuine evidence of the depth and reality of his philosophic quality—that only one who had both a direct consciousness of his subject-matter and a sympathetic consciousness of what was stirring, unexpressed, in the minds of other men, could attain Mr. James's artistic distinction.

Even this slight note of appreciation would be incomplete did I not speak of one of the most delightful traits of Mr. James's generous personality—his cordial attitude toward anything that struck him as genuine and individual in the efforts of any other writer, no matter how remote the thought from Mr. James's own. "*Philosophy*," Mr. James used to say, "*is a lonely bug*"; and the solitary reflections of many comparatively unknown men in America have

been relieved by a word of appreciative encouragement from Mr. James. At times, indeed, Mr. James's discovery of a Spinoza or a Hegel born out of due season, caused some embarrassment to those of us who were less generous. The same largeness of attitude Mr. James carried into discussion and controversy. It would be a nice matter to decide just how much of his reputation for inconsistency was due to his willingness to make concessions to his opponents in the hope of finding common ground beneath, and to his large-minded indifference to minor details of his own former writings.

It would not be fitting to close a notice in a journal read for the most part by professional philosophers without noting Mr. James's religious belief in the possibilities of philosophy. In spite of his not taking philosophic conventionalities at all seriously, he took philosophy itself very seriously. His popular hold is not at all due, I think, simply to his charm of style. His readers instinctively feel that here is a man who believes something and whose belief is not professional and acquired, but personal and native; a man who believes so deeply in the importance of what he sees and reports that he is not satisfied until his readers also see and have their tone of belief and life modified accordingly. He was, especially in his later writings, an apostle seeking the conversion of souls. Many a note or postal-card of his will be found, I imagine, which refers to the possibility of some discovery, by some one, perhaps to come soon, of a solving word by which light will be made to shine in darkness. When, in one of his recent writings, he refers to the "pragmatistic church," it is not a sectarian and exclusive spirit which animates the phrase, but a fervor of faith in the importance of genuine philosophy. It is a difficult thing for professional philosophers to retain this genuine faith in its simplicity. It gets lost in the mazes of scholarship; wrapped in the napkin of specialization and buried in the ground of professionalism; or it dissipates along with the disillusionizing of early ardent hopes. Our greatest act of piety to him to whom we owe so much is to accept from him some rekindling of a human faith in the human significance of philosophy.

JOHN DEWEY.

COLUMBIA UNIVERSITY.

TRUTH AND ITS OBJECT

TO avoid confusion, it is well to distinguish at the outset between reality as the object of our knowledge and as our object-construct. The real object is that which we must meet, to which we must adjust ourselves, in order to live to the fullest extent. The object-construct or the scientific object is the sum of our knowledge

or definitions about reality, our series and other conceptual tools by means of which we strive to describe and reconstruct our world. Ask the scientist about energy, ether, gravitation, or water and he immediately empties himself of his physical and astronomical equations, his chemical formulæ, etc. These are the scientific elaborations of experience for our convenience and need not be like the facts they aim to manipulate. The equations of Newton are not like the facts or changes that gravitation symbolizes. We thus elaborate our world into various series or contexts.

Every fact can be taken in several contexts. It can be taken in a physical context as part of the interacting world in space; and it can be taken in a psychological context, individual or social. Thus the content, sun, is part of a world of physical processes and known to us by the difference it makes to other physical things and to our psycho-physical organism. The sun is also a concept with a history and place in our thought development, individual and social. Whether we can know has, therefore, a threefold meaning. It may refer to the possibility of taking the same meaning twice within the one stream of experience or to the possibility of two knowers having the same meaning or to the sameness of the physical object. In any case the problem is difficult enough, but it can be simplified by proceeding upon an empirical instead of an *a priori* basis. By this method we shall at least not multiply difficulties.

Can we take an object or fact twice in our individual history? Can we logically take a meaning over without doing violence to it? Can we know the past? Obviously, unless this is possible, identity anywhere else is meaningless, for all knowing in the end must be individual meaning. Social reference itself must have its basis in individual constitution. The ultimate evidence for the existence of sameness must be the individual feeling of sameness, though this sameness of conscious functioning presupposes a degree of structural uniformity on the part of reality which makes the intuition of memory and familiarity possible. The principle of indiscernibles is at any rate valuable as a pragmatic principle. We may indeed have *a priori* reasons, and empirical too, for suspecting the naïve feeling of sameness, even unaided by microscopes, but we can not wholly discredit it without discrediting the judging process itself. We must hold that what can be taken as the same is the same or practically so. There is of course the supplementary social test, in any particular case, viz., that others can recognize our attitudes, our meaningful functioning, as the same or different, and so correct our pathological feelings. But the others, too, are, after all, strands of individual history. If the consciousness of every individual were evanescent, there could be no more recognition of the sameness of other meanings than

of our own. That they can mean that I am the same must, in the end, come back to the continuity of each individual meaning. Apart from such a continuity, social and physical sameness would be alike meaningless. Our meanings, then, like our objective individuals, are the same just in so far as we can acknowledge them to be the same. My concept, sun, still means the same sun, has the same perceptual nucleus of shiny disk and its apparent motion, however much it may have been enriched by astronomical study.

That the past, in so far as it has meaning for us, exists as a part of the present cognitive context is a truism. When it is not thus taken up into the present context it persists potentially as dispositions, manuscripts, or geological strata. It is not well, however, to press this *a priori* argument, derived from the nature of the apperceptive context, too far. If the past were altogether fluent, we could not reconstruct it at all. It never could mean past to us. It must have a content of its own, even though the cognitive context has changed. Pure nothing would not afford a basis for serial construction. In geological transformations the ribs of the old strata do stand out with an individuality of their own, furnishing the basis for our ideal perspective. And in psychological development, too, we must recognize the ribs—certain structures which still stand out as individuals with their own meaning, though in the atmosphere of the present setting. We must feel the functional identity of the past in the present. Here, too, we have record, the retentiveness of the individual mind. The old meanings remain. They cling to their structural conditions as the vine to its artificial support. They do not simply flow into the next moment, for we can acknowledge and compare their own meanings with the new meanings which have replaced them. While the past meanings are past so far as being our personal meanings is concerned, they are not past as ideal structures. As such they can still become memories, to be relieved when the light of consciousness is thrown on them again, even though their place in the growth series makes them have the feeling of pastness. They are part minds—resurrected, dynamically continuous with, but not created by, the present context. They must be acknowledged as having their own setting and meaning independent of the meaning and value which they have in our present cognitive context. They figure thus in two teleological contexts; and these again owe their continuity to their figuring in a world of physical processes.

The dating of this sequence of meanings would be conjectural beyond a few seconds if it were not for the tag of the chronological system associated with the structures. Except for this artificial time coefficient, the understanding of past structures does not differ essentially from the present. They do not differ necessarily in vivid-

ness or distinctness from experiences much more recent. These characters depend upon other conditions besides lapse of time. The difference again in the feeling of intimacy between our own past meanings and other meanings must be sought in the difference in functional continuity with the present. This gives the former a different intuitional value. But this intuition of familiarity may fail even as regards my own successive contexts. The part-minds or associative contexts of the past may become dynamically discontinuous with each other and with the present context as in multiple personality. In such a case we no longer put the personal stamp upon them. We know them, if at all, as we do the contexts of other egos. And even in ordinary life, we may depend entirely upon records for our own past. The interpretation of our past, in any case, is not a matter of knowing the brain continuities, if we did know them, but an immediate recognition of the meanings themselves, whether brought to us by the processes of association or objective records, though this does not disprove the dependence of our sense of continuity upon physical processes.

So socialized is our own experience, so strung out on the conventional measures of time and space, so associated with language, that the interpretation of meanings—even of our own past—is largely an interpretation of language. Words and their contexts are the social correlates of our meanings, in our trying to understand ourselves as well as each other. Brain correlation, however real it may be in the world of causal explanation, has no relevancy to our interpreting of meanings. The support of the world of meanings is language and social institutions. And here we can develop our ideal relations, quite independent of our ignorance of brain dynamics. Logic and ethics were full-fledged sciences before physiology could be said to exist.

But contents must be taken not merely as figuring in the context of individual experience, they must also be taken as figuring in historic social experience. Here a serious problem arises from the fact that we have to recognize a number of coexisting and overlapping individual contexts. As these contexts can not be treated as mere duplicates, the problem of knowing the same object takes another form, viz., whether there can be universal objects or objects for several knowers. Here again the test must be empirical. We, as several knowers, do seem to be able, in spite of the seeming incommensurability of the contexts, to refer to the same content, to agree and to act together. The discrepancies of different fields of consciousness, their different fringes of significance, must be settled by the same inductive tests that any other problem involves, not simply be deduced *a priori*. Such experiments, for ascertaining, for example, the

difference in associative constellations in different individuals, have already been carried on by Münsterberg and others. Such differences, however, have to do with the imagery of the meaning, not its final intent or reference to an objective world.

Through the common understandings of the several subjects we build up the world of science, institutions, and beauty. These unities come to be recognized as existing on their own account. True, these social contexts, as the past contexts, must figure in the cognitive context of the individual subject. They must become known through the agreement of the idea with its intended consequences within individual experience. But we must acknowledge, as independent of the cognitive context, an objective context in which the facts have their own relation and significance, which we must respect. Like individual experience, social experience shows its dependence upon physical continuity for records.

We have been forced to take account of two forms of identity, teleological identity and physical identity. The former has presented two kinds of problems, viz., Can present subjects know the same meaning as past subjects within the same history? And can one individual subject know the same meaning that other subjects know? In either case, teleological identity is closely dependent upon physical identity. For my sharing my own past, or the possibility of memory, is dependent upon processes, not themselves experience. Else there would be no continuity of waking moments with each other. Social agreement, too, involves a physical constitution which makes continuity of centers in space possible and which concerns those records from which we can reconstruct our meanings in time. Identity of meaning is impossible unless we can take our physical objects twice.

Nature itself, as we know it, is our social construct. Our object, nature, at any one time, is nature as our ideal construction, with its systematized expectancies as reduced to scientific technique. Yet, while physical science is a social institution, we can not recognize its object as a social institution. We must distinguish between communicative processes, which we can acknowledge as having a meaning or purpose of their own, and non-communicative processes which we must deal with in a merely external way. While both have their own context, independent of the context of our cognitive purpose, the context of the physical processes is not one of meaning, but of causality. The physical processes furnish a limit which our ideal construction must meet. They are not mere phenomena. We must recognize physical things as figuring in their own context of physical interactions, within their own space constellations, and their own history of cumulative changes. But they also figure, as contents, within social

experience and within the individual conscious moment of perception and interpretation. Only the latter contexts have meaning and value bound up with them. The former *means* a context for our ideal construction merely.

Existentially, if not teleologically, our relation to nature is bipolar. We do not make the gravitational differences, the interstellar distances, and the geological strata when we take account of them. They acquire significance, not existence, when they are taken over out of their own context into our cognitive context. The latter must tally in its coexistences and sequences with the intended context of nature as perceived, if we are to anticipate successfully its facts. However much we socialize nature in our scientific procedure, science itself becomes meaningless unless we also respect nature as having its own context.

We have seen that the processes, which we must take account of, exist in three types of context. They figure in the world of interacting energies, with their causal and space relations; they figure in the social context—in science and institutions, which we must imitate and react upon; they figure in the special context of each individual, as he tries to appropriate the processes as part of his world of meanings. In studying the record of Thales or taking account of our own meaning of yesterday, all three contexts are involved.

What relation do these contexts bear to each other? The physical sun out in space, and my meaning, sun, are both real structures. They make a real difference to each other. The differences my purpose makes to the sun are negligible for scientific purposes. And so we come to treat the process as one-sided. But while we may ignore the differences our thoughts make to the physical world, we must, in order to have knowledge, assume that the universe is a dynamic whole. The thought structure must be dynamically part of the same world with the sun structure. It hangs together with the sun mediately at least, by hanging together with our own nervous system. Every fact within the universe must be capable of making a difference, directly or through intermediaries, to other facts, and especially to human nature, to make knowledge possible. Hence parallelism is an impossible theory. It is well to remember that our splitting the world into ideal series, such as mind and body, does not affect the continuity of the energetic relations of the real world.

When we come to the relation of the context of individual meanings and the social context, it is easier to see how one makes a difference to the other. All thinking, however many private frills and corruseations it may have, is social thinking. It can only develop and only become valid in response to social needs. On the other hand, the very existence of a social context is due to the overlappings,

the common attitudes and contents, of individual minds. This is true practically as well as theoretically. Mutual trust or distrust makes all the difference between economic confidence and social stability, on one hand, and panic and anarchy, on the other. In the plastic world of intersubjective relations, our understanding each other's meanings and our will-attitudes toward each other, does make a decided and recognizable difference to the structures involved, individual or social.

When we come to the past contexts again, here we must recognize a different relation. While these contexts can and do make a difference to the living present, send their radiation on as we restore continuity with them, we can not in turn influence them. We can not change the content of Homer's *Iliad* by our thinking about it, though we can change its meaning and value for ourselves.

Our relation to the physical world is existentially bipolar, as we must acknowledge the existence of nature, but it is teleologically unipolar, as nature has significance and value only as taken up into the context of human nature. While all other contexts, individual and social, must hang on nature for records, it must hang on them for significance. Our relation to the social context, again, is both existentially bipolar and teleologically bipolar, as we must acknowledge the other subjects both as existing on their own account and possessing a meaning of their own. The past finally we must take as teleologically bipolar, since we must acknowledge that the past contexts have a meaning of their own. But the relation is existentially unipolar.

Each context, finally, must be recognized as having its own perspective and its own rate of motion. While the same content, sun, figures as part of the physical world; in the context of social history; and in individual history, the physical history of the sun, with its dizzy figures, bears no proportion to the history of the social concept, sun; or its cognizing in individual experience. And in each case the object must be recognized as qualified by the relations or laws of the context within which we are taking it—the laws of the associative context of the individual mind; of the intersubjective connections of social history; and of the physical uniformities as observed by natural science.

We can see now that the contention of Bradley that the object selected or referred to in the truth attitude is always reality, is at best a clumsy way of putting it. It reminds one of the story of the man in the Adirondacks who tried to shoot a bear by aiming at him generally. To be sure, underlying our whole search for knowledge is the postulate that the facts or processes which we strive to know, belong to one world with our cognitive purposes and with each other,

i. e., they can make a difference to each other. A wholly indifferent process is obviously unknowable. But while this postulate of continuity is assumed or tacitly implied in all our judgments, it can hardly be said to define the judging process. This does not aim at the universe generally, but is fundamentally selective. The object must be singled out from the immediate mass of experience by the conscious purpose; it becomes meaningful precisely by being thus selected and furnished its specific context. The object of the selective meaning is precisely what the subject sets itself or is interested in, whether Apollo, or two plus two, or gravitation, or your friend's opinion, or time, or space. There is no need of mystification here.

That all the facts or processes of the universe belong together within an absolute context of significance, that every process makes a reflective difference to every other, or is a fragment which dialectically unravels a through and through meaningful system and that therefore in meaning anything whatsoever we can not help, whether we know it or not, to mean the whole, because it is the whole that means—this, while a logically possible hypothesis, is not a self-evident axiom. It does not, with all its confidence, dispel one whit of our ignorance or make scientific experiment and discovery any less indispensable. It must at any rate come as an induction from the needs of human experience, not as an assumption at the outset.

Is the object a past or future state of consciousness? Can the object in the first place be stated as a past state of consciousness? This has been assumed by many philosophers. It has been pointed out that consciousness is ever on the wing; that to attempt to analyze and describe it is to transfix it; and that what reflection deals with, therefore, is something that has been, a *post mortem* autopsy. We are told that knowledge looks backward, while action looks forward. If this were true, we could not only not know our passing moments, we could know no object whatever, as every object of knowledge must figure in this passing stream. To be sure, the reflective attitude is very different from the non-reflective, and an immediate content may later figure in a reflective context. But subject and object can not be separated in time, they are phases or poles of the same reflective moment. The object in any moment is what we mean, that which interests us, that which we conceive as the fulfillment of our purposes whether moving or static. And this surely need not be a past state of consciousness, unless the purpose is to understand the past. And even here we are striving to realize at least an individual, and generally a social, present purpose—a purpose big with the future, which it strives to bring to birth.

On the other hand, it has been maintained that the object must be stated as future states of consciousness. Truth, we are told, con-

sists in its consequences. As attention is essentially prospective; as knowledge is for the sake of adjustment to a larger world, this view seems more reasonable than that the object is a past state of consciousness. But while the future consequences may furnish a corrective of knowledge, they can not be the object aimed at. If the truth attitude consisted in consequences altogether, it would be as meaningless as it would be non-existent. We must aim at a present constitution, we can not aim at what does not as yet exist. Even the consequences as we picture them to ourselves are our ideal constitution, based upon present data, the projection of the uniformities as we must take account of them. In the process of experience, to be sure, both the setting and the values may change; and the aim comes to have new meaning, whether it works or must be abandoned. But the object referred to is not the future consequences with their unforeseen real differences. They constitute quite another story, which must be waited for.

In the effort to arrive at truth, history and science must use the same methods. In either case, we must proceed by means of hypothesis to select and systematize our facts and weave them into a consistent whole. In either case validity must mean that the results permit of social agreement, as the process of investigation goes on. The data of the past must be treated as the data of the present, the motives of Cæsar like those of Roosevelt, the past *nebulae* like present *nebulae*. In either case, the immediate data must be reconstructed into a whole on the basis of their identities and differences, interpreted in terms of concepts. Sometimes we may simplify our present complex situation by spreading it out as a genetic series. Sometimes we may simplify the past results by reproducing them in present experiments. But whether we are dealing with scientific or historic construction we are striving alike to unify present data.

The difference between history and science is not a methodological difference, but a metaphysical difference. Science is dealing with a world which we acknowledge as existent. The chemist and the psychologist can become perceptually continuous with the objects which they mean, while the historian from his symbolic data, which we call records, is trying to reproduce an object no longer possible of perception or direct communication. Cæsar is no longer marching his legions across the Rubicon; fair Helen and the heroes of the Trojan war are at rest. To be sure, the historian is not dealing with a myth world any more than the scientist. He is dealing with individual meanings or structures continuous with our knowing attitude. But these individuals have survived only through the symbolic substitutes or vehicles of language and art which have carried the meanings down the stream of time. The parchment has survived the creator of

the meaning, though the soul of the meaning itself may outlive many parchments, may require a succession of carriers. The continuity is a mediate continuity; and a mediate continuity which only leads ideally back to the real subject. The real processes themselves, with their living glow, are not reversible or reproducible. The time element, therefore, makes the difference between the facts which the scientist and the historian are striving to reach. This comes in as a limiting or metaphysical concept, however, and does not, as such, play a part in the induction which must depend through and through upon data, whether as regards content or chronology.

Since reality is individual and changing, absolute fact, as our final interpretation of reality, must be regarded as a conceptual limit. Fact as we have it is the result of such identities as can be reached by various coexisting meanings about their common intent, as regards themselves, the past, and nature. This interpretation, however, is an indefinite quantity. Our interpretations and intents must still be reinterpreted to fit into the future contexts of judging experience. The context of history, so far as we know, is never completed. What is the use of talking of the absolutely abiding and permanent, where nothing so far as we know is abiding or permanent, and where life is a continuous readjustment to a changing world of facts and values? On the other hand, what is the use of talking about an absolute flux where, after all, we have a considerable degree of continuity and steadiness? Absolute flux and absolute identity are both logical limits within such a world as ours. Here I can see the advantage of the absolute as an ideal hypothesis. Absolute fact would be the steady glare, the unblinking insight of an absolute ego, the same yesterday, to-day, and forever. Such a limiting concept, like Newton's absolute rate of motion, furnishes at least a convenient device for showing the relativity of our actual facts, as Newton's hypothesis of an absolute rate of motion shows the relativity of all empirical rates.

One thing, however, is clear. Truth always *means* to be eternal. No truth ever intended its own falsity, even though our knowledge of the law of change has made it evident in general that it may not be final. In so far as it satisfies our demand, is really truth for us, there is stamped upon it its own eternal intent. I have reference here not to the mere symbols that stare us in the face with their permanence of structure, even after they have, like old, worn-out clothes, been discarded. I am referring to the living truth attitude. This always says, "Verweile doch! Du bist so schön." Precisely here lies the tragedy of truth. The real world: the real subject that judges and the real object it means, know of no eternity, they will not be bound by the chains of thought, Parmenides notwithstanding. Thus

our experience is ever outgrowing our concepts, crystallized into language. Even when the subjective structure grows stereotyped and is satisfied with the old point of view, the real situation does not stop for all that. What is more pitiable than to see the old investigator sticking to his antiquated hypothesis in spite of new evidence and larger generalizations?

Truth or meaning is always of the moving now. It makes sketches by catching certain constancies—sketches something like reality, even as the cartoonist's sketch resembles Roosevelt sufficiently for identification—but the real change value it can not catch, except as it congeals into results. Truth, therefore, just because it attempts to fix a world of process, must, to a certain extent, be hypothetical. It can not bind the future. It is based upon the relative uniformities of experience which in the case of the physical world have an almost eternal fixity as compared to our fleeting lives. Outside of that, our equations talk nonsense, as Clifford says. The laws of science, even mechanics, are, after all, our plastic attitudes toward things. Our atoms and ethers, our law of conservation of energy and our law of gravitation, must be retranslated in the light of fresh discoveries. The very fact that our laws are human concepts, apart from any change in the objects they intend, which for mechanical purposes may be practically stable, must make them plastic in the ongoing stream of experience. The unity we find in things is first of all the unity of our experience and must vary in meaning with it.

Is truth conventional? It is easy, we have seen, to confuse truth and its symbols, such as language and mathematical models. Those who have insisted upon the conventional character of truth have, no doubt, been guilty of such confusion. Because language is made up of abstract entities in the way of substantives and relational terms, they have also insisted that our judgments are made up of such entities and hence must be false to the unitary whole which they postulate. Most of the objections raised by such critics of thought as Bradley are based upon the confusion between the abstract symbols, thus converted into entities, and thought. Hence the ease with which thought is transcended in those writers—transcended by first being caricatured, and then abandoned for mysticism.

But it is not only from the side of philosophical mysticism, but from mathematical science as well, that the question of the artificiality of truth has been raised. Nature knows nothing of our ellipses, parabolæ, or equations. Hence is not scientific truth merely conventional? No doubt there is a conventional element in truth. Human nature contributes the measures and series, the descriptive symbols; and, inasmuch as individual invention and technique count for more in science than in common sense, the artificiality seems all

the greater. But it must be recognized that there is a surd of content which we do not invent, viz., the perceptual sequences which we try to describe. This has been called "the universal invariant." The psychologist would probably be sceptical about universal invariants where human individuals are involved, but we may be said to have at least such constancy as permits of pointing and which furnishes the real currency on which our credit system in the way of scientific laws and formulæ do business. The contents may remain constant, however much their values may change in new subjective contexts.

The phenomenal character of our knowledge, however, does not consist in that facts are vitiated by being known, as has sometimes been held. On the contrary, reality, whether of the thing kind or the self kind, is precisely what we must take it as, in different contexts. Truth is what we mean as we systematically strive to imitate the intended object. What makes our knowledge so phenomenal and instrumental lies in what it must omit, rather than in what it says. Our selection is not adequate to the richness of reality. We fail to exhaust the continuities of nature and the manifold of the world we strive to share. And while our conceptions help to piece out our perceptions, still our results are proximate and pragmatic. For the purpose of prediction and practical control we emphasize the common and uniform. But we pay dearly for our invariants in omitting the fleeting values and meanings that give each moment its concreteness. This is especially true in dealing with the world of selves, past and present. For such concreteness we substitute our averages, our classificatory systems, our space and time series. We split the universe into special departments with their partial hypotheses to meet our needs and limitations. It is this selective and abstract character of knowledge that makes it seem so gray compared with the glow of life.

"Grau, teurer Freund, ist alle Theorie
Und grün des Lebens goldner Baum."

But it is also this that makes it so convenient an instrument in finding our way from fact to fact and in meeting the complexity of life. The unique and individual shades of meaning, the fleeting rainbow hues of the moment, each will must acknowledge or supply for itself.

What meaning we are justified in attributing to this acknowledged reality depends upon the functional agreement of ideas with further experience. This reading, however, is not a matter of our observing brain changes, but of observing conduct. We do not, unless we are psychologists, consciously watch other peoples' bodily symptoms and compare them with our own, even were this possible.

Differential reaction goes hand in hand with differential meaning, long before we reflect. Through a long process of survival selection and through social imitation, we have come to react spontaneously upon certain situations, including the behavior of other human beings. In higher mind-relations, this means an immediate interpretation of language. This is what gives the intuitive character to all our normal interpretation of other selves. We start with an implied hylozoistic philosophy of the world, which we afterward individualize through experience into objects with more or less definite differential significance—the world of selves and the world of things, the world of teleology and the world of mechanism, with their specific contexts.

The persistent effort to see the various contexts of the world of objects as one pattern, the divine love for the wholeness of things, we call metaphysics. This raises the question: Is metaphysics a science? From time to time the controversy breaks out as to whether metaphysics is science or poetry, whether it deals with evidence or whether it is a realm of free imagination, only limited by its own internal purposes and the law of consistency in working them out. If one looks back over the history of metaphysics, one can find ample reason for such a controversy. Metaphysics has too often attempted to spin its spider-web of logic from its own *a priori* demands, with not only a neglect, but often a conscious disdain, for facts. History and science have been fitted alike into the philosopher's *a priori* models. But whatever may have been the sins of metaphysics in the past—and for them it has duly suffered—we are now agreed that it must proceed by the same methods as science, not by dogmatic conviction, but by tentative hypothesis and verification. This is at least the import of the pragmatic movement. It differs from other sciences, not in its method, but in its intent, in the problems it sets itself, viz., the final interpretation of knowledge and the other overlapping problems of experience, which lie outside the special sciences.

What has inspired the controversy recently, however, seems to be not a question of method, but of value. It has been pointed out that the large generalizations of metaphysics furnish a distinctly esthetic value and that this is the characteristic thing about them. But then why is not all science a branch of art? It is a long time since Plato felt the kinship of truth and beauty and since Lotze pointed out that the feeling for unity, which furnishes the motive and joy of science, is an esthetic feeling. However, while we recognize identities, we must not neglect differences. No doubt science and esthetics are fundamentally the same in their instinctive demands for unity, distinctness and simplicity. But the limitations which are recognized in art and science are vastly different. We do not insist that art shall be

capable of verification in the sense that science must be. The former must minister to the instinct for the beautiful, and must do so by eliminating the accessories and selecting the relations which fit that instinct, while science must deal with the world of fact and ascertain its constitution. Both are selective. Both idealize their world. But while science seeks its verification in the world of existence, art seeks its verification in the growing meaning and unity of human attitudes.

Metaphysics is simply the attempt to find out the truth about reality—not the truth for a certain purpose merely, but what we finally must think about our world. Reality is non-communicative sometimes, like a man who refuses to be interviewed—well, then like the reporter, we have to write up what we think about it from such external marks and probabilities as we can find, not what it thinks. In any case, philosophy, like the enterprising newspaper, has to get out a good many editions to keep up with the procession of history.

J. E. BOODIN.

UNIVERSITY OF KANSAS.

ART AND NATURE

A WATERFALL is a thing of natural beauty; artistic beauty is attributed to the painting of a waterfall. The cross-section of a tree which has been felled in the forest reveals the grain in variegated concentric lines: Is this natural or artistic beauty? Where does landscape gardening belong: Is it nature or art? At what point do the pile of building materials and the plan in the architect's mind become architecture? "A child talks to us with grace in her movements and sweetness in her voice, and we admire what we term her artlessness. A grown woman, an actress perhaps, produces almost identical effects that seem equally pleasing, but we admire in her what we term her art."

I

It was the belief of Plato that real beauty is original, pure, and perfect, while natural beauty and artistic beauty are derived and tainted with imperfection. He regarded the objects both of nature and of art as poor reproductions of an absolute reality abiding in the realm of what he called ideas or archetypal forms. Phenomenal things are but the unreal ephemeral embodiments of eternal meanings or concepts, and the representations of the artist and artisan, while aiming to grasp the essential significance of these universal types, as well as the phenomenal objects, turn out to be, at their best, but copies twice removed from the real. While he does not clearly state the issue between natural and artistic beauty, yet his doctrine of

the non-being of the world of space and time implies that both nature and art (which, for him, includes what we call industrial and fine art) are doomed to inferiority because of their necessarily derived and secondary character. Albeit, both are derived, yet natural beauty, being but one remove from the real, is prior and superior to artistic beauty.

The teaching of Aristotle is an advance upon that of his great predecessor. He redeemed the situation so far as to suggest that art supplies the deficiencies of nature and by the free play of imagery characteristic of artistic creation perfects and even transcends the aims which nature in her ordinary processes is striving to actualize. Here is an implication that natural and artistic beauty are equally real, but that the latter is the fruition of the former. For the Stagirite art is an imitation of nature and "imitation" still has much of the Platonic meaning that the artistic representation is inevitably inferior to the reality represented, but that he does not mean a mere transcript is shown by the fact that he says that the artist may "imitate things *as they ought to be*." Fine art, for Aristotle, never became symbolic, as in modern times; it always strives to be a likeness of the original, as when he conceives of drama as the portrayal of human emotion and action. But he verges toward the modern view in his theory of poetry (the highest form of art, for him), when he says that verse, as an expression of the universal element in human life, seeks to portray the ideal by getting rid of all contradictions and disturbing irrelevancies. A work of art, he says, is an idealized representation of human life under forms manifest to sense. Art here becomes a creative act which, as Professor Butcher says, "resolves itself into an effort to complete in some sense the work of nature."

The modern theory in general presents a striking contrast to that of the Greeks, yet we find Kant saying that art must turn to nature for her cue. "Beautiful art is art in so far as it seems like nature." Art must have the form of purposiveness without expressing any particular purpose; it must be significant in general without being specifically so. Or, as he puts it, "That is beautiful which pleases in the mere act of judging it"—not for the gratification it gives nor for any definite use, but just for its own sake. "Hence the purposiveness in the production of beautiful art, although it is designed, must not seem to be designed; beautiful art must look like nature, although we are conscious of it as art." "Genius," he adds, "is the talent (or natural gift) which gives the rule to art. Since talent, as the innate productive faculty of the artist, belongs itself to nature, we may express the matter thus: Genius is the

innate mental disposition through which nature gives the rule to art."

Ruskin, too, was a champion of the return of art to nature as the source of all beauty, his theory coinciding with that of Plato in so far as it maintained the priority and superiority of natural beauty. He affirmed that the attempt to copy nature is the origin of all art. The highest beauty is to be found in "nature undisfigured by man," in "virgin nature," because nature is only truly herself when nothing has been done to travesty or deface her. "Beauty," he says, "is the signature of God upon his works." If art would produce objects of beauty she must pattern upon the original. Nature alone possesses perfection; she is the supreme type and eternal model, whether it be "the leaf that fades and falls to the passing wind, the smallest pebble which rolls down from the mountain, or the frailest reed which bends over the water." All the most lovely forms and thoughts are taken directly from natural objects. "We lay it down as a first principle that our graphic art, whether painting or sculpture, is to produce something which shall look as like nature as possible."

Schiller's paradox that man is civilized only in proportion as he has learned to value the semblance above the reality is, however, much more characteristic of the modern point of view. To the romanticist, for example, art is the highest type of beauty since art is the product of the human mind and man is nature's crowning achievement. Natural beauty is contaminated by the concrete forms in which it appears. The highest beauty is the beauty of ideas or meanings which in art struggle to free themselves from their sensuous embodiment. Poetry, on this account, is the highest of the arts, because here meaning emerges in its most untrammelled form. Beauty undergoes an actual transformation in passing through the human mind and becomes charged with a significance that the deepest insight would never find in nature.

Hegel relegates natural beauty to an inferior position, since on his theory, all beauty is derived ultimately from the idea, the meaning, of the object in its relation to the total world-process. The concrete and sensuous husk in which all natural beauty comes to us obscures and defiles its pure essential import. The core and substance of beauty lie in the depth and wealth of significance which are revealed in the ideal as opposed to the sensible world. Nature is Spirit in a swoon, a trance, a sleep, as it were—still unconscious, unawakened. "The natural object is inferior to the art-product because, unlike the latter, it has not been born—born again, that is, of mind."

Mr. Bosanquet who writes the history of romanticism, following

up the Hegelian idea, finds the differentia of natural and artistic beauty in the degree of sophistication. Nature is the world as it exists for the untrained perception of the average man, whereas art implies the culture and expertness which come by knowledge and trained insight—a view similar to that of Taine, who held that the artist is superior to his model, disentangling nature and reinterpreting her according to his own ideas.

II

The difficulty of reconciling these opposed views which find beauty respectively in the objective world of nature and in the subjective world of human nature, suggests that beauty lies in neither taken alone, but in certain relation of the two. Beauty may be a continuous creation through the interaction of subject and object, the dualism of nature and art falling within the evolving content of reality instead of implying a relation of man's mind to an external object lying outside his consciousness. If reality be defined as the content of evolution, it is obvious that beauty may be conceived, not merely in terms of the object-matter, but also in terms of the method of experience. Goethe hints at a new point of view in certain of his aphorisms: Art is the truth of nature. Mere nature is an unreal abstraction. Nature and idea can not be separated without destroying art as well as life. When artists speak of nature, Idea is always understood, without their being clearly conscious of it. That very thing which strikes the uncultivated as nature, in a work of art, is not nature (outward) but man (inward nature). We know no world but in relation to man; we will have no art except it be an expression of this relation.

If the model and the artist, nature and human nature, are thus intimately bound together, we are to conceive of art and the artist, not as the medium of carrying an outside reality into experience, but as the instruments of evolving a reality which is the immanent content of that experience. Art is not merely revelatory. It itself is but a phase of the real; it is the reality of nature undergoing transformation in terms of human nature; it is the principle of relevancy and adequacy by which man's industry and science give a propitious form to natural objects and events. "Nature is made better by no mean. But nature makes that mean; so o'er that art which you say adds to nature is an art that nature makes."

The true antithesis is not between nature and art, but between subhuman and human nature. In this sense it is clear that in certain spheres art has transcended anything of beauty which we find in nature below man. Artistic beauty implies design, manipulation,

mediation; it selects and arranges with reference to the needs of man; it generalizes and idealizes underlying patterns and types. "From the moment the artist lays his hand upon any natural object," says Goethe, "that object no longer belongs to nature, nay, it may be said that the artist at that moment creates it, since he appropriates the significant, the characteristic, the interesting, that he finds in it, or rather breathes into it a higher value."

But nature as she appears even to the ordinary perception of the average man is only relatively unmediated, since even the so-called natural phenomena are really perceived only as they are apperceived. There is no absolutely virgin nature, no utterly unspoiled presentation. If the differentia of art lies in the manipulation of the material presented by nature, then the felled tree or the log sawed across in such a way as to reveal the grain may be as truly art, in principle, as the polished quartered oak. And why not go a step further back and admit that when the artist looks at a tree he mediates it as truly as when he fells it to the ground and fashions it into a table?

Art is nature humanized. Man's "habits and pursuits leave their mark on whatever he touches," says Professor Santayana. "When absorbed in the beauty of nature we do in fact appear to ourselves to be entirely receptive," says Mr. Hirn, "but in truth our enjoyment, if the enjoyment has any esthetic value at all, is always more or less derived from the activity of our own mind." Any product of fine art may be regarded from the point of view of natural beauty, if we extend nature to include human nature, while nature herself may be regarded as a work of art if we take into account the human manipulations and transformations involved in any act of sense-perception. There is no difference in an ultimate analysis between natural and artistic beauty, since all art must, in the broad sense of the term, be naturally produced, and the crudest perception of beauty by the lowest intelligence involves the creative participation of the percipient.

The distinction between natural and artistic beauty retains a certain value for descriptive purposes, but logically it reduces to a relative difference in mediation. The distinction arises and is of utility solely in relation to the recording and making socially accessible of certain forms of beauty which are then called artistic in contrast with others which have not been thus socialized. Artistic beauty is natural beauty given social embodiment. The difference between art and nature is science. Art is nature becoming "second nature" through the instrumentality of industrial and scientific metamorphosis of its materials. The deliberation and mediation which Hegel and Bonsanquet attribute to art are more properly ascribed to the science by which art has so largely profited and upon

which she has been so constantly dependent for the perfection of her technique.

The true differentia, in other words, is to be found in the purpose of the artist or esthete—as representing a distinct type of human interest and occupation. What is “style” in a work of art but that peculiar form which nature takes in and through its special manifestation in this particular artist and under certain local and temporal conditions? When we demand that a work of art shall be true to nature, all depends upon what aspect of nature is in mind: the expressed purpose (human nature) or the materials (nature) which are the medium of expression. Truth to nature means truth to the law of the process by which she at this moment and here in this artist is evolving; it includes what nature is becoming in man, and in this individual man, as truly as what she is apart from man. In this sense, appreciation may be said to be the keynote of natural beauty; production, of artistic beauty. That is to say, natural beauty is beauty appreciated in terms of the purely personal technique, the sensorimotor adjustments involved in any trained perception; artistic beauty is appreciated in terms of some form of extra-organic, objective, so-called impersonal technique, some phase of the socialized professional method of the artist. Natural and artistic beauty therefore overlap in the case of the appreciator who is also somewhat of an artist.

H. HEATH BAWDEN.

SAN YSIDRO, CALIFORNIA.

NOTE ON A QUANTITATIVE ANALYSIS OF MATHEMATICAL INTELLIGENCE¹

THE following is a brief summary of the results obtained by an application of the theory of correlation to the analysis of elementary mathematical intelligence, according to the scheme suggested in this JOURNAL.²

A set of 83 boys from the five middle forms of an English public school were examined on three mathematical papers (geometry, arithmetic, and algebra), their answers being marked according to a differential system of marking, under the following heads:

A. Memory of definitions and general principles (*e. g.*, principle of superposition) in geometry.

B. Memory of constructions (geometry).

C. Memory of preceding propositions and power of applying them (geometry).

¹ For a further account of the results here described see *Biometrika*, Vol. VII., part 3.

² See Vol. VII., p. 14.

D. Recognition of necessity of generality in proof, and power of recognizing general relations in a particular case (geometry).

E. Accuracy in arithmetic.

F. General memory of rules and power of applying them (arithmetic).

G. Power of doing sums in percentage and proportion (arithmetic).

H. Accuracy in algebra.

I. General memory of rules and power of applying them (algebra).

From the nine series of marks thus obtained, together with the total marks in geometry, algebra, and arithmetic, coefficients of correlation were calculated by means of Professor Karl Pearson's product-moment formula. These coefficients were then "corrected" for the two disturbing conditions, (1) difference of age; this was found to affect only algebra and H; (2) difference of form; boys in the higher forms had covered a wider range of syllabus than those in the lower; for this, Professor K. Pearson's "correlation ratio," η , was calculated.

The following are a few of the values obtained after applying these corrections:

$$\begin{array}{ll} r_{\text{Geom. Alg.}} = 0.18 \pm 0.07 & r_{\text{CG}} = 0.28 \pm 0.07 \\ r_{\text{Geom. Arith.}} = 0.28 \pm 0.07 & r_{\text{GI}} = 0.00 \\ r_{\text{Alg. Arith.}} = 0.76 \pm 0.03 & r_{\text{FG}} = 0.41 \pm 0.06 \\ r_{\text{CD}} = 0.91 \pm 0.01 & r_{\text{EH}} = 0.33 \pm 0.07 \\ r_{\text{DG}} = 0.11 \pm 0.08 & r_{\text{FI}} = 0.04 (< \text{P. E.}) \end{array}$$

It will be noticed at once from these figures that geometry and algebra are not at all closely related. As a matter of fact, they owe their relation entirely to the mediation of arithmetic, since, if "partial" coefficients are calculated between the three abilities, the following values are obtained:

$$r_{\text{Geom. Alg.}} = 0.00 \quad r_{\text{Geom. Arith.}} = 0.23 \pm 0.07 \quad r_{\text{Alg. Arith.}} = 0.75 \pm 0.04$$

(these are values deduced on the assumption that the third ability is constant throughout the series of cases; cf. the principle of "partial differentiation").

It will also be noticed that G (power to do percentage and proportion sums in arithmetic) is more closely related to essential geometric ability than to essential algebraic ability.

By a thoroughgoing application of the general theory of multiple correlation, many further truths could be established on the basis of

the same data. All that the writer attempts in this note is to demonstrate the practicability of the general idea of his previous article.

WILLIAM BROWN.

UNIVERSITY OF LONDON.

REVIEWS AND ABSTRACTS OF LITERATURE

Life as Reality. ARTHUR STONE DEWING. New York: Longmans, Green, and Co. 1910. Pp. 214.

The aim of the author of this very readable essay is to vindicate his belief in the possibility of a system of idealism which gives "full value to the will-strivings of our life-interests without degenerating into crude individualism." The answer to the metaphysical question is, "Reality is Life." It is evident that everything depends upon what the author chooses to mean by "life." The book is an endeavor to explicate this and to do so within idealistic presuppositions.

The problem of reality is insistent in terms of a contrast between the world of subjective values and the world of objects with which science deals. We need an absolute that will found the reality of both and bridge the chasm. "Sense-experience, science, happiness, the moral law, society, and religion each has its claim, each has its contribution to offer to the totality of human values, each believes itself the final reality in a universe of law and purposes. Beneath and beyond all stands the reality of life" (p. 17).

Sense-experience reveals no world independent of consciousness: ultimately it reveals "our own life-activity." "Behind the experience lies the perception of sense-qualities and behind this the life values which give experience its content" (p. 39). Science, organizing the world of sense-impressions, does so only by "the translation of our own life activity into terms of objective experience." The elements and laws of science are at most the projections of life activities.

Again, in the sphere of morals, reality is not, in the last resort, to be found in objective standards, whether empirical or spiritual. "They can not give values to life, because it is life that determines their own values" (p. 77). The only law that life recognizes, life creates: it is the law of self-expression. This self-expression "is not a matter of crude caprice, but is intimately bound up with the self-expression of others" (p. 82). Yet "society exists for the individual and not the individual for society" (p. 85). Society is part of one's self-expression.

Nor does religion give us the ultimate reality of life. It "fails in the effort to reach final reality because the form in which feeling occurs in our human consciousness is individual, and the form which religion demands of it in order to reach its reality is over-individual and objective" (p. 117). The reality of religion in all its aspects is "a groping for a larger life" (p. 122). Even the God which it creates is not the Divine Personality, universal in the sense of being objective. "Its God is life, because its reality is life" (p. 123).

Life is the criterion of the real and life is the criterion of the true. Not in the pragmatist's sense: for while pragmatism is right in its emphasis upon "the fundamental value of will activity," it is wrong when it tries to lift this "into a theory of logical truth. Its failure is a failure to distinguish between the vital impulses which we feel and those formal categories of logic by which the mind tries to find truth as a thought process. The life values given in the strivings of our will are sufficient without this confusion" (p. 136). If we introduce "consistency" and say that truth works because it is consistent, then the pragmatistic formula becomes of much value so far as it goes. But consistence with what? One makes the correct advance when he views truth teleologically and makes consistency the consistency of purposes. Truth "stands for a meaning in the totality of meanings" (p. 140). The only way we can know this whole of truth, the only way we may test it "is in terms of life values." The unity of truths is the unity of life. This is the only unity we know. Every truth is true "because it comes to our consciousness as a part of the effort to express life" (p. 144).

Long before one reaches the chapter which the author calls "the crux of the book" and which lends the book its title, one has become impatient to know precisely what is meant by this "life" which is to give all meaning to the ontological predicate. Of course nobody disputes that life is real in some sense: all metaphysical speculation finds its genesis in this consideration. But the metaphysical quest has usually proceeded to define this predicated reality and then to interpret life in terms of it. But when one refers reality back to life as to a synonym, one does not thereby evade the necessity of telling just what particular meaning is to be given to life as substituted for reality. The author insists that if one seeks for a definition in logical terms his search is in vain. Life is felt, not known. Or, life is known only in the living: in terms of mere definition we have life no more, but the veriest shadow of life's skeleton. One can say that life is self-expression: but this self-expression we can not know or describe; it can only be felt. Reality is not to be expressed in a philosophic system. "Life feels its own deep reality and beneath this feeling no philosophy nor metaphysics can ever penetrate," for "all the intellectual processes of logic and thought, all the ethical and metaphysical constructions which confine themselves to expressing reality as a closed system of relations, deal forever with externals" (p. 168). "Life itself is its Absolute," and we know this absolute only as an ideal, for we know only our present and immediate moment of life. Yet we know that present reality as only part of a whole since its very nature is dynamic and purposive. And, since the only reality we know is life, the absolute whole must be life as well: but its life, even as the life we now live, is ineffable.

A superficial observer might well suppose that philosophy has come upon sorry days. It is also the pragmatist's assertion that philosophy is inadequate to life, that reason can not present life in its thickness, its flux, its irrationality, its growing character. But is the aim of metaphysics the transcription of life? If so, metaphysics may as well be thrown into the rubbish heap with the other arts that proposed impossible

problems. Certainly life can not be transcribed in any terms, not even in terms of art, which comes nearest to bodying forth life's intimate soul. Furthermore, life does not need transcribing: that were worthless tautology. Truly, as the author well insists, if one wants to know what life is, he must live it.

But philosophy is not an abortive attempt to take life's photograph or to catch life with a metaphysical kinetophonograph. Even the arts do not pretend to reflect life as it is, but to interpret it. And philosophy is not a transcription of life, but an interpretation of the *meaning* of life; primarily it asks not what is real, but what is the meaning of reality. In Professor Royce's words, metaphysics "is a critical study of the meaning of experience, which it therefore presupposes." Of course, life is more than philosophy, than reason. Of course, also, since philosophy states life's *meaning*, it is frankly and solely intellectualistic. And of course, as a result, philosophy is a mere abstraction from life, though an abstraction justified in and through life. And certainly a philosophic system is static: the meaning of the flux can not itself be a flux. The metaphysician is obliged to say to an author who introduces him to life as it is lived, "Very well, I doubt not that life is all that you say it is, and more; and what we all feel it to be: but what, in the name of philosophic inquiry, is the precise meaning of it all?"

In so far as the author interprets life's meaning in terms of totality, and of a totality teleologically interpreted, he is performing the task of a metaphysician and fulfilling his promise to defend an idealistic version of the real. In so far as he insists that meanings are inarticulate feelings, he is a mystic with such metaphysical rights and comforts as a mystic may possess. But the true value of an enterprise like the author's is to warn men of the futility of trying to incorporate life in a philosophic system, for there are some who seem to suppose that this is philosophy's attempt. That such a warning is worth while does not mean that philosophy fails in its real and traditional task. Nor does it mean that life is larger than reason in the sense that life's meaning, which reason seeks, is larger than reason.

The book rings true with the sincerity of a conviction: one feels in it the intention of a metaphysical gospel for the times. There is much up-to-date scientific and philosophic reference and illustration. The style has all the charm and the regrettable ambiguity of being a mean between literary and philosophic. The dedication is to Josiah Royce, and much that is genuinely articulate and of real metaphysical value is very near the idealism of "The World and the Individual."

UNIVERSITY OF MISSOURI.

JAY WILLIAM HUDSON.

JOURNALS AND NEW BOOKS

THE PHILOSOPHICAL REVIEW. May, 1910. *Spencer's Formula of Evolution* (pp. 241-258): H. S. SHELTON. — The inductive unification is overwhelming, nor is the principle pragmatically barren. It is an admirable, and, within reasonable limits, successful attempt to unify

knowledge. *The Philosophy of Schelling* (pp. 259-275): JAMES LINDSAY. - Schelling is a philosopher who has not come to his own. His philosophy is able to kindle speculative forces anew, to supply weighty thoughts for the realizing of the disunion between pantheism and theism, between science and religion, and to point the way to a better world-view. *The Logical Structure of Self-refuting Systems: I. Phenomenalism* (pp. 276-301): EDWARD GLEASON SPAULDING. - A system refutes external criticism if opposed systems are rendered self-refuting by the use of the contradictions of certain principles which not only presuppose themselves, but which, when used in connection with other principles, make that system itself self-critical. Generic phenomenism and its variants are refuted by that self-critical, self-confirming system which proves to be identical with evolutionary realism. *How Ideas Reach Reality* (pp. 302-318): W. E. HOCKING. - The idea is at the same time an instrument of the self and an instrument of that very reality which it is regarding as its object. *Reviews of Books*: Edward Bradford Titchener, *A Text-book of Psychology, Part I.*: JAMES B. ANGELL. Von Dmitri Michaltschew, *Philosophische Studien*: WARNER FITE. Francis Maugé, *Le Rationalisme comme Hypothèse Methodologique*: W. H. SHELDON. F. M. O'Sullivan, *Old Criticism and New Pragmatism*: G. W. CUNNINGHAM. *Notices of New Books. Summaries of Articles. Notes.*

THE JOURNAL OF ABNORMAL PSYCHOLOGY. April-May, 1910. *Psychogenetic Convulsions* (pp. 1-19): CHARLES D. FOX. - Some important distinctions in origin, symptoms, and treatment between hysteria and psychasthenia, based on clinical observations. "Hysteric manifestations are caused by subconscious association of ideas, while those of psychasthenia usually are caused by conscious association of ideas." *Hysterical Anesthesia* (pp. 19-30): H. LIVENTHAL. - A severe criticism of Janet's hypothesis about this disease, together with an ingenious substitute theory. Hysterical anesthesia is only the abnormal persistence of inattention which occurs at the time of the accident or occasion inducing hysteria. *The Processes Needed to Reorganize the Mental Synthesis in Treating the Neuroses* (pp. 31-32): TOM A. WILLIAMS. - An abstract of Dr. Bellozza's article of this title in the *Revue de Psychiatrie*. *The Theory of the "Complex"* (pp. 32-34): TOM A. WILLIAMS. - An abstract of Wm. A. White's article of same title in the *Interstate Medical Journal*. *Reviews*: E. B. Titchener, *A Text-Book of Psychology*: ELLIOTT P. FROST. C. W. Beers, *A Mind That Found Itself*: ERNEST JONES. Wilhelm Steckel, *Nervous Anxious States and Their Treatment*: M. J. KARPAS. Clara Barus, *Nursing the Insane*: EDWARD B. LANE.

Alexander, Archibald B. D. *The Ethics of St. Paul*. Glasgow: James Maclehose & Sons; New York: The Macmillan Company. 1910. Pp. 24+377. \$2.

Frankland, W. B. *Theories of Parallelism: an Historical Critique*. Cambridge: University Press. 1910. Pp. xviii+70. 3s.

- Rupp, Julius. *Gesammelte Werke*, in 12 Bde. Herausgegeben von Paul Chr. Elsenhaus. Bd. 3. *Ueber Klassiker und Philosophen der Neuzeit*. Leipzig: Fritz Eckardt Verlag. 1910. Pp. xv + 796.
- Sertillanges, A.-D. *St. Thomas d'Aquin*. (Les grands philosophes.) 2 vols. Paris: Felix Alcan. 1910. 12 fr.
- Thorndike, Edward L. *Educational Psychology*. Revised. New York: Teachers College, Columbia University. 1910. Pp. 248. \$1.50.
- Van Peyma, P. W. *The Why of the Will. The Unity of the Universe*. Boston: Sherman, French & Co. 1910. Pp. 66. \$0.80.

NOTES AND NEWS

THE arrangements for Section H (Anthropology) at the forthcoming meeting of the British Association have just been communicated to us. The preliminary programmes of other sections were stated in *Nature* of July 28. In general ethnography, Mr. E. Torday will describe in Section H some of the tribes encountered in his recent exploration of the Congo area; Mr. Meech will deal with the Sok, of whose language he has made a special study during his residence in Africa; Mr. A. K. Newman, of Wellington, New Zealand, will discuss the origin and racial affinities of the Maori; and Miss Fletcher, of Washington, in an important communication, will deal with certain points connected with exogamy. Miss Fletcher will also contribute an account of recent developments in the study of anthropology in American universities. The archaeology of the Mediterranean area will be dealt with by members of the British School at Athens. Dr. T. Ashby, director of the British School at Rome, will describe his excavations at Hagiar Kim and Mnaidra in Malta, and Messrs. Woodward and Ormerod a primitive site in Asia Minor. Prof. W. M. Flinders Petrie will give an account of his excavations at Memphis, and Dr. Seligmann will describe a Neolithic site in the Sudan. An important communication by Prof. Elliot Smith, which summarises the results of ten years' work, will discuss the racial affinities of the Egyptians from the earliest times. Among other archaeological papers may be mentioned an account of the work of the Liverpool Committee for Excavation and Research in Wales, by Prof. R. C. Bosanquet, and a report on recent excavations at Caerwent, by Dr. Ashby; a communication from Mr. H. D. Acland will describe prehistoric monuments in the Scilly Isles, and Mr. Alexander Sutherland will give an account of the exploration of a Broch at Watten, Caithness. Friday, September 3, will be devoted to a joint meeting with Section L (Education), in which intelligence tests in school children will be discussed. Among those who have promised papers written from the special point of view of the anthropological section are Dr. Lippmann, of Berlin, Dr. C. S. Myers, of Cambridge, Mr. W. Brown, of King's College, London, Mr. Burt, of the Liverpool Psychological Laboratory, and Mr. J. Gray. Dr. Kerr, medical officer (education) of the London County Council, Dr. W. H. R. Rivers, and others will take part in the discussion. (*Nature*.)

THE JOURNAL OF PHILOSOPHY

PSYCHOLOGY AND SCIENTIFIC METHODS

THE PASSING OF THE SUPERNATURAL

"I'm a-moving on, sir."—The dying Jo, in "Bleak House."

EXTREMES meet; the lowly human being and the supernatural, the omnipotent spirit of all things.

A short time ago I happened to read a magazine article entitled, "Christianity in the Crucible." The article was made up largely of quotations from many of the writers and teachers of the day and I found myself included with the rest. All by direct quotation were represented as either plainly implying or quite openly predicting a radical change if not even a complete downfall for Christianity, and the author of the article, although often unfair, was obviously and, I think, genuinely solicitous and he was doubtless expressing an anxiety that is wide-spread.

Within an hour after reading "Christianity in the Crucible" I came upon a newspaper paragraph in which one of America's great college presidents was reported as saying that the future religion would do without the supernatural. So not only Christianity was waning or passing, but also already there was talk of a new religion and in the new religion the supernatural was to have no place. What could it all mean? The question was hardly a new one, but as it came to me then it had gained new and peculiar force and it gave a challenge that was not to be put aside and, with apology for so much autobiography, I found myself recalling Dickens's story of poor Jo and seeing in it a deeply significant allegory. Was not the supernatural being rudely told to "move on"? Indeed, was it not even dying and could it not be heard, out of its own great humility, to speak as Jo spoke: "I'm a-moving on, sir"? Not, of course, that the novelist ever thought of such a thing; he was only a great novelist. But somehow extremes do meet, the lowly natural and the supernatural, and at the present time there must be some truth, some deep truth, in all the critical and skeptical reflections on Christianity. Moreover, few men, if any, can honestly deny that in some sense the

supernatural is passing. It is passing, too, under the conditions of pathos and quiet heroism that belong to the humble death. No one, following the books of the day, reading the papers and magazines, attending the churches and the colleges and universities, knowing anything about the current religious mysticism, so evident in the various reactionary movements, or about the often non-religious or even irreligious conceits of certain so-called ethical and socialistic movements, meeting the rich and the poor, the learned and the ignorant, and observing in general how feeble are the established religion's offense and defense, how irreverent, not always but very often, are the criticism and attack against it, how wide-spread is a total indifference to it, and how much truly spiritual living is going on quite without benefit or without any apparent benefit of it—no one, I am sure, can fail to have some feeling for the pathos or some vision of the heroism. "Dead—And dying thus around us every day!" reflects the novelist. Has not the supernatural, perhaps in the person of some God, died pathetically and heroically many times in the past as it is dying to-day?

The passing of the supernatural is no ordinary theme even for philosophy. One has to be bold to discuss it, running large risks; the risk of a language that must be more or less technical; the risk of offensive subtlety; the risk of misunderstanding. But the question as to what it can mean is, as was said, a challenge, having become for the present time a central and a most vital issue, so that no risks can seem too great, if only there be a chance of coming into some light. Why must even the supernatural die? Is Death indeed such a grim reaper that he must take our very Gods and our very religions from us? And, if he must take them, have we anything left to put in their places? Must their going, too, involve so much humiliation? As to the religion of Christianity, must this also—how do the words run?—lose its whole world in order to gain its own soul? These are questions that at the present crisis must be faced.

In a phrase, as truistic as it is heavy with meaning, as commonplace as it is vital and wonderful, death—of a civilization or of a man and possibly also of a God—is "liberation of the spirit." This phrase—or some one of its many equivalents—men use easily, often too easily. It has for them a strange power or charm. It brings comfort for loss; solves the problem of loss; and so gives, both to those who are gone and to those who are left, victory over the death that has brought the loss. Yet, in spite of, if not possibly because of, its peculiar power, men get to use it too glibly. Common things and miraculous things alike have a way of making men glib. But

the power or marvel of that phrase, "liberation of the spirit," calls for explanation. Its meaning must be sought out and, if discovered for the death of a civilization and for the death of a human being, must somehow help to an appreciation of that supreme, however humble, death, even the passing of the supernatural.

Now the spirit which is said to be liberated may be thought of and usually is thought of, if liberated by the death of a man, as a being or substance, a peculiar form of existence, an "entity," opposed to the body, and in this sense it is known as the soul. If liberated by the death of a civilization, it is an ideal meaning, rather than a substance, a matter or a form of thought or belief, opposed to the letter. Thus, the body dies and the soul takes its flight. The letter—the visible, formal life of custom and institution—passes and the invisible spirit is set free. And these two things—I waive for the present a third thing—which the spirit may be, the substance and the ideal meaning, the one individualistic and personal, the other generally humanistic and social, are of course related to each other or involved in each other most intimately, although the condition of their relation or connection can not be easily described. Doubtless they are related as in general any substance or thing and the idea or thought which corresponds to it are related. Are not things or substances always individual? And meanings, or ideas, are not these always social? But, whatever may be the relation and in particular whatever may be the difference between those two applications of the term spirit, they have the following in common, that in either case within its own region whatever dies or passes is particular, relative or partial, being on the one hand personally, on the other socially local and temporal, and what is liberated is universal and whole, being spatially and temporally or geographically and historically unconfined. The question, accordingly, of death or of the liberation of the spirit is in general the question of the relation of part, and whole and with this understanding of it, certainly not at all novel, I would attempt a solution in the following pages.

But a fundamental difficulty appears at once. If wholeness of life or thought, of being or meaning, ever really brings comfort against loss or solves the problem of loss or brings victory over death, it does so quite against what first view suggests. Wholeness is so tyrannical. It seems only to overwhelm and even to deny or betray what is partial; to kill quite dead, if I may speak so, instead of to revive or restore in any way. Again and again personally and socially the brutality of the whole has troubled mankind and death has seemed to have no meaning but that. Yet, to assert and then gradually explain, wholeness, the evidence of which is always in

death's liberation of the spirit, be it wholeness of being, like that of the soul, or wholeness of meaning, like that of the truth or of the principle or spirit, or—let me now say in anticipation—wholeness of possibility, like that of God, is in reality no tyrant, whatever first thought may make it. Brutality to its parts is neither a prerogative nor a bent of anything whole. On the contrary, such brutality can belong only to smallness, not to wholeness. A true whole, in the interest of its own size, must be forever loyal to its own parts, to many of them and to all their differences, not one, not even the least, falling to the ground without its concern. All of which may be hard to see and is, perhaps, something which can not be merely seen. Yet I think I can give it meaning in three ways, that is, in order, as applied to the spirit and the letter, as applied to the soul and the body, and then, in conclusion, as applied to the ever-living God and the dying God or to the supernatural *in toto* and the supernatural *in parte*.

I

Thus, to consider first the spirit as opposed to the letter, from this special point of view I would defend my thesis that the true whole has supreme concern for all its many different parts in the following steps, discussing, to begin with, the mortality of the always partial letter, then the assertion of the spirit, which is the whole, and lastly the spirit's realization only upon restoration or renascence of the mortal letter.

The mortality of the letter is known and fairly well understood by most men. The visible ways of life and thought, the codes and the creeds and the institutions, the prevailing doctrines and rites of all sorts, which at any time constitute the letter, are always at once necessarily local or provincial and necessarily in contact and conflict with an outside world, alien if not barbarian. Indeed, their very development and establishment, their formation or formulation and their crystallization, however outwardly or visibly provincial, are incident to such contact and conflict and so, as is important to add, can never represent all sides of the life and interest of a people. Moreover the conflict which makes them always ends by unmaking or undoing them too, doubtless quite as much because of the unrepresented home life beneath the surface as because of the foreign contact which the conflict implies, and, whatever else this seeming discrepancy may really signify, it has always given color to the notion of the brutality of the whole, suggesting that particular institutions and civilizations are allowed to rise only in order that with a sort of grim, Neronic enjoyment they may be destroyed, or making deeply true the old myth of Mother Earth having offspring only that she

may maintain her own life by devouring them. But, further, all those visible ways of life and thought in the course of time, in the "fullness of time," only anticipating their undoing, become consciously an outer form or dress for life, its spoken letter rather than its reality or its real intent or spirit, and with this change criticism and skepticism succeed the one-time zealous and unquestioning devotion. Simply, the conflict, developing, as it does and must not only both a broader and a deeper view of life or both a more cosmopolitan and a more inwardly personal view of life, but also a broader and a deeper conduct of life, makes the contestants come at the last to out-grow, that is to say, to betray, the very instruments or devices by which they have so far been successful. Indirectly, when not directly and openly, they come to deny the letter, at best treating it only as mere form or convention, as only so much dress, and, when the worst comes, throwing it off altogether. This dress may indeed have been devised in such a way as to be quite ornamental, but in any case it comes to serve for a time as only a useful covering and disguise for the new real life, become only the more conscious and the more zealous and interesting because so well clothed, into which the people have grown. And in due time, as has been suggested, it is cast aside; the letter is brought to the hour of its passing.

Of course, commonly progress and civilization have been thought to depend largely if not wholly on visible form or dress and this common notion, especially manifest in the peculiar conceits of morality and evident also, although with less assertion and not so uncompromisingly, in those other marks of a civilization, art and science and even philosophy, can not be without warrant, but, if the letter or the form pass, as it must, and in particular if it pass for some good purpose, as somehow it must be supposed to do, then, literally and figuratively, interest in the nude, in an unclothed nature, which, although only the temptation of morality, is the license, the always somewhat hesitating license of art, the unblushing candor of science and almost the freedom of philosophy, must also have warrant. At least this: the passing of dress, denial of form or letter, is as natural or essential as its development or assumption. In the way of the myth Mother Earth may produce formal civilizations, but her life does require also—to put it humorously—their disappearance. And what can be the good purpose?

The letter passes and the partial life—partial at least in its formal manifestations—for which the letter has stood seems lost in the whole and in what may still appear as the tyrannical, all-consuming whole. But the story is by no means yet told. As I have come, further, to put the matter to myself, summing up so, not merely cer-

tain depths of personal experience, but also and especially great changes of human history, denial of the letter is coincidentally assertion of the spirit. This is almost if not quite axiomatic. It is even too evident, as some things often are, the light being blinding for a time, to be fully appreciated at once! Special habits of life, special formulations, may have to go, but only to lose them or to dismiss them, since their going must have its cause, is to imply not that they have stood for nothing or served nothing in their day and generation, but that they are become inadequate to just that which they were serving, and so that theirs was, while it lasted, a real service. The original end, then, remains, although the means, at least so far as thought to possess any sanctity or intrinsic worth, be rejected, and the original end remains, too, with a more insistent reality and an enhanced, more comprehensive meaning just because of the rejected means to it. This surviving end, however, is the spirit. May I call it, coining my own adjective, the superliteral spirit?

Historically the institutions of a certain age and people, the state and the church, the organized industry and the morality, may be quite outgrown and, being outgrown, may crumble, but never has their crumbling, although no single stone was left upon another, been without some far but confident vision of a new kingdom expressing adequately what they had ceased to express so, and such confident vision shows assertion of the spirit. The spirit is indeed superior to the letter. The spirit is always adequate. Anarchy has destroyed governments, but never government; license, morals, but never morality; doubt, doctrines, but never truth; heresy and profanity, religions, but never religion. Can one ever deny the particular without asserting the general? If this petty creature which man has constantly found himself, thanks to his visible civilization, thanks to his partial and faulty devices of all sorts, truly is no man, still there is humanity large and whole and vital. Let the petty creature pass, then; the spirit, the human spirit, which is but the natural man or the perfect wholeness of humanity, gets only more, not less, reality, as the pettiness goes. It gets the opened opportunity and so in very truth the reality of a larger life; of a life that is real and is larger in its opportunity just because it has been freed from what had become confining and artificial to it. So the letter passes and we would let it pass. The spirit remains, real and assertive; it remains deep and full in its reality, free with its wide opportunity, unclothed and unrestrained in its splendid vigor.

Assertion of the spirit, always accompanying the passing of the letter, brings extreme license. Nothing is so spiritual, abstractly spiritual, spiritual in the sense of escape from the letter, spiritual

in opportunity as distinct from realization, as license. Let the spirit be asserted, the letter passing, and all the deepest forces of nature are released anew. Not only physical nature will seem to be in riot as never before, but also human nature in its most primitive passions, which though commonly thought so are not merely brutish, will be seen to move forward to acts of violence. Violence, it should be remembered, is the reformer's as well as the transgressor's. Violence is the work of the spirit which can know no law. It is as pure as it may be sensuous. Destruction and reconstruction, sin and righteousness, death and resurrection, monstrosity and miracle, are always the timely witnesses to the superliteral spirit's license and violence. How true it is that the great advances in human history, usually if not always personally led, although why may not yet appear, have come or have begun in years of wide-spread lawlessness, when, the law or the letter having passed, the forces of man and nature have been loose and wild. The free spirit seems to have moved abroad only in storm and lightning. Small wonder that men have worshipped the Hurler of Thunderbolts.

But, although, the letter passing, the spirit comes thus unrestrained and licentious, the passing of the one and the mere coming of the other are not all. The assertive spirit has a yet larger freedom or a yet larger reality than that of license. It gets its full liberation and realization only as it takes the rejected letter, the petty human with its imperfect government, stilted morality, false or only half-true doctrine, conceits of religion and all else, however small and however mortal, back. The rejection made for breadth and depth of life, for universality, by casting down the barriers of particular experience of time and place and people, but the recall makes for reality, for definiteness and embodiment. Above all, as I must insist, the recall also makes for still greater breadth and depth. The spirit, however universal in assertion, is not universal in achievement or in reality, until it has become broad enough actually to restore just that from which in its first license it had stood aloof. So, again, the recall of the letter makes for reality, changing the license of the spirit into a substantial freedom and the opened opportunity into specific accomplishment and—the important addition—the dead and rejected letter into a new-born and a glorified instrument.

Witness how Christendom, built on the ruins of paganism and built certainly not in a day, has become what it is only through a gradual recall of paganism. We read and hear most, it is true, of the Renaissance, that wonderful rebirth of pagan antiquity in the fourteenth to sixteenth centuries, but antiquity has had a much longer revival than that. Its revival, to say the least as long a

process as its original becoming, began at the very moment of its passing, whenever that was, and in significant stages has been continuing ever since. In the fourteenth to sixteenth centuries there was indeed a recall of ancient learning and literature and art, but were the militarism and legalism that came before and have the industrialism and science coming since been any less truly revivals of antiquity? Who can not see, too, in Augustinianism, the new Jews, I mean the Christian Romans, only reviving once more the idolatrous ways of their forerunners, and in Protestantism only an effort on their part, one of them in fact being the excommunicated Jew Spinoza, once more to worship the true God, a spirit, in spirit and in truth? So the letter of paganism passed and there was indeed, historically notable, a magnificent release of the licentious spirit; but from the very beginning, not only in two or three tardy centuries, that spirit, so free in a world of large opportunity, has been realizing itself only by its crusades, made not less for conquest and treasure, first with one interest and then with another and another always more advanced, than for inspiration, into the east and the past, and by each time discovering, ever with richer meaning, that what had seemed a sepulchre was in reality no more and no less than a wonderful birthplace, the place of a wonder, that is, if possible, greater than that of birth, the place of rebirth.

The letter passes; the spirit comes in its power and license; and the spirit gradually recalls the letter, reviving it, transfiguring all its lines, as fuller meaning always transfigures recalled fact. Growth certainly implies outgrowth, but man never has outgrown anything fully until he has grown back into it or has brought it up into the reality of his new life, finding that what his new life is he really meant before and so that his old ways must, after all, be capable of present translation and *use*.

Use—this is what resurrects. In this one word is told the whole story of Christendom's revival of antiquity. From being in its own time immediate and literal, from being cherished by the people of its time for its own sake, paganism has been made mediate and spiritual. As if with a retracing of its development, first its law and its various tactics of organization, then its art and its science have been used. The great work, in a word, of the liberated spirit has been use of the rejected letter, the rejection being only a necessary preparation before the use could be free and unhampered. In short, whenever in small ways or in large ways, in the simple changes of ordinary life or in so great a thing as the relation of antiquity to Christendom, institutes, that is, the immediately valued and cherished conditions of life, are seen to have become instruments, that is, the freely and

consciously employed means of life, there is clearest evidence of the work of the spirit.

But use, I am reminded, is an unworthy interest, savoring of utilitarianism and commercialism. As the prevailing interest or the more conspicuous interest of a people at any time in its own customs and traditions, use is taken as a sign of decline and so as anything but ideal or spiritual, being rather a symptom of low naturalism. This objection is not without point, but, aside from the fact that contemporaneously with commercialism there is always an assertive although somewhat abstract or unworldly idealism, a great difference is to be noted between a particular people treating its own organized life with all the accumulated treasures of it as only useful, and the use of the life and its treasures by another people or a later generation. The former, taken by itself, does suggest decline, impiety, general irreverence, and selfishness in place of the earlier loyalties to the organized life and, because it implies also an interest on the part of the selfish individuals in keeping intact the standing organization, being selfishly conservative, it has long suggested to me the life and attitude of the miser. Certainly there is no real or free use, but rather hoarding than use. But the latter shows real use. Real use calls for sacrifice of immediate values, for heroic disregard of the treasure's ring and glitter, or for rejection of the means as anything but means, and this is to say that in the history of civilization it has required in preparation and prophecy the martyrdom of great heroic individuals and in fulfillment the surrender and captivity of the people and the sacking and pillaging of their cities. Thus only through the foreigner, that is, vicariously, can real use be accomplished, and only in this sense is use the work of the spirit, humanity, not a single people, being the user as well as also—for so we must certainly think—the real producer. The spirit, then, which is the whole, works through death, through the passing of the letter and even the passing of the people, but in using it translates and gradually resurrects what has passed.

And one thing more must be said with regard to the spirit's being realized only upon recall and real use of the letter. Emphatically the recall and use are more than just fictitiously or ideally true. The use shows the letter still real, as real as the spirit; the means as real as the end. The revived petty and partial life of the past is transfigured in the full sense that it gets the reality, present and substantial, of the whole which, using it, has become so identified with it. To repeat from above, a true whole, in the interests of its own size, must be forever loyal to all its parts, not even the least passing without its concern. The partial past, in other words, as it is transfigured, can lose no whit of its original individuality. In

fact, both as having a place in history or memory and as being vitally and concretely an instrument of the present, it is made more, not less, individual by the change. Greek life and thought, for example, Hebrew aspiration and the Hebrew or Christian vision, Roman government and Roman law, are more distinctly individual, both in history and in the life and consciousness of to-day, than ever before. Mother Earth may have devoured, but she certainly has not lost, her offspring. The partial past in the use of the whole is the past or the part still real and the whole manifestly still insistent on its size.

But a difficulty of much significance must now be considered. While we have been absorbed in the part, the letter, and its renaissance without loss of individuality, we have been assuming what perhaps we had no right to assume, namely, the reality and integrity of the whole. But surely appearances are as much against a real unity or wholeness in human history as they are against the persistence of parts or individuals; parts may seem either to pass altogether or at best to be hopelessly merged into the whole, yet with as much truth that whole is a good deal of a fiction, for it is no more evident than the lost parts; and while in an effort to discredit the imagined tyranny of the whole there must be some advantage in being able to say on the score of what appears that parts and whole, if real, are only equally so, that the whole is, after all, no more real than any of its parts, such an advantage affords only uncertain comfort. As to the evidence of wholeness, of course men do talk boldly of humanity, of human nature, of history, of the human spirit, and so on, and one would think, to hear them, as one would think, reading what so far has been written here, that although invisible or intangible there somehow really and truly is such a whole. Yet, to refer only to something that has been insisted upon here, what positive right has any one to talk sententiously of the whole's loyalty to its parts? Can humanity or the spirit, either at any one time or in its so-called history, be anything more than an aggregation of loose, independent episodes, the Babylonian episode, perhaps, the Egyptian, the Roman, the American, and so forth? *Apparently* there is no solidifying unity; no historical continuity, and no singleness of purpose, no really solidifying plot! No whole, then; no real spirit to use the letter! At least, none, so far as the actual findings go! But—and here is a way out of the difficulty that may save both whole and part—not even the absence of evidence and of course not an insufficiency of evidence can ever be fairly taken as negative evidence. While not positively certain, then, on the evidence, even while, as some might insist, very uncertain, there still is *possible* the reality of a whole. Moreover, if emphasis be put on the fact of insufficient evidence, or of the lack of evidence to such an extent as to

declare that complete evidence never will be secured, then that possible whole, if it be, must be infinite. But such a whole, that is, an infinite whole, is necessarily made up of different parts, of changing parts, and of parts that, though changing, still always persist. Anything less than this would make the whole, not infinite, but finite. Accordingly, not only may there be a whole, and that possible whole would be infinite, but also the infinite whole is as real as the different, changing, and yet persisting things or parts; in history the spirit is as real as the letter that takes special form, that passes, and that is reborn.

All of which, besides meeting the difficulty that was proposed, adds meaning to the mortality of the letter, the assertion of the spirit and the spirit's realization only upon restoration or renaissance of the mortal letter, and affords a fitting conclusion to this section of the present discussion. There can be no loss of the part; no tyranny of the whole. Only a small whole, which can never be the whole, will be or can be tyrannical over parts.

In the relation of letter and spirit the many is thus as real as the one; is, indeed, the large and living reality of the one.

II

And now, so much being evident in the relation of letter and spirit, what is to be said of the body and the soul?

Here instead of dealing with the distinction between part and whole in the field or on the plane of meanings, we are concerned, as will be recalled from above, with the distinction between substances. Body and soul exist, or are thought to exist, as substances, while meanings, whether as the letter which is the visible, or the spirit which is the invisible institution, do not have or are not commonly thought to have substantial existence. Meanings, moreover, are related to substances very much as qualities to things, and this is equivalent to asserting that the very distinction between meaning and substance is itself only one more case of that between part and whole. As a quality is only partial, not total, to the thing to which it is referred, so meaning is only partial to substance, and, recognizing this, we find ourselves plunged into what may appear to be a hopelessly intricate situation. Letter and spirit as meanings, body and soul as substances, and meaning and substance as realities, are all cases, each pair of course in its own way, of part and whole. What can one do with such a tangle?

But truly there is no tangle or at least there is only the tangle of one's own making. Any region or any category, such as meaning or substance or even such as reality or possibility, may have its own parts and whole and yet itself be only partial or total to some other

region or category.¹ It may even prove here that substance, although larger than meaning, is in its turn only a part of some still more comprehensive whole.

So, as to those two substances, bodies and souls, and as to their relation to the two meanings, the letter and the spirit, of course the former constitute the personnel of the latter; bodies, of the letter or the visible institution, and souls, of the invisible spirit; and with this view the present problem in its first important aspect is nothing more nor less than that of the relation of the personal or individual to the region of meaning or institution, visible or invisible, or say, in lack of a better single term, to the humanistic. How, then, is there warrant for thinking of this relation as one of whole and part?

To imply that the institutional is partial and the personal whole, seems like a hopeless contradiction of most obvious facts, but such *elemental* parts as persons, whether in their character of bodies or in that of souls, are really larger than the whole in which formally they appear as parts. All true elements are only so many *maxima in minimis*. The aggregate wholes in which they appear as component parts are, in all that makes for reality, smaller than the parts themselves. The molecular, for example, is so related to the atomic, and the institutional to the personal or individual. Specifically the individual's body, belonging as it does organically and primarily to the physical or natural world, from which all the positive manifestations or media of social human life, all things in short constituting the letter or language of life at any time, have their origin and to which, having served their time and generation, they must all return, is plainly nothing less than the letter's whole. Is not the body more than its dress or than its outward form under any name? And, in like manner, is not the soul more than the spirit?

As body or as soul the individual or person is thus the including, not the included, being. At least he is this relatively to the letter or the spirit. He is whole; is world-wide or nature-wide or even reality-wide. Again, as compared with the social or institutional, he is no local or temporal creature, but is man always and everywhere, the same here and there, now and then. He can move or travel without meeting anything foreign; he can think or will freely; whereas, to speak strictly, the creature of the institution may do none of these things. And, to come now to what specially concerns us here, the

¹ Also I would add that not even this distinction of part and whole in any of its many cases can escape the character of reversibility which belongs to other fundamental distinctions. Infinite and finite, good and evil, reality and unreality, cause and effect, are all reversible distinctions. In each pair either term can have the value of the other, and part and whole offer no exception to the rule. This fact, however, is only a result of the distinction; it does not destroy or impair the distinction.

person lives and dies as the creature of the institution does not and may not. There are, indeed, as many deaths as natures or kinds of being, and as many lives. There are the life and the death of the letter and of the spirit and the life and the death of the body and even of the soul, and each has its own quality.

Thus, whatever must be said of the soul relatively to the spirit, the body in comparison with the letter or institution lives for shorter time and dies more suddenly and more tragically, being lost apparently more hopelessly in a whole that is larger and more brutal. The body dies after only a few years; not, like the letter, after several centuries. Also for every society or civilization, for every letter or regime, that passes, thousands upon thousands of individuals live their few years on earth and then die. So is death ever near in human life and above all both very frequent and very personal. But a question, still without thought of the soul: Why should this be? Is not the body larger than the letter? Should it not live longer?

As very often happens, what seems *contra* is really *pro*. Thus, in point of fact, the larger and more vital or primary the whole, the more numerous its different parts and also the greater their mortality or their so-called mortality. Simply, as already said, a large whole must have many parts, different parts and changing parts *and a larger whole must be larger in all of these respects*. Thus atoms, if really elemental, if the very parts of the very universe, should be not only countless in number, but also instantaneous or electric in their life and death, their death and life. Doubtless a fantastic suggestion, but, I think, after all, not impertinent. And as such ultimate parts must live and die, die and live again, at once, as if the "vital units" of the universe, so our human persons, parts in their way of a very comprehensive whole, must die after short life and must die tragically. The more life there is, the more death must there be. When a person passes, so much more dies than when a civilization falls, and only because so much more might live, or even because, deeply and vitally and wholly, so much more is living. The body passes, then, but the soul, which is the larger whole, is set free and the soul is greater by far even than the spirit released with the fall of a civilization.

But here appears the second phase of the present problem. Body and soul, like letter and spirit, are part and whole. Of the letter and the spirit we have seen how, the letter passing, the spirit was set free and how the spirit was realized only with restoration of the letter. Are we, then, warranted in saying, analogously, that, the body passing, the soul is set free and that the soul is realized only with the restoration of the body? I think we are, although, saying this, I shall certainly be misunderstood by some whether for criticism

or for approval. No whole can forget its parts. A renaissance of so much of the personal as has passed is as certain as that renaissance in the history of institutions. But herein is no thought of open graves, bodily resurrections, reincarnations, or chattering spirits. Transmigration, too, is not intended, nor is translation or even transmutation meant. These may all possess a certain symbolic value, but not one of them can be adequate to the reality. Indeed, nothing expressible can be adequate to the reality and, true as this is in the death and rebirth of the letter, it is far more deeply true in the death and rebirth of the body. If one's bodily nature were only the definite body that one clothes for a time and that after a time is buried or—better still—burned, then its renaissance would have to be in the form of some literal bodily appearance and the soul also would be thought of as detached at death, but the hypothesis, under which so many actually do their thinking and their believing, is false and of course as seriously misleading as false. One's bodily nature even in one's so-called earthly lifetime is always transcendently more than the body that just lives and dies, and the death, when it comes, instead of being a betrayal of that nature, is only an evidence of it and of its transcendent fullness or wholeness. To return, then, although the manner of the renaissance may not be determined, and, in particular, although the renaissance can hardly imply bodily resurrection or warrant—except as so much symbolism—any of the various ideas or practises, relative either to the body or the detachable soul, which have been so wide-spread among men, still the fact of renaissance remains unaffected. *It remains as firmly established as wholeness and the necessary loyalty of wholeness to parts.*

III

But primarily the interest of this essay was not in human immortality. Both the passing of the letter with the liberation of the spirit and the death of the body with the release of the soul were involved here only as aids to an understanding of the passing of the supernatural. What, then, is one to understand by the supernatural? And by its passing?

Of course many will say that the soul as opposed to the body or even that the spirit as opposed to the letter partakes of the supernatural. This is quite true, but besides being a more general term than either soul or spirit the supernatural is also peculiarly theological in its reference. These considerations aside, however, the supernatural has commonly signified a being and a power, as well as a region and a substance, quite apart from and wholly unlike the natural. The natural and the supernatural have been two separate and different things. In place, then, of this dualistic and on the

whole medieval view, following a line of thought already indicated here several times, I would suggest that the term supernatural, instead of referring to anything separate and different, only names a region or a nature larger than that of anything positively or definitely real or existent. It names, in a word, the wide region, as deep as it is wide, of possibility. Substantial existence or positive reality of any sort is small when compared with possibility, and the so-called Absolute, the true whole, certainly can not be smaller than anything. From beginning to end, it should be observed, the argument of this paper calls for size, for a true whole, and, as now asserted, the true whole, that is, the "supernatural," is not the actual or the positively or definitely real; it is not defined meaning or existing substance; it is the all-possible or the omnipotent. Were I asked, for example, if God existed, understanding by God that in which all things have been and are and are to be, and wishing also to give him distinctive character, I should have to answer negatively, just as I should answer, when asked if he were a person, that he was not. God is superpersonal. He is also more than existent. He is the possible—the possible that eternally challenges man's will as neither meaning nor existence ever can.²

In the large supernatural region of possibility, furthermore, the difference between part and whole is best recounted, I think, in the following way: on the one hand, accepted and asserted possibility, the possible as an object of positive belief, and, on the other hand, true or indeterminate possibility, the possible as wide and free, as only or purely possible. Conspicuously representing the former, then, that is, the part, in the region of meaning or institution we have the Church; in the region of substance, as intimated above, the soul; and in the still larger region of possibility itself the worshipped and, as must also be said, the mortal God or the mortal supernatural. In the sense and only in the sense which these witness determine can the supernatural be said to pass. Only in this

² Yet negative answers must ever be misleading, for almost certainly they will be taken absolutely when always they should be taken only contextually or relatively. Thus neither the impersonal nor the non-existent character of God can be anything but negative in regard to certain presupposed ideas of personality or of existence. Thus, as to personality, God is personal, yet *not* as any known person is so; and as to possibility, this exists, yet *not* as positive reality exists. Perhaps modern thought has made no greater gain than its recognition and appreciation, so much clearer and fuller than ever before, of the relativity even of its one-time supposedly absolute terms. Certainly personality is not a univocal term, nor is existence or reality, or space or time or causality. "Many men, many minds" is an old adage now grown into its largest truth: "Many existences, many meanings." All things exist, yet also do not exist; for no two things exist in the same way. God, the whole, does not exist as any part exists.

sense can the religion of the future be a religion that is to do without the supernatural. As for the whole, this lies beyond positive assertion and belief and the religion which does without the supernatural of positive belief only enters the region of the whole, the region of unbounded possibility, of the supernatural *par excellence*. The part may pass only in the life of the whole.

And in this third instance the passing of the part, besides having its analogies to what the other two instances of the letter and the spirit and of the body and the soul have already shown, needs to be examined and appraised for certain special characters incident to its peculiar region of possibility. Two of these characters I would consider here with some care. Thus, for the first, if the supernatural *in parte* be the possible as accepted and asserted, then its passing should imply some manifest realization, and, for the second, if the supernatural *in toto* be the possible as only possible, then that manifest realization should bring with it, in place of the abstract and other-world supernaturalism of assertion and belief, a more practical and more dynamic view in accord with which the widely and freely possible would be regarded as immediately present in the real, the supernatural as immanent in the natural. An indwelling possible is always so much larger than a possible that is defined and assertively isolated and hypostatized. Nature contains so much more than Heaven. Heaven is, but Nature grows.

Now, to consider the first, the realization or accomplishment which should be involved in the passing of the supernatural *in parte*, a fact, referred to near the beginning of this paper and having relation to positive events of the day, may be recalled, for it is most suggestive. Thus reference was made to the spiritual living, spiritual, at least by implication, under Christian tests, which in large measure is now going on without benefit of the Christian Church. The Church itself has frequently complained of the indifference or the independence so evinced, but what can be the meaning of it all if not that Christianity's ideals have found some positive realization? Some would doubtless use another word, secularization, and would feel disturbed over so offensive a term, but why take offense at what one should deeply and heartily approve? Should the Church allow itself for a single moment to be open to the charge of jealousy or selfishness? Does the Church, of all enterprises, wish to maintain a monopoly, a protected monopoly of Christian work? Any parent must learn to be glad, not resentful, at the final independence of the child which for years has been under his fostering care, and the Church has been for centuries *in loco parentis*. In brief the secularization of the Christian life through all the means that improve social and hygienic

conditions, that harmonize reason and faith, that make honesty in thought and life as real and practical, that is, as politic, as it has been ideal, and that bind men in all parts of the world together, should insure to what some would call a dying Christianity at least euthanasia or, as I myself would rather put it, a renewal of life, a true resurrection. Christianity may be passing, the "spiritual" in the life of the Church giving place to the "secular," the ecclesiastical to the naturally practical, but, although Christianity be quite dead, long life to Christianity! Long live the new Christianity that must succeed to the dead or dying ruler's throne.

And, if man's Church, as a supernatural institution, is dying from secularization or realization, so also is his soul. If his spiritual life is become the practical life conducted without benefit of the Church, so also personally is he become only—but some *only's* enlarge rather than reduce—a natural being. There is now no spiritual but the natural person. Yet, losing his soul and, of course, losing his former anxiety to insure his soul's salvation, man finds gain instead of loss, attainment instead of failure. That hope for spiritual salvation, made to depend on worldly sacrifices, was always such a selfish thing, morbid and narrow. It was so selfish that it greatly limited opportunity, being quite like conservative investment as opposed to downright giving, or like a merely commercial transaction as opposed to unhampered philanthropy. Truly a man must lose not merely his whole world in order to save his soul, but also even his unworldly soul in order to realize or open up all the possibilities of his whole self. And exactly this latter loss with that large gain is what the present passing of the supernatural soul implies.

But, besides the fallen or falling Church and the passing or lost soul, there is also—if I may recall a phrase reported by Max Müller—the "dead and decrepit" God. Forbidding phrases these, all of them: the fallen Church; the lost soul; the decrepit God. They do indeed suggest the crucible for Christianity. Modern Christendom would appear to be living through the same deep experience that came, as we are told, to the faithful followers of Jesus at the time of his death. The God is dying once more, and dying in great humility, too, for only a few of the faithful seem to care. Large bodies of Christians are almost if not quite indifferent, and although a few are become "reactionary," as if seeking to blind themselves to the change or the loss with a return to rites and symbols, still in their very mysticism and subjectivism, in their superiority to all the evidence, there is a virtual indifference. Others, too, who are not Christians or are not formally Christians, often become offensive and abusive, as if the dying God's humiliation must be made as great as

possible. So, again, the God is dying and dying humbly, and, while I would avoid even any suspicion of cant or of religiosity, I can not help saying that the lesson to-day must be essentially the same as that of something over nineteen hundred years ago. The God dies when his ministrations are finished, and dying leaves his work and so his own continued life to those who have been his followers, his death meaning only larger possibility. So long as he lived, they worshipped and trusted; with his death, they are constrained or free—which should we say?—to work, their work being his resurrection.

So the supernatural is passing and the religion of the future must do without it, but also the supernatural still lives, being reborn in the human and natural. The supernatural is become immanent in the natural and is inspiring or animating the natural with unlimited freedom and possibility. This, however, suggests the second special result of the passing of the supernatural that was to be considered here, namely, the more dynamic view, immediately realistic and practical, which, as was said, would supplant a prevailing abstract other-worldism.

Finally, then, it has certainly been a matter of general remark that the decline of supernaturalism, now so near its limit, has been coincident with the rise of naturalism, but appreciation of the ever-changing quality of the naturalism has been lagging. There is much significance, for example, in the fact that since the rationalistic regard of nature arose she has been viewed mechanicalistically in the seventeenth and eighteenth centuries, but biologically in the nineteenth, while still more recently the view has been psychological. Motion and force at first, then life, she is now fast becoming real only as experience, and with these changes the power outside of nature, the supernatural, has been ever more and more a figurehead, a name without substance, until to-day it is even disappearing altogether. This rise of naturalism, also, has involved a gradual change from a merely cognitional, formally intellectual attitude towards nature, nature being regarded quite objectively or impersonally, being treated even as having an existence quite independent of her observer, to what is distinctly an intimately personal and volitional attitude; for, although as motion or as force or even as evolving life, she could be treated and properly would be treated as objective, as experience she can be real only in and through the attention and will of the experiencing subject. Unfortunately, however, the empiricism, representing the more recent psychological point of view, in accord with which nature is declared to be real only as experience, has often been misinterpreted, and simply because its historical relations are overlooked. An empiricism that is the last term in a certain developing series,

that finally identifies nature with experience only after mathematics and mechanics and biology from their more or less objective viewpoints have told what nature is and what man's relation to nature is or only after theories of knowledge, considerately and sympathetically following the changing regard of nature, have told what the observing subject is and what nature's relation to the subject is, can hardly be the simple-minded, unsophisticated ism that some have insisted on making it or supposing it. Its "experience" must really enjoy—whether in the colloquial or in the real meaning of the word—all that its forerunners have lived through, all the wisdom, all the objectivism, all the logic, and above all, all the universalism and transcendentalism, that they have contributed, and to overlook this, to make its "experience" naïve and immediate instead of sophisticated and immediate, or, as some would use the term, intuitive, is like supposing that there is no difference at all between the simplicity of real childhood and the simplicity of a noble maturity. A great many people have persistently misunderstood the scriptural idea of childhood as a condition of entrance into the kingdom, but I find it easier to forgive them than to forgive those who, although possessing, or being properly supposed to possess, a real knowledge of the history and development of science and philosophy, have nevertheless taken the current empiricism as meaning the naïve and immediate realism of a child. It must surely mean anything but that. To any one who knows its forerunners, who appreciates the development of the series of which it is the present and in this sense the last term, the change of view, the transition from the mechanicalistic to the psychological standpoint, can make this current empiricism mean only a realism that is quite as transcendental and supernaturalistic as it is realistic or—it were perhaps even better to say—that is dynamically immediate and realistic, not just passively or statically so. Truly, with its rise or with the rise of the latest naturalism of which it gives report, the supernatural has passed, but just as truly the supernatural has been reborn immediately in nature. The supernatural *in parte* has passed that the supernatural *in toto* might once more be set free in man's present life or—with the same meaning—that nature, so much larger than Heaven or than any "other world"—might come into her full inheritance. Of course, biological evolution has long been very near to making nature her own superior, the very principle of her life and its changes being regarded as her own, but the recent psychological or epistemological realism, identifying reality and experience and placing action above form, that is, grounding everything in action or will, has fulfilled what the biologists only began. Nature is now freely her own superior, there being no being

or power external to her, and man, now more truly one with nature than ever before, is both man and superman.³

Perhaps, to conclude, the key-word which, if a single word can, will unlock the mystery or uncertainty that may still attach to the foregoing contentions about the present-day naturalism or empiricism and about the death and the rebirth of the supernatural, is the word *will*. Instead, therefore, of concluding this paper with a careful summary, for which I have to hope there is really no need or with a formal peroration, to which I feel no inclination, I will speak very briefly of will, adding as I can to what more or less casually has already been said here about it.

Thus, in the first place, to speak more popularly than technically, there is no true will without uncertainty of result or without what is commonly known as adventure. Also there is no true will without physique. By physique I mean close contact with the actual and concrete. Will is practical as well as adventurous. Intellectually it is informed or enlightened, not merely speculative; emotionally, sane and self-controlled, not sentimental; and actively or morally, responsible and substantial, not just "good." Will, then, characteristically, in human experience marks the union of the actual, the immediately real, and the uncertain but possible, and just because of this, its essential character, I have chosen it as a key-word. Its own native character is at once realistic and transcendental, naturalistic and supernaturalistic.

But, in the second place, what was said of experience, as a term nowadays in use, is also to be said of will. Will, like experience or rather with and in and of experience, is historical. The history which has gone before must determine just what it is now informed with and in reference to what it is sane and self-controlled and for what or with what it is responsible and substantial. True, the professional psychologist or epistemologist, working abstractly or scholastically in the confines of his laboratory or his study, is very likely to forget that the will, or that the experience, which he is examining, is in reality a matter of positive history, and that his work, although usually so much more accurate and painstaking and so much more scientific and intellectual than that of the type with which I would now compare him, is, after all, only the work of an up-to-date reporter. But, however forgetful the abstractly scientific reporter may be and however useful to successful investigation his abstraction may be, his work is reportorial. At times, too, it is also editorial, his disposition often being to interpret and appraise as well as to report.

³ Compare a somewhat different statement of the same idea in a recent article: "The Possible Idealism of a Pluralist," *American Journal of Theology*, July, 1910, especially p. 420.

So, such being the real import of professional study and theory, the present-day will and experience are not without—if not literally, at least figuratively—the value of proper names, referring as they must, in spite of their theoretical dress and the absence of the initial capitals, to an individual of time and place, that is, to specific present-day conditions. In fine, history, so say our up-to-date reporters, telling us as they do of immediate realism and naturalism and of the passing of the supernatural and identifying reality with experience and in their account of experience exalting action above form—history has brought mankind or at least some large portion of mankind, say Christendom, to whose life the reporters consciously belong, to an era of will.

And so, in the third place, all the signs of the time would appear to point to an era of great men. Only great men can make those seemingly common nouns of the day, experience and will, the proper names, initial capitals and all, which sooner or later history is bound to have them.

The rôle of the prophet is not one to be lightly assumed, but on this closing page I must say, for just such reasons as I have been trying to present, that the humble passing of the supernatural seems to me to mean the realized opportunity in the life of Christendom for real and great achievement, for some new exploitation of the region of possibility, and if the nearer future, perhaps only a generation or two away, does not bring some great leaders, great, I mean, to Christendom, not merely locally or nationally great, then my present logic, not to say also my present discretion, will simply prove to have been at fault.

ALFRED H. LLOYD.

UNIVERSITY OF MICHIGAN.

DISCUSSION

THE SHORT-CUT TO REALISM EXAMINED

MANY, who do not wish to enroll themselves in a school of realism, sympathize with the desire for more cooperation and greater consensus among philosophers expressed in the "Platform of Six Realists."¹ A threshing out of problems is, however, necessary to a consensus, and criticism is one mode of cooperation. It may facilitate understanding the remarks that follow if I say that so far as realism means anti-idealism, I agree with it, especially in its contention that it is a parallogism to argue that because things

¹ This JOURNAL, Vol. VIII., No. 15. 373

must be known before we can discuss knowledge of them, things must themselves always be known (or in relation to mind); and, indeed, with its contention that knowledge always implies existences prior to and independent of their being known.

But realism claims to be a positive 'ism on its own account, and here I can not follow it; or, at least, I am in great doubt about a principle upon which some of the realists implicitly rely in formulating their positive contribution. I refer to the doctrine of "external relations."² To attempt to derive conclusions regarding existence from analysis and manipulation of a concept seems to me to savor more of old-fashioned rationalism than of realism—unless it be Platonic-medieval realism. And, as so often happens in rationalistic procedure, the concept is itself a hotbed of ambiguities. There is a basic ambiguity between the application of the concept to (I.) *terms* and (II.) *existences*; and there are minor ambiguities whichever alternative be accepted.

I. The doctrine seemingly refers to the relation which terms in a proposition hold to each other. Is it, however, denotative or connotative in scope? That is to say, does it mean that the logical content of a term is not modified when it enters into relation with some other logical content—the connotative aspect? Or, does it mean that an existence to which logical contents refer is unmodified by such reference—the denotative aspect?

1. If the former, we must certainly distinguish. There is a difference between knowing as an active process and knowledge as a finished result. (a) Where knowledge is assumed to be achieved, it is undoubtedly true that the meaning—or content—of the terms of a proposition are not affected by the relation in which they stand. Any other doctrine is suicidal, since it sets up an infinite regress which is not only inherently futile, but which openly contradicts the assumption that knowledge has been achieved. It is not easy, however, to see the bearing of this truth—which appears to be simply a formulation of the logical canon of identity—upon realism. Any philosophic system can safely admit it. The proposition, for example, that existences undergo change because of knowing them is quite compatible with it; the terms "existence," "knowing" and the relation "undergo change" each has its own fixed, independent, and unaltered meaning in the proposition. (b) If the doctrine means that contents do not undergo change in knowing taken as an active process of inquiry, it is obviously false. The meaning of a term—mammal, species, metal, orchid, circle—is quite different at

² It should be understood that my criticisms are not made in behalf of the "internal" theory. I suspect that concept is subject to the same ambiguities that I shall point out in the "external" theory, and in any case I do not understand the theory.

the end and at the beginning of scientific reflection. Now the realist in ignoring the distinction between knowing, between active thinking or investigating, and achieved knowledge ignores also the problems of doubt, hypothesis, and error. He wins an easy victory because he assumes a completed ideal without telling by what criterion he distinguishes between the static ideal of possessed knowledge in which meanings do not undergo change, and the active process of getting knowledge, where meanings are continuously modified by the new relations into which they enter.³

2. In its denotative aspect, the theory means that the existence known does not change in being referred to by a proposition. This is undoubtedly axiomatic in the sense that we can not swap horses in midstream. We can not begin by referring to cows and then abruptly change our reference to horses. This truth is, however, quite compatible (as just pointed out) with a change of meaning in the existence referred to, because it has become a subject of knowing. It is, moreover, consistent with alteration of the existence itself through knowing, as well as with the doctrine that the purpose of knowing is to effect some alteration. Any other conception implies that *any* change is fatal to the identity of a thing. And I do not take it that the realists wish to commit us irretrievably to Eleaticism, whether of the monistic or the atomistic type. More specifically, if knowing a thing is a factor in the normal process of a thing under certain conditions of that thing, then for that thing to undergo change in knowing is as consistent with its retaining its own identity as the growth of a plant is compatible with its maintaining its integrity as a plant. Interpreted denotatively, then, the "external" theory comes perilously close to maintaining that knowing is accidental or supernatural, not a normal incident in the history of existences.⁴

II. 1. This matter of reference to existence brings us to what, after all, is the fundamental ambiguity in the theory of "external relations." (a) Is it a doctrine of the relation sustained by *terms* in a proposition? If so, what is the warrant for transferring it over to the quite different matter of the relation of the proposition (in its content and intent) to *existences*? Does the realist assume that to

³ This alteration *may* be mainly by addition, but it assuredly also involves *some* qualitative reconstruction. Only each specific case of inquiry reveals the ratio of addition and transformation to each other—there is no general theory which decides.

⁴ While I wish to stick as closely as possible to the logical analysis of the concept of external relations, I can not refrain from pointing out that the only sure way of getting knowledge of existences—experiment—proceeds expressly by planning and carrying through a certain alteration in the existences referred to. In other words, denotative reference is of the nature of an act or event, not of self-contained thought.

be a thing and to *be* a term of a proposition are identical? (b) Or is it a theory of the relation of existences *qua* existences to one another? Then it is demonstrably false. For "biological" and "chemical" relations are accompanied by considerable alteration in prior existence, "physical" relations by some alteration; and of only spatial relations does the doctrine hold. And even there (since it is impossible to isolate spatial changes from physico-chemical changes) all we can rightly say is that the alteration of things effected by change of spatial relation is *practically* negligible for most purposes. If we take knowing as one existence, one event in relation to other events, what happens to existences when a knowing event supervenes, is a matter of bare, brute fact. No manipulation of the concept of relation ("internal" or "external") will show whether the situation is similar to the biological, the chemical, or the spatial case.

2. One of the six realists (bottom of p. 400) goes so far as to make the external theory of relations the basis of an inference to the possibility of the qualitative dissimilarity of the "knowing process and its object." If any inference is possible, it is only upon the assumption that the "knowing process" is one of the terms of knowledge, the existence known being the other. Surely it should be self-evident that the "knowing process" is not one of the *terms* of a proposition—unless the case of the special proposition about the relation of the knowing process to existence be exclusively taken. And to suppose that the relation of a knowing process to the existence it deals with can be settled by an analysis of the relation of the terms (as terms) of the very proposition which passes upon the relation would seem to go the limit in the way of begging the question.

The above inquiry is certainly schematic, and I fear dry and seemingly barren. Its purport is, incidentally, to show that the realistic platform (regarded as a positive doctrine and not simply as anti-idealism) ignores two vital problems: one, that of the significance of knowing as a natural event in relation to other natural events; the other, that of getting knowledge, of passing from doubt and guesswork to grounded conclusions. The main object of my discussion is to protest against a professedly new and significant movement trying to reach results by the manipulation of a concept—an unanalyzed and ambiguous concept at that. To proceed in this fashion is, to my mind, to perpetuate the most regrettable feature of idealism; the smothering of inquiry into (and even interest in) special problems by wrapping them all up in a blanket of a stereotyped pattern. Should not the formulation of a platform of results, in the way of any 'ism, wait upon a scheduling of questions? Some of these questions, questions antecedent to any use of a concept of rela-

tions, are: (1) Is knowing a natural event? If so, what is its factual character and how does it evolve out of other natural events? (2) Is logic primarily an account of *getting* knowledge, with a concept of achieved knowledge serving only as a limiting term, or is it a theory of knowledge *achieved*? If the latter, what sort of a thing is the account of getting knowledge? (3) Is it of any significance that achieved knowledge is expressed in propositions composed of terms—*i. e.*, of *symbols*? If so, what? (4) What is the relation of knowing as an event, a happening, to knowledge as a logical relation, whether of things or of terms?

JOHN DEWEY.

COLUMBIA UNIVERSITY.

REVIEWS AND ABSTRACTS OF LITERATURE

The Influence of Darwin on Philosophy, and other Essays in Contemporary Thought. JOHN DEWEY. New York: Holt & Co. 1910. Pp. vi + 309.

Professor Dewey has deserved the gratitude of philosophical students by gathering these detached papers and reproducing them in permanent form. They throw much light upon various aspects of what may fairly claim to be the most hopeful tendency of contemporary thinking. The contents of the book range over a wide field of history and criticism: immediately following the essay which gives the book its title there are essays on Nature and its Good, Intelligence and Morals, and The Experimental Theory of Knowledge. On all this variety of topics what Professor Dewey has to say is stimulating and helpful.

Not the least interesting of the essays is the first, on the Influence of Darwinism on Philosophy: Professor Dewey is especially happy in dealing with the historical sides of his subject. He shows with much clearness that Darwin's work meant something far more than modifying the conceptions of biology: it effected a revolution which broke up the foundations of all the mental and moral sciences. The old views, which go back to Plato, "rested on the assumption of the superiority of the fixed and final; they rested upon treating change and origin as signs of defect and unreality. In laying hands upon the sacred ark of absolute permanency, in treating the forms that had been regarded as types of fixity and perfection as originating and passing away, the 'Origin of Species' introduced a mode of thinking that in the end was bound to transform the logic of knowledge, and hence the treatment of morals, politics, and religion." In Greek philosophy "species"—*εἶδος* or *ἰδέα*—was the really permanent behind the bewildering come-and-go of concrete individuals: "species" was the "fixed form and final cause," the central principle of knowledge as well as of nature. Such was the logical doctrine that came down to the Schoolmen and made the foundation of their metaphysic and

theory of knowledge. Professor Dewey rightly points out that it is easy to be unfair to the Schoolmen. "We dispose all too easily of their efforts to interpret nature and mind in terms of real essence, hidden forms and occult qualities, forgetful of the seriousness and dignity of the ideas that lay behind." The breaking-up of these ideas began, of course, at the Renaissance; but the kingdom of plants and animals still resisted the onset of the new philosophy of change. It was the work of Darwin to "conquer the phenomena of life for the principle of transition, and thereby free the new logic for application to mind and morals and life." After this historical survey Professor Dewey passes on to estimate the influence of Darwin upon the philosophical development of the future. He concludes that his influence will lie in turning men's minds away from metaphysics and all ultimate inquiries to the detailed investigation of the world as we meet it in every-day experience. As an example of this anti-metaphysical influence Professor Dewey adduces its bearing upon the old discussion between those who see design behind the world and those who explain all things by chance. "Darwin concluded that the impossibility of assigning the world to chance as a whole and to design in its parts indicated the insolubility of the question." Thus, having now got this old controversy put behind us, we are free to concentrate attention upon specific problems, the problems which ask what "particular set of changes it is that generate the object of study, together with the consequences that then flow from it." This change in intellectual temper will, Professor Dewey holds, have most salutary results in making philosophy more useful, more ready to accept the responsibility of suggesting improvements in education, manners, and politics—in other words, will favor pragmatism.

This anti-metaphysical tendency of Professor Dewey meets us elsewhere in his volume and, being perhaps the most remarkable feature of it, prompts us to reflection upon the strength and weakness of the form of pragmatic philosophizing which he represents. Its strength is just that practicality which he claims for it, a claim in which he deserves our heartiest sympathy. No one would urge more strongly than the present writer that philosophy should be practical and that its highest mission is to put forward workable ideals in every department of our spiritual life—in education, in politics and, above all, in religion. But the question must be asked whether this practicality is necessarily connected, or even ultimately compatible, with a metaphysical indifferentism. How can pragmatism be used for religious purposes if it is anti-metaphysical? Moreover, the intrinsic value of philosophy (as opposed to its practical value) is that it satisfies the taste for abstract speculation, a most respectable and elevating taste, widely diffused in every cultured society. And it is metaphysic which, of all the philosophic disciplines, satisfies this taste in the highest degree. I remember once after a metaphysical evening at the London Aristotelian Society hearing one of the audience say: "I think these metaphysical questions are the only ones really worth discussing"; and this I believe is the view of the "plain philosophic man," the man whose mind has not become specialized by teaching or by engagement in

schemes of practical reform. I doubt whether pragmatism will keep the commanding position which it now holds in present-day discussion unless it can produce a metaphysic of its own worthy to stand beside the great systems of the past. Pragmatism need not be less practical than it is now, but it must become more speculative if it means to take a permanent place in the history of thought.

HENRY STURT.

OXFORD.

JOURNALS AND NEW BOOKS

REVUE PHILOSOPHIQUE. May, 1910. *Les causes de l'avarice* (pp. 441-463): DR. ROGUES DE FURSAC. - There are two controlling principles: (1) every condition that weakens the instinct for economy is unfavorable to avarice, and *vice versa*, (2) every condition that develops the affective life and psychical activity is unfavorable to avarice, and *vice versa*. These conditions are especially operative amongst childless french families of the middle classes. *Le mécanisme cérébral* (pp. 464-482): H. BEAUNIS. - The author traces the development of his own mental states from rudimentary forms to the most complex sorts of mental activity. *Une félicité artificielle (fin)* (pp. 483-529): DR. P. JANET. - A continuation of the study of Marceline from the preceding number of this JOURNAL, concluding that "double personality is the hysterical form of periodic depression." *Analyses et comptes rendus*: G. Dromard, *Les mensonges de la vie intérieure*: L. DUGAS. Carl Stumpf, *Vom ethischen Skepticismus*: J. SEGOND. Max Nordau, *Le sens de l'histoire*: DR. S. JANKÉLÉVITCH. Novicow, *La critique du darwinisme sociale*: DR. S. JANKÉLÉVITCH. J. L. Perrier, *The Revival of Scholastic Philosophy in the Nineteenth Century*: F. PICAVET. A. M. Viel, *Mouvement thomiste au XIX^e siècle*: F. PICAVET. *Revue des périodiques étrangers*.

REVUE DE METAPHYSIQUE ET DE MORALE. July, 1910. *La logique de l'action* (pp. 441-457): J. M. BALDWIN. - An abridgment of portions of the author's Genetic Logic, Vol. III. *Une expérience sur l'influence des idées* (pp. 458-477): P. LACOMBE. - A study of French history from August 10, 1792, to June 2, 1793, with a view to determining the rôle played (1) by traditional ideas and (2) by occasional ideas. *Déduction et syllogisme* (pp. 478-490): E. GOBLOR. - The syllogism is not deductive reasoning although it has a definite function in all reasoning, hence both M. Poincaré and the Logisticians are wrong. *Caractères de l'algèbre moderne* (pp. 491-529): M. WINTER. - A study of the evolution of the notions of analysis from arithmetic and algebra. *Études critiques. La philosophie religieuse de Schleiermacher, d'après la thèse de M. Cramussel*: A. LÉVY. *Questions pratiques. Le procès de la Démocratie (suite)*: GUY-GRAND. *Supplément*.

Bergson, Henri. Time and Free Will. Translated by F. L. Pogson. London: Swan Sonnenschein and Co. 1910. Pp. xiii + 252.

Dewey, John. How we Think. Boston: D. C. Heath & Co. 1910. Pp. vi + 224. \$1.00.

- Lyman, William Eugene. *Theology and Human Problems*. New York: Charles Scribner's Sons. 1910. Pp. ix + 232.
- Martin, Lillian J. *Zur Lehre von den Bewegungsvorstellungen*. *Zeitschrift für Psychologie*. Leipzig: Johann Ambrosius Barth. 1910. Pp. 47.
- Whipple, Guy Montrose. *Manual of Mental and Physical Tests*. Baltimore: Warwick & York. 1910. Pp. xix + 534.
- White, William A. *Bulletin No. 2*. Government Hospital for the Insane. Washington, D. C. 1910. Pp. 135.

NOTES AND NEWS

THE Macmillan Company announce among their fall publications Part II. of "A Text-Book of Psychology" by Professor E. B. Titchener, "The Mediæval Mind" by Henry Osborn Taylor (2 vols.), "Principles of Secondary Education," volume III. "Ethical Training," by Professor Charles De Garmo, and a third edition of "The Grammar of Science" by Charles Pearson.

It is announced that a national office of French universities and schools has been inaugurated under the presidency of M. Paul Deschanel, of the French Academy. Professor Paul Appell, of the University of Paris, and Professor Georges Lyon, of the University of Lille, have been elected vice-presidents and Dr. Raoul Blondel has been appointed director. The new department is to be installed at the Sorbonne, and its object will be to make known to foreigners the educational resources of France.

DR. ELIOTT P. FROST, instructor in philosophy at Princeton University, has been made instructor in psychology at Yale University, to succeed Dr. Frederick S. Breed, who has been appointed assistant professor of education at the University of Michigan.

M. GEORGE FOUCART, the well-known writer on antiquities of religion, has been made professor of the History of Religions at the University of Aix-Marseilles.

HOUGHTON, MIFFLIN AND COMPANY announce for publication in February "A Beginner's History of Philosophy" by Herbert E. Cushman.

DR. MABEL CLARA WILLIAMS has been promoted at the State University of Iowa from instructor to assistant professor of psychology.

DR. KNIGHT DUNLAP has been made associate in psychology at Johns Hopkins University.

BERGSON's "Matiere et Memoire" is being translated into English by N. M. Paul.

THE distinguished Italian anthropologist, Dr. Paul Mantegazza, died on August 28 at the age of seventy-nine years.

SPINOZA's "Ethic," with an introduction by Professor George Santayana, is announced for publication in October by Dutton & Co.

THE JOURNAL OF PHILOSOPHY

PSYCHOLOGY AND SCIENTIFIC METHODS

THE AIMS OF AN INTRODUCTORY COURSE IN PHILOSOPHY

IT is generally recognized by teachers that one of the most difficult university courses to administer, from the standpoint of the pedagogical problems which it involves, is that which strives to lead the student into systematic philosophy. The difficulties are manifold, but the characteristic ones may be traced to two main sources. In the first place, such a course is philosophy. That means that it calls upon the student to criticize and overhaul his ordinary view of matters, and to readjust his opinions along lines which are not familiar, with the aid of ideas that are reflective and abstract. It is a hard thing to abandon the practical realities of ordinary life for the highly wrought technique of metaphysics, and it is harder yet to see, as the student should, that the technique of the philosophers is necessary if we are to interpret with even reasonable consistency the essential meaning of the ordinary man's experience. In the second place, such a course is a mere introduction. That means that it aims to afford the student a fairly comprehensive general survey of a subject which is in truth enormous, but in which genuine achievement depends upon clear insight regarding detailed and intricate problems. The dominant interest of this philosophical field resides in the estimation of its totalities and its perspectives; but the vantage-ground from which these perspectives may be gained is to be won only by hard climbing in some very definite and closed-in region of metaphysical debate. Now if the teacher throws the emphasis more strongly upon wholes, he may produce a very interesting catalogue of the vagaries of human opinion, but make little impression upon the serious personal thinking of the individual student. His men have then simply been attending a moving-picture exhibition. If he emphasizes more strongly the problems which should carry individual insight, he may readily lose the larger view, and leave his student in the locked-in condition of the modern devotee of specialized research. The differing answers which indi-

vidual teachers have worked out in the face of these difficulties cause the content of this course to vary to an unusual degree, as we pass from university to university.

It may help us in the treatment of these professional perplexities if we define rather closely the most prominent objectives which should stand out before us as we plan such a course. What is it that we propose to do for the competent American undergraduate?

First in importance I would place the unveiling of the idea of the unity of human culture, and of its essentially human and humane import. In its deeper researches metaphysics is the exploration of that profound synthesis which is implied in human life and the consciousness of which is leading us as we attempt to interpret to ourselves the real meaning of our experience. This may determine the spirit of our efforts, but hardly the form of statement. For it is also true that philosophy is the criticism of life, and to be effective it should engage with life as the modern American knows it, rather than with the theorizing of German metaphysicians. And certainly in our modern intellectual world there are sufficient jars and bickerings, contrasts and antagonisms, to give point and interest and cultural significance to such a study; certainly also the distress of our day in the consciousness of its distracting and conflicting cultural tendencies will yield the dialectic necessary to evoke and sustain sounder and more philosophical views.

If we look for a moment at the present situation of the intellectual life of society, we shall note that the centrifugal tendencies are in general strongly prevailing over the centripetal ones. The very fact of specialization, so pervasive and necessary in modern conditions, aids materially to establish this result. The different sciences have been defined so that each may stand in large measure by itself, and it often determines the thought of its devotee to the exclusion of other interests. The demands of professional life are so exacting as to control the training and thought of its candidates for six or eight years during the process of getting an education, and perhaps throughout the subsequent active years. The life of business is equally absorbing and compelling. And so the different human interests tend to draw apart. Men live in the common thought world of the daily papers and the magazines, it is true, and of a chaotic literature, perhaps even of popular science, but they scarcely try, after a few years, really to understand one another. Meanwhile the great historic forms of social control are breaking up. Even the church, however efficient for the practical organization of men for higher interests, scarcely endeavors to assert the intellectual leadership which was once its function; while the university, to

which the scepter has passed, does but reflect the total cultural universe, and does not as a whole exercise the type of influence that once belonged to the small college. On the whole, then, we have an age of tremendous material efficiency, and struggling for efficiency also in intellectual matters; but whose popular thinking is disconnected, dispersive, revolutionary in its boldness, and yet in cardinal respects essentially shallow and incoherent. And from this there result systems of valuation which are eccentric and out of proportion, not to say superficial and false.

Now in many respects this condition can not be cured, and must simply be endured. The poet and the mechanical engineer may never really love one another. I cherish the conviction, however, that philosophy finds in this situation a mission which makes it of very genuine social service. For it may bring strongly home to the minds of those who come under its influence the ideal of culture in its larger and genuine meaning, and may show how this engages with the recognized realities of life. It may show that "the truth is the whole," and that the reality evidenced by our experience is one in which all the great demands of human nature find their goal and their satisfaction. It may urge in an effective manner the claims of a well-rounded and complete life, and establish a firm bulwark against all manner of cheap and cramping and narrowing dogmas. It may set its face against that partial enlightenment which comes from the examination of one portion only of human experience, and which would establish a social tendency not for man's good upon the whole. Against all these an effective answer in principle may be returned only by philosophy, for it alone can develop the conception of truth as the fulfilment of the total system of meanings imbedded in human experience, and of reality as revealed in the entire coherent idealism of man. It may then point out to the noisy and arrogant representative of narrow and dogmatic tendencies the limitations of his view-point and his special brand of insight and of truth. It may bring the cavillers more closely together; and if it can not exactly compel them to love one another, it may at least force them to become as little children in a well-ordered school.

Now among these antagonisms of modern culture one stands out as so significant that I think it should receive a thorough treatment in principle. I refer to the clash between science and religion, or at any rate between naturalistic and teleological schemes of interpretation. No doubt this is not an isolated issue; and it seems to me well to make clear that similar contests arise between any two neighboring sciences, when the categories characteristic of either are taken as absolutely true and all-controlling. The crucial character

of this issue, however, the strong appeal which it makes to human interest, and the opportunity which it offers the teacher to seize upon the two most powerful influences in our culture and illustrate with them the nature of a genuine philosophical synthesis—these and many other factors combine to counsel the somewhat full treatment of this problem.

To treat this matter fairly, however, or indeed any other distinctively metaphysical issue, we must carry through to a reasonably successful outcome the analysis of the nature of knowledge and of scientific constructions. And we may hope to build up even in an introductory course, I think, some appreciation of the idealizing activity of the mind involved in knowledge, and of the different forms of insight such as perception, judgment, conception, as various aspects of the self-realizing energy of mental life. We may see the idealism of the intellect as a partial product of the demand for fulness of life, and as not dis severed from the idealism of the will. We may gain a conception of truth and of reality which makes these not foreign to the essential ends of the worthiest human aspiration. And when science has taken its proper place as an integral element in the complete life, I regard it as the function and privilege of the teacher of philosophy to commend the scientific interest with all the arts and resources in his power. No doubt it is true that a genuine love for science can be built up only by detailed study of the sciences. It is a somewhat different matter, however, and in some respects I think an even more significant matter, that men of liberal culture in general should entertain towards science a respect, an honor, a trustful and cordial confidence, such as will assist it to assume rapidly the type of leadership to which it is properly adapted in the ages that are to come. When the limitations of science are known, as they are to the student of philosophy, there is the less reason for hesitating to bid it Godspeed in its proper work. I would not wish to reenact the rationalism of centuries gone, and would not have our young men lose sight of the fact that richness of ordered life, and not simply intellectuality, is the key to true and worthy living; but even with this modified estimate, one may still fairly summon to the support of science much of that almost religious enthusiasm which finds such beautiful expression in Aristotle's hymn to wisdom.

In like manner a sufficient development of the philosophy of religion should be essayed to make evident the idea of a religion which is something more than a fantastical belief in a supernatural and mythological scheme of heavenly things. Religion never gets a fair hearing to-day with many educated people, simply because they take its mythology or its traditional vestments as the essential meaning

of the thing itself. And even those people who can see that this is not the right view of the matter are yet in difficulty, because they do not see how to formulate for themselves in any definite and articulate way the deeper meaning of religion. In such a condition, when scientific teachings are clear cut and definite, but religion either clearly incredible or else incoherent and vague, it is no wonder that the cultured classes do not find it possible to ally themselves strongly with the churches. But this condition of affairs is a mere accident of contemporary pedagogics, and does not result from the nature of things; for however difficult it may be to maintain a really constructive philosophy of religion, it will hardly be contended by any responsible scholar that religion has been decisively disestablished. The difficulty of our cultivated class is largely the difficulty of religious education and nurture. They need an affirmative body of religious ideas, in fair measure coherent and progressive, and in keeping with the body of knowledge which is being built up so massively by our sciences and by philosophy. That is, they need an opportunity to get familiar with such ideas; for the ideas in question exist, but are not very largely purveyed by the majority of our churches, and are therefore scarcely accessible in a systematic form to the general public. Now I do not conceive that an introductory course in philosophy can develop to any considerable extent the distinctive content of the philosophy of religion, or of Christian theology in its reflective form. But that is not necessary. It has been well said by Balfour that the decisive battles of theology are fought outside her borders. In developing the idea of culture, and of an ideal order which is at once the deepest truth and the highest good of the individual will, the teacher of philosophy is meeting one of the most significant demands of religious instruction in our day. And if the lesson is illustrated rather from the logic of science and history and social and moral institutions than from a sacred literature, that may help to make it all the more impressive. It will be somewhat awkward, no doubt, and less inspirational, than the best work of the best preachers; but it may be no less permanent in its significance. It would perhaps be a misfortune if the student were to stop at the point where the teacher of philosophy must leave him. He should not content himself with the bare foundations of a philosophy of religion, but should foster a religious culture leading up to and appropriating the best religious literature of the history of the race. But that he should actually do so is not the metaphysician's concern. We are concerned, however, with developing before him the essential import of the religious idea, and in such forms that it may be seen to engage with and interpenetrate all phases of human culture.

There are certain other antagonisms in modern thought which are hardly inferior in significance to that between science and religion, which may also be used effectively to illustrate philosophical synthesis. Most serviceable, perhaps, is the contrast between radical individualism and communism in political and ethical problems. Metaphysics is primarily the study of what it means to be an individual, and the nature of the hold which the universe has upon the individual. But this question lies at the bottom of political philosophy and many of the keenest debates throughout the ages of political history have turned upon its treatment. It seems to me that the teacher of philosophy should by no means let slip the opportunity to turn the powerful political interest of his student to the support of his subject. In doing this he is aiding to place the philosophy of the state upon a broader and firmer basis, and to emphasize once more the unity of man's essential interests.

Second in importance to the emphasis upon the unity of human culture, but still of high significance, I should place the training of the student to the spirit of critical and fundamental thinking. Metaphysics must hold before the student, as I conceive, the ideal of a type of thoroughness and foundation-testing such as he had never dreamed of before. The power to appreciate the assumptions which are tacitly present in an argument or creed, and to understand the process by which these may be brought to the test of experience and of critical thought, may in fair measure be inculcated even in an introductory course. And it is vastly important to the competent thinker. From the standpoint of this service the meaning of philosophical criticism, and the idea of the critical method, ought, I think, to be constantly held before the student, accompanied by commendations and even eulogies. Let him gain for fair *criticism* something of the respect and even reverence which the legitimate ideals of science and of humanitarian culture should evoke. The pagan notion that criticism is simply carping, hostile fault-finding should be absolutely extirpated. In its place should arise the recognition that philosophical criticism is a vital part in the establishment of any reflective truth, that its aim is essentially constructive and its office kindly. The loyalty to the spirit of philosophical criticism should be seen as one element in the loyalty to truth. The student should be led readily to detect and vigorously to hate the spirit of uncritical dogmatism. I do not mean by this that sturdiness of conviction is to be undermined. On the contrary, it seems to me that so far as philosophy has this effect, as people believe that it often has, the result is unfortunate. But really a belief may be just as sturdily held when it has been seen to rest upon sound reasons that will bear

critical analysis as when it is suspected of running counter to critical principles. It is not necessarily the man who believes nothing who is free from dogmatism; for that denial itself may be based upon dogmatic grounds. Dogmatism is present when beliefs do not root in genuine experience, are not sustained by the systematic meanings of experience, or are not consistent and intelligible in principle. Dogmatism in this sense is a mark not of conviction, but of error.

Now in this stage of the training much must depend upon the personal efforts of the student. Certain insights of much significance can be gained only by his own initiative and endeavor. No man, I suppose, can really *tell* philosophy to a class of students. It is here that the well-known motto, *οὐ φιλοσοφία ἀλλὰ φιλοσοφεῖν*, comes into its rights. Yet I can not but feel that this motto has given occasion for great and crying abuses. It has been made the excuse for subjecting our students by the hundreds to the cumbersome technique of the most advanced metaphysicians—a technique so impossible that to learn it even a little excludes the possibility of learning anything else whatever during the course. In this respect the philosophical teachings of Kant have been the great rock of offense. Many teachers feel that to inculcate the spirit of philosophical criticism they must force the student to think Kant's thoughts after him—they think that anyhow, even if the "Critique of Pure Reason" isn't true, it is good medicine. The struggle to make something out of it all will teach the men to philosophize, even if they don't get anywhere. And the result is distressing. A few brilliant students are induced to painfully think themselves into a highly complex, unnatural, and unsound system, for the sake of slowly and painfully thinking themselves out of it again. Meanwhile the great majority have been lost out on the way. Thus for many decades Kant's hand has lain heavily upon philosophical instruction in this fair land, and it is little wonder that the subject has not yet taken its proper place in the nation's life. Still other teachers, less under the spell of Kant, are yet so enamored of the *οὐ φιλοσοφία ἀλλὰ φιλοσοφεῖν* motto that they foster debate and discussion on minor matters in a way which leaves the student always in what Plato called the puppy-dog stage of philosophy, with little appreciation of the great unities and realities of modern culture. So far as these methods fail to give the perspective of the whole, and to synthesize and organize science and life, they seem to me unjustifiable. I think that in an introductory course more should be made of the larger meaning of it all, and less of the technique of the metaphysician.

The individual insight and reflection of the student can be secured through carefully arranged studies culminating in essays. In a biological laboratory much can be seen with a lead-pencil. The same is true in philosophical studies. In addition to reading and writing, however, the student gains a very genuine training in the spirit of philosophical criticism by following the systematic lectures of the professor. I allude now not to the matter imparted, but to the form and spirit of the discussion. It is upon this that I think we must fall back for much of the self-commending character of the first semester's work in systematic philosophy. The lectures should illustrate the spirit of fundamental thinking, of fair and searching criticism, of love of truth, hatred of dogmatism, zeal for a sane, rich, and orderly scale of values, breadth of mind and of sympathies. This quality of the course may alone make it of more abiding significance, to those who come under its influence, than many a course supposed to be more "practical."

A third aim which I would regard as important for such a study, and the last which I will name, is that of giving an ordered survey of the system of the sciences. It is here that philosophy can commend itself especially to the body of students of a modern university, but it is here that the introduction to the subject through the history of philosophy is least adequate. Philosophy is the study of the unity of the essential interests of man. As such, it studies the relation of science to religion, to action, and to feeling. But philosophy is also a study of the total meaning of our knowledge; and any key-truth which it can state should be illustrated in detail throughout the system of the sciences. In fact, however, a large percentage of our students do not see how the idealism or personalism which the philosopher talks about stands related to the hydrogen, the chlorine, or the electrons which his professors of chemistry and physics discuss.

Philosophical syntheses become much more real to such students if they can be brought into relation, in some detail, with the present condition of knowledge in such special fields. The problems of the philosophy of nature and of cosmology become then especially significant. It is true that special difficulties lie in the way of this discussion. Almost any particular science under discussion will be unfamiliar to a large proportion of the class, and perhaps the deeper theories will be unknown and almost incomprehensible to all. Yet a little may be achieved, and this little of large interest and importance. The discussion of the theory of matter in contemporary physics and chemistry may be brought into relation with the larger conceptions of knowledge and reality already developed in the

course. A similar treatment may be brought to bear upon the underlying ideas of biology. In like manner the status, significance, and limitations of psychology as a natural science should receive attention. This survey of the philosophy of nature is of great service to a considerable number of alert minds, and serves to bring philosophy home to men who otherwise would not be able to connect their scientific specialities with the abstract and general results of the metaphysician.

I have mentioned three cardinal aims of an introductory course in philosophy. Not even by implication does this exhaust the list. It is possible that there has been more poor pedagogics in this field, throughout the ages, than in any other branch in the university. Yet, even so, the course has exercised great influence, and as we progressively master the pedagogical problems involved I believe it can become one of the very most serviceable of university studies.

EDGAR L. HINMAN.

UNIVERSITY OF NEBRASKA.

AN INTRODUCTION TO PHILOSOPHY THROUGH THE PHILOSOPHY IN HISTORY

I SERIOUSLY propose that some one who knows much history and much philosophy spend the remainder of his life in making a book based on a historical study of the metaphysical and ethical interpretations of life implied in the popular institutions of the English people. I suggest that the book be entitled "A History of English Ideals."

Histories of philosophy, technically so-called, we have in great number and variety. But, in the total history of thinking, is all the philosophy worth noting contained within the few technical systems—the stock systems of our text-books? Do not historic events and institutions mean a vast realm of judgments on philosophical subjects, no less significant because expressed in the common language and the common deeds of common men? Grant that these judgments are loosely formulated and vaguely founded—that is, untechnical—are they for that reason utterly negligible, especially where they happen to be the verdicts of the social consciousness or the social conscience of a civilized people? Is there not a field yet unworked by philosophic historians and which genuinely belongs to a truly comprehensive history of philosophy?

It is a commendable fashion to tell those entering upon the study of metaphysics that, after all, metaphysics is not a thing apart from

the ordinary business of life, that even common-sense attitudes involve an unconscious theory of reality. But, supplementing this statement, little or no explicit reference is made concerning what particular attitudes of common-sense imply what particular metaphysics. There are, indeed, isolated instances of certain realists appealing to the verdicts of common-sense as to a sort of sanction. But nobody has attempted an empirical history of the popular judgments of any people concerning the true, the real, and the right, as expressed or implied in what one broadly calls social institutions. Yet nobody can deny the explicit and general use by any civilized society of the epistemological, ontological, and moral predicates; nor can any one deny that these predicates are decisively implied in certain classes of social deeds. Surely it is a rational question to ask what sort of institutions would be the expression of a given system of philosophy or ethics universally adopted; the converse of this question is equally rational. In other words, there is such a thing as a body of non-technical philosophy; and a history of non-technical philosophy is possible.

The realms of such social judgments as interest the philosopher are the realms of the more permanent and pervasive popular interests. For instance, one of these interests is government. The innumerable ways which people use to express their attitude towards their government are also innumerable ways of expressing moral approvals of ultimate significance as well as quite definable metaphysical convictions about the relatively real. Show me the form of government which a people tolerates at any particular period, enumerate the issues which to it are real, tell me its attitudes towards these issues and the most popular solutions of them, and I in turn will show you a fairly consistent ethical and metaphysical interpretation of life, of which all this is the logical expression. Now, if you will not confine yourself to the social institution of government alone, but will inform me of the prevalent judgments about religious, educational, and social problems, of the sort of books most read and of the popular reaction upon them, of the type of men acclaimed as great and chosen as leaders, in short, if you will give me an insight into all the important social institutions of the period, I shall be able to give to you what is the general attitude towards the problems of what it is to be true, to be real, and to be good. And, having the popular verdicts, it would be of supreme interest to compare them with the technical philosophies of the period and to show their identities, their divergencies, and their mutual influences. Often would one find that an age's social verdicts are surprisingly near the technical pronouncements of the metaphysicians and ethicists. Witness, the period of

the French enlightenment. Witness, technical pragmatism (if such there be) and the popular pragmatism of the American people. This sort of research is what I propose in suggesting a history of English ideals.

Thus far the function of such a work seems dangerously near that of a philosophy of history in the Hegelian sense. But even if it were, the work would be of great value: indeed, I hardly comprehend why a philosophy of English history in the general spirit of Hegel's conception is not written by some ardent Hegelian. We are not without attempts at a philosophy of the English *history of philosophy*, but I know of no philosophy of English *history* in the metaphysical sense.

But what I propose differs from an Hegelian philosophy of history in this: it would not attempt to reveal in history the realization of a dialectical process; and its interpretations would not depend upon the standpoint of a definite metaphysics held by the author. Thus, it would not be Hegelian at all. One can hold with Hegel that every important period of history expresses an idea without appealing to all history as the logical realization, after a set form, of the Idea, or trying to justify necessary stages conceived *a priori*. One can maintain that there is philosophy *in* history and yet have no philosophy of history whatsoever. A history of English ideals might incidentally uncover a significant logical sequence, but it need not be the result of the metaphysical prejudgment of the writer. I suggest that it be purely empirical in this respect. Even the concept of progress, so unconsciously common to historians themselves, could be ignored advantageously.

What would be the worth of such a work as an introduction for English-speaking students to philosophy? What is the merit of an introduction to philosophy through the philosophy in history? Few writers of introductions have articulated philosophy in any definite way with what the average student already knows. Now, were the question fairly put, I think it would be found that the average sophomore knows as much about history as any systematized body of knowledge, especially the history of his own country. I mean history to be understood in the broad sense of the history of a people, not merely of its politics. In the first place, history is a part of the student's curriculum from the grammar-school; and statistics show how generously it is elected in college. In the second place, history is intrinsically interesting to the average man. In the third place, it is indirectly communicated through countless channels, through novels, poetry, newspapers, and conversation. In a democracy, where politics is a perennial topic of conversation, and a quadrennial

topic of agitation, some knowledge of history is inevitable on the part of every social being who has any intellectual fiber at all.

Thus, an introduction to philosophy through the philosophy in history would be, first of all, psychologically adequate—that is, it would be an introduction by way of a natural and cultivated interest. In his “Introduction to Philosophy,” Külpe rightly names among his four reasons why a need of metaphysics is felt: “(1) Some measure of uncertainty in political and legal relations; (2) insecurity and discomfort in the affairs of social life” (p. 28). A history of English ideals would attempt to show how such unrests are implicit seekings which may, without any violence whatever, be defined in metaphysical and ethical terms, and how the results of the search are institutions also thus definable. Every philosopher recognizes that philosophy grows out of the demands of life: the best way to introduce philosophy to living men is to lead them to discover it as implied in life. It is owing to the psychological reasons here set forth that Sibree could say in his translator’s preface to Hegel’s “Philosophy of History” that Hegel’s lectures on this topic “are recognized in Germany as a popular introduction to his system; their form is less rigid than the generality of metaphysical treatises, and the illustrations, which occupy a large proportion of the work are drawn from a field of observation more familiar perhaps than any other to those who have not devoted much time to metaphysical studies” (p. iii). The same general thesis that I urge is also expressed by Gans in his preface to the first edition of Hegel’s work. He points out that the lectures “will excite the interest of youthful hearers, and associate what is to be presented to their attention with what they already know. And since of all the materials that can be subjected to philosophic treatment, history is always the one with whose subject persons of comparatively youthful years become earliest acquainted, the ‘Philosophy of History’ may also be expected to connect itself with what was previously known, and not teach the subject itself . . . but rather confine itself to exhibiting the workings of the Idea in a material to which the hearer is supposed to be no stranger” (p. xix).

But granting that such an introduction would possess some psychological adequacy, would it be *philosophically* adequate: would the reader be effectively introduced to that to which we wish to introduce him? Again, it is obvious that most introductions are not very explicit as to what they wish to introduce their readers, beyond assuming that it is to philosophy. Some appear to identify the philosophy to which the student needs introduction with a sort of philosophical dictionary; others with the problems of philosophy; others with the typical solutions of these problems; others with the

historic systems; others with the particular system which the introducer holds; others with the power of spontaneous philosophic thinking; others still, and by far the greater number, seek to introduce the student to the other more advanced courses in philosophy commonly offered by philosophic departments.

I am unwilling to reject any one of these aims as foreign to an introduction to philosophy—indeed, I insist upon them all and hold that any introduction is inadequate which does not serve them all in some measure. But there is one purpose among these purposes indispensable to the attainment of any one of the rest, namely, the purpose of developing the power of spontaneous philosophic thinking. So I pass over an attempt to show how admirably in “A History of English Ideals” all types of doctrine would emerge and address myself to this question, Would such an introduction tend to engender the sort of thinking which we term philosophical?

I am persuaded that the reason why it is so notably hard to induce students to do independent thinking is that the problems with which we confront them do not seem to them worth while. They do not arise out of concrete situations with which they are themselves involved or with which they are familiarly interested. In itself, the metaphysical problem of the one and the many, or the problem of teleological criteria in ethics is not likely to heighten the pulse of the average sophomore. But the conditions are changed when the problem is made to emerge from an absorbing concrete social conflict or a compelling national crisis, historic or contemporary. It is not an artificiality thus to relate philosophy, philosophy from of old was born of just such concrete situations. And once the student has become accustomed not merely to philosophize, but to find life as he knows it and cares for it the subject-matter of his philosophizing, he surely is effectively introduced to the *sine qua non* of philosophy: philosophy is indeed to him a life and all is grist for the philosophic mill. Not only history, but contemporary events assume a new meaning. The late William T. Harris, in the preface to his exposition of Hegel’s logic, bears testimony to the efficacy of this sort of an introduction to philosophizing. He says: “He [Mr. Brockmeyer] impressed us with the practicability of philosophy, inasmuch as he could flash into the questions of the day, or even into the questions of the moment, the highest insight of philosophy and solve their problems. Even the hunting of wild turkeys or squirrels was the occasion for the use of philosophy. Philosophy came to mean with us, therefore, the most practical of all species of knowledge. We used it to solve all problems connected with school teaching and school management. We studied the ‘dialectic’ of politics and

political parties and understood how measures and men might be combined in its light" (p. xiii).

I shall not stop to discuss the question, "Why was history ever written, anyway?" although I strongly suspect that it exists not for the sake of its facts, but for the sake of its ideas. Nor do I wish to insist that the way indicated is the only way by which to introduce students to philosophy. I do think it is a highly attractive way among a number of legitimate ways; that it is especially feasible for certain classes of students, and that it would be helpful as an auxiliary to any introduction course. My main desire is to emphasize by an illustration, which could well enough have been otherwise, certain conditions which any adequate introduction to philosophy should observe and which none adequately do observe,—principally the condition of connecting philosophy vitally with the student's average interest. Whether that interest be named as history, or literature, or football, or comic opera, or law is of course an important question of fact: but the paramount thing is to introduce him through his interests, whatever they are. This for two reasons: first, because a man's mind won't let you introduce him in any other way; and, second, because the very best service you can do for the good fortunes of metaphysics is to show that it is not an abstraction snatched from the upper air, but an abstraction from life; or, better still, an abstraction working in and through life and so no mere abstraction at all.

JAY WILLIAM HUDSON.

UNIVERSITY OF MISSOURI.

REVIEWS AND ABSTRACTS OF LITERATURE

Studi Kantiani. FELICE TOCCO. Palermo: Remo Sandron. Pp. 271.

It is indeed a relief, after having heard so much about the obscurity of Kant, to find a competent judge declaring and showing that after all Kant's writings are not so difficult to understand as is commonly supposed. Professor Tocco recognizes that "the author of critical philosophy, like all reformers, seems often obscure, because he does not always use the same words to express the same idea, and creates new terms or gives to the common term new and strange meanings." But he thinks at the same time that "this perplexity of language does not hinder us from clearly grasping the doctrine, many points of which, being beyond dispute, give us a true criterion for judging the rest" (p. 51). In fact, most of the dissensions about the meaning of Kant's philosophy depend merely on the contrasting systems of his interpreters, who mistake their criticisms for internal contradictions of the Kantian thought, as it happens, for example, with Volkelt

and Cantoni. To arrive at a truly impartial and objective appreciation of Kant's "Critique," it is necessary first of all to distinguish sharply between exposition and criticism; and it is this which makes of Professor Tocco perhaps the most lucid and acute interpreter of Kant, and of his "Kantian Essays" a masterpiece of critical work.

Professor Tocco has no difficulty in calling idealism Kant's philosophy, as indeed the author himself named it, but with the condition that the word "critical" should be added, to distinguish it from all other forms of idealism with which it might be confused. And this addition means that in the theoretical and also in the practical field it is impossible to do without something given (*il dato*). For in the theoretical field the datum is the material, which must be arranged according to the categories, and in the practical field it is the moral conscience or the moral life, born in the bosom of humankind long before philosophers began to discuss its foundations (p. xiv). In another place (p. 131) our author declares that the name idealism could not be more unfortunate, and that it is ill-applied to the Kantian theory: "the spirit of idealism—he says—has nothing to do with the 'Critique.'" The one denies or doubts the existence of external things; the other does not deny nor doubt, but only asserts that by means of our knowledge founded on experience we can not go to the bottom of things. The one distinguishes between internal and external experience, and ascribes to the first a greater certainty than to the second; the other, regardless of privileges, believes that both experiences, being equally given, have the same value, and for the same reason that one does not doubt the former, one must not doubt the latter. Lastly, the one believes that beyond experience there may be a superior knowledge, more certain and more evident; the other maintains that beyond experience we can have no theoretical knowledge (p. 130). Indeed, no greater contrast could exist between idealism, be it that of Descartes, or Berkeley, or Hegel, and Kantism, with its anti-mystical and anti-dogmatical character; and Kant was right in calling his doctrine an *empirical realism*, although from another point of view he calls it a *transcendental idealism*: empirical realism, because the matter of phenomena is not posited by mind, but given to it; transcendental idealism, because only that becomes a subject of knowledge which can be worked upon by the synthetical activity of mind, that is to say the formal relations of the elements given in experience. Only in this sense, *i. e.*, from an epistemological point of view, can the word idealism be used to denote Kant's Critique; but, as the term has always been applied to denote a metaphysical system, in the case of Kant it is certainly misleading. For how can a philosophical theory be called idealistic, which, like that of Kant, has such a decidedly dualistic character? Idealism believes that we can know absolute reality, and Kantism declares unknowable the thing in itself; idealism asserts the identity of thought and reality, and Kantism distinguishes between form and matter; idealism sees in sensation and understanding only a difference of degree, and Kantism affirms that there is between them an insuperable gulf, that the understanding finds in external or internal feeling an unsurpassable limit,

an irresoluble residuum, which is not *produced* by it, but *given* to it. These three dualisms, metaphysical between phenomena and noumena, logical between form and matter, psychological between sense and understanding, which constitute the essential foundations of the Critique, are the negation of every kind of idealistic philosophy.

But, if Kant's Critique is essentially anti-idealistic, is it also true that rationalism and dogmatism have no place in it? No doubt, ontological metaphysics has never had more formidable opponent than Kant; no philosopher has ever inveighed more strongly than he against the perversions of the *perversa ratio* and the indolence of the *ignava ratio*; and all the "Critique" is a vigorous challenge against the dogmatic rationalism of the old schools. Still, while it would be an exaggeration to affirm with Professor Paulsen that Kant's philosophy is mere rationalism, nevertheless it can not be denied that dogmatic apriorism occupies a large place in the "Critique." Kant simply removed the center of philosophical inquiry from the object to the subject, from the things observed to the observer; and so, while he drove out dogmatism from metaphysics, he left it standing in the theory of knowledge. The confusion between the metaphysical and the epistemological point of view is the true cause of all dissensions regarding the real character of Kant's philosophy, and of the extraordinary assertion of Professor Paulsen, that Kant—the great opposer of Leibnitzianism—was nothing else but a less genial, although more rigid and more systematic Leibnitz! And when Professor Tocco asserts that Kant's philosophy is no more rationalism than sensualism, he is quite right so far as regards metaphysics, but wrong so far as regards the Kantian theory of knowledge, and even his lucid and acute criticisms show that the old dogmatic spirit was not at all dead in the great thinker of Königsberg. In fact, it has been the task of the followers of Kant to apply to their last consequences their master's principles, and to expel forever from his theory the last survivals of dogmatic rationalism. It was no doubt these survivals which prepared the way to Fichte, Schelling, and Hegel; and although it is quite false to assert with Kuno Fischer that if not the letter, yet the spirit of Kantism must be interpreted in the sense of absolute idealism; and that those philosophers are the true continuators of Kant, because—as Professor Tocco justly remarks (p. 160)—nothing is more contrary to absolute idealism than the theory of the noumenon, which puts a limit to the constructive activity of spirit; nevertheless, Kant's apriorism was certainly liable to be interpreted idealistically. So it naturally happened that Kantian philosophy, which was the negation of every kind of metaphysics, of every knowledge aiming to go beyond the limits of experience, appeared like a preparation for the new metaphysic of spirit, which according to Hegel was to occupy the place of the metaphysic of substance. In consequence, the followers of Kant, while combating absolute idealism, were naturally led to a criticism of their master's pure forms of knowledge, and to an attempt to break the vicious circle in which Kant involved himself by asserting that our cognitions are true because they are founded

on the *a priori* of the categories, and that the categories are true because they are the foundation of knowledge. As a natural development of Kantian thought, subjective apriorism had to submit to the same critical inquiry, by which Kant had shown the inanity and impossibility of objective apriorism.

It has been remarked that this critical development of Kant's theory has led to the negation of Kantism. And indeed some neo-Kantians have left standing very little of Kant, by removing even some of his most fundamental doctrines. So Professor Tocco criticises the apriority of space and time as interpreted by Kant. It is impossible to admit, he remarks, between the matter and the form of sensuous cognition such a gulf that the one comes all from outside and the other all from inside, for if it were so, nothing would exclude that the matter of internal sense were given in the spatial form, and the matter of external sense in the temporal form. Sensuous perception constitutes an homogeneous whole, and between its two elements there can not exist an absolute separation. Thus the form, far from being something purely subjective, is required by the object itself: it must begin in the datum, it can not derive exclusively from mind (p. 42). Obviously this means that the opposition established by Kant between the *a priori* and the *a posteriori* is not true. While the analytical proof of the apriority of space fails for want of a psychological theory of sensation, the transcendental proof fails because the necessity of mathematics, which is completely based on the possibility of construction, does not at all imply that apriority. The possibility of construction depends only on the faculty which our mind possesses of isolating our representation of space, of abstracting it from the sensuous content with which it is developed. This power of abstraction, possessed solely by the human mind, is the only *a priori* existing, and on it is founded the apriority of mathematics (p. 44).

What has been said of the forms of sensuous intuition applies also to the categories. These are not preformed moulds, which mind imprints on phenomena, but they are a kind of activity, a function which transforms the data of intuition, of perception, in concepts. Here also the only existing *a priori* is the unifying activity of mind, which connects and distinguishes the manifold elements of sensibility (p. 127). This activity *a priori* is the fundamental condition of experience, but it is purely formal and empty, so that the various arrangements of phenomena must depend on the phenomena themselves (p. 106). The necessity of causation, for example, is not to be found, as some critics think, exclusively in the category, which is a merely subjective condition, but both in the category and in the phenomenon. This, says Professor Tocco (p. 105), is the true interpretation of Kant's thought, and that which answers best to the spirit of the "Critique." But does not Kant again and again affirm that the principle of causation must be purely *a priori*, for, if it came from experience, it could not be absolutely necessary and universal? The mere possibility of nature depends on certain laws, which exist *a priori*. No doubt, according to Kant, the subjective succession in our apprehension

must come from the objective succession of the phenomena, but the rule, which makes the order of the successive perceptions necessary, derives from mind. "It is true," he says, "that the logical clearness of this representation of a rule, determining the succession of events, as a concept of cause, becomes possible only when we have used it in experience, but, as the condition of the synthetical unity of phenomena in time, it was nevertheless the foundation of all experience, and consequently preceded it *a priori*." This seems to show that Kant's *a priori* can not be considered as merely an activity of mind, and that the necessary rules, or laws, which make nature possible, are in fact original laws which precede experience. And indeed how could we ascribe universality and necessity to those laws, if it required some *a posteriori* element to arrive at them? If the concepts and principles of the understanding were not purely *a priori*, we could have no certain knowledge of phenomena, which are only appearances of the true reality; and the opposers of Kant could rightly ask: how can you boast of establishing the necessity and universal validity of the laws of nature, if you do not and can not absolutely know the real causes of phenomena? Such an objection has no meaning against Kant, for in his theory necessity is synonymous with apriority, and the laws of nature are laws of mind.

This does not prove that Kant was quite right, and that his interpreter is quite wrong, but it shows that the former is perfectly consistent and the latter inconsistent, in so far as he has not examined all the consequences of reducing the *a priori* to a mere activity of mind. This reduction represents a logical development of Kant's "Critique" and a natural result of psychological analysis, but—if Kantism is to survive—it requires a new examination and a new theory of the relation between form and matter, sense and understanding, phenomena and noumena, between what is given to mind and what comes from mind. That relation, as Kant has shown, is an insuperable necessity of thought; but Kant made the mistake of establishing a gulf where there is only a distinction, of considering as separate, elements which are intimately connected. Form does not exist apart from matter, nor understanding apart from feeling; and the *noumenon* is not something which exists over and above the phenomenon, but *is in the phenomenon itself*: it is that permanent reality which persists amidst the changing phenomenal appearances, that ultimate and irreducible element, which every metaphysician has finally to admit, and can never be brought under the clear forms of thought. So interpreted, the noumenon is no obstacle to the certain knowledge of phenomena, independently of all *a priori* forms of intuition and concepts of the understanding. And thus can critical philosophy be truly said, as Professor Tocco justly remarks, the only method which reconciles modern science with the moral ideals of humanity. GUGLIELMO SALVADORI.

UNIVERSITY OF PISA.

Der Monismus und Seine Ideale. Dr. JOHANNES UNOLD. Leipzig: Th. Thomas. 1908. Pp. 160.

For the general philosophical reader, to whom "monism" may import many things, the title of the book might have gained in lucidity if quali-

fied by the term "critical," which throughout the work designates the type of monism whose principles the author sets forth. But the clearness with which these principles are expressed, the charm of the style and the forcefulness and candor displayed in the discussion of existing defects in institutional morality, leave little to be desired when one considers the purpose which the book seeks to accomplish. "May this work," says the author in his brief preface, "contribute to the vindication and furtherance of the monistic movement"—better known in its scope and significance to German readers—"which is endeavoring to inaugurate a new age of spiritual and moral progress and ideal advancement, and place a larger number of mature citizens of every stratum of society in a position to think freely, will rightly, and feel nobly without the aid of supernatural incentives."

The last is significant if one reflects that in Germany liberty of belief and conscience, guaranteed as a constitutional right of the individual, there as here, is overridden by custom and public opinion, which are outgrowths of conditions far different from those that obtain in this country, and that the close connection of moral training with denominational religious instruction and dogma provides a situation in more open hostility to moral and social progress. The German Monist League, a "general humanistic movement" which a few years ago "had its initiative in the expansion of the theory of evolution," is endeavoring to combat this situation. For, says the monist, who admits that all genuine monism is also idealism, "idealism is not something which culminates on paper," but rather "a thing to inspire the mind with enthusiasm and devotion." A genuine philosophy, still more a true idealism, must perform its part actively in the work of "perfecting" and "ennobling" humanity.

"Monism and its Ideals" expresses in clear and untechnical fashion for the general reader the laws which, for countless ages, have governed the evolution of organic beings, and which, formulated as the three leading organic laws of life, must also guide humanity in its reasoned progress, a progress that is, nevertheless, but the continuation and enhancement of the evolutionary process.

The principles of monism and the scientific data upon which they are based are discussed under three captions, thought, will, and feeling, which mark the three main divisions of the work. Characteristic of the present age is its "mighty longing for truth, for an understanding of the world and life," a desire which can no longer be appeased "by the simple expedients of an earlier time—allusions to faith and revelation—but which turns eagerly to the sources that have distributed knowledge with so lavish a hand in the past hundred years, namely, to science itself." Part I., guided conveniently by Comte's three stages, is a brief statement of successive historical attempts at an understanding of the world and life. Materialism, idealism, mechanicalistic monism, psychical monism (which tends toward pan-psychism) and, finally, critical monism, have a common foe in ecclesiastical dualism. The latter has its origin in tradition and in the naïve thinking of an earlier time, but is supported by a powerful

institution. It is in the ethical sphere that its sharp antitheses and neglect of natural causal relations have the most fatal consequences, deadening conscience to the tasks of the earthly life and thwarting all effort for progress. Materialism and its successor, mechanical monism, correct in their insistence upon scientific method, fail obviously in their endeavor to bring within the scope of mechanical formulæ the complexity of organic life—to say nothing of human psychical life and civilization, while idealism and psychical monism, justly affirming as their starting-point the realities of our experience—psychical processes—far exceed present data in attempting to unfold from physical phenomena a psychical cause. Critical monism, faithful to its belief in the unity of the world of experience, but true also to its scientific insight, does not claim that this unity is empirically demonstrable. Profiting thankfully by the mistakes of mechanical and psychical monism, it sees in the world a dialectic of two methods of thinking, and consciously adopts these methods, one as the corrective of the other. Hence, with psychical monism, it proceeds from above downwards, with constant regard, however, to established results in the physical order, believing that by thus tunneling reality from opposite sides, a single pathway to a unitary conception of the world will ultimately be revealed to man.

Part II. If monism is of value it must have significance for man's practical life. Man is, first of all, an organic being and, though he has acquired a measure of independence from organic instincts and impulses and a certain degree of rational and moral self-determination, it is only by close attention to the laws of organic life that his progress may be assured. Since the creative energies first fashioned life on our planet, life has been threatened with destruction. It has maintained itself only through ceaseless reactions, through the uninterrupted exercise of functions, through struggle and suffering, on the part of organic beings. And now, with the forces of evolution diverted into new channels, man has become in a measure, through his consciousness, the controller of his own destiny. Of this man must become aware and avert the danger of retrogression and decline which has already overtaken races.

From the first law of life, which teaches that the race is preserved in a healthy and vigorous condition only by the skillful adaptation and suitable propagation of individuals, we learn that every man must be a "worker" in the social body, and that the latter must be so ordered that the greatest measure of efficiency may be secured from each individual. The rising generation must be given acquaintance with these facts and with those physical and moral laws which will secure to them a healthy posterity—facts which the other-world view of ecclesiastical ethics has neglected or purposely obscured.

The second law teaches that evolution tends always toward richer variety and greater capability of achievement on the part of individuals and races. Progress is not being accomplished by the reduction of all members of the human race to a dead level of equality, social, political, or moral. Evolution begins in approximate equality but tends toward

diversity, a fact which shows that increasing individuality no less than efficiency for the social welfare, is the goal of evolution in the human species. Materialistic philosophy, eudæmonistic, or hedonistic, ethics, ecclesiastical teaching, all lead from one point of view or another to determinism in morals, egoism, repression, and neglect of the greater part of all that is beautiful, helpful, and hopeful in life. Monism, in conscious recognition of evolutionary law, seeks the means by which this increasing diversity of endowment, interest, and purpose may be best turned to account in the progressive "perfecting" and "ennobling" of the individual. The third law, that of the reciprocal dependence of all stages of life upon one another and upon external conditions, carries with it the implication that the more highly endowed peoples and individuals must carry on the work of civilization, occupying the more responsible positions among nations and men. Only when leaders and educators realize their responsibility and answer the call to cooperate in the work of shaping correctly the individual and collective life will the social, like the organic body, thrive and make progress.

Thus monism, free from the clogs and hindrances of myth and supernaturalism, presents duties which are sufficiently high and arduous for any man who really desires self-improvement and the improvement of his kind. And, as the author endeavors to show in Part III., it will bring to humanity rich rewards in the refinement of man's feeling and sensibility. Nature, art, religion, and morality will remain inexhaustible sources of enjoyment and improvement. Nature will be better understood in its union with the psychical; art will be better appreciated; religion will continue to furnish much that will claim devotion and reverence, all the more as it will be seen in its organic connection with human life and history. Self-reliance, sympathy, generosity, and other forms of sentiment and emotion inseparable from nobility of character, will take the place of egoism (ill-concealed under the mask of piety), narrow, capricious and incidental love of neighbor, and misdirected charity which favors only weakness.

As regards its social conception, monism is likewise at variance with "unhistorical radicalism," for evolution means essentially continuity, not the extermination of preceding stages; with anarchism, which is an abnormal form of individualism; with eudæmonism, which is untrue to psychology and evolution; and, finally, with the doctrine of equality which, if allowed, would lead speedily to an equality of ignorance and poverty. Monism, moreover, does not desire to remove competition, but to increase it, securing by gradual adjustments and readjustments within society a fair field for all.

The book contains many fruitful conceptions, to which justice can not be done in the space allotted to a review, and it leaves upon the reader the impress of fairness and seriousness of purpose, which its open arraignment of evils fostered by ecclesiastical dualism does nothing to dispel. In the conclusion the reader is made acquainted with the efforts of the German Monist League to secure a system of education for the people, in

which "revealed" principles of Christian ethics may be supplemented by principles of morality which a scientific monism extracts from the history of organic life and human civilization. The appendix treats briefly the application of monism to politics with special reference to the electoral reform in Prussia, and translates its principles into a scheme for a more equitable representation of classes and parties than that which at present prevails. This portion of the book also is not without suggestion for the American reader.

CARL VERNON TOWER.

UNIVERSITY OF MICHIGAN.

Letters, Lectures and Addresses of Charles Edward Garman: A Memorial Volume prepared with the cooperation of the Class of 1884, Amherst College. ELIZA MINER GARMAN. Boston and New York: Houghton, Mifflin Company. Pp. xiii + 616.

To read the Garman volume is to cover one's face in shame. If ever one has thought well of his own teaching, if he has dwelt with complacent memory upon his apt phrases, his effective illustrations, his "sun-clear" expositions, reading the Garman volume, he casts himself down in utter abjectness, praying the high gods pardon for his miserable conceit. This, for the professional philosopher, is perhaps the most salutary effect of the volume. It is the picture of a remarkable man, a thinker of high thoughts, gifted with imagination, with wide grasp, with virile expression, and above all with the rare poet's power of seeing the infinite in the near at hand. In reading the papers one is reminded constantly of the great maker of parables; one finds here, too, that power to take the humdrum meanings by surprise, to draw from them unexpectedly their hidden treasures of truth and beauty. But above all one feels that here, too, the felicity and the power are not for their own sake; rather they are shot through with deep love—love of the work and of the young minds for whom the work was done.

A review of the philosophic contents of the volume must at best be unsatisfactory. What one wishes to know of this hard-working teacher is what he would have said to a larger philosophic public had he been free to use his time for constructive writing. One searches, therefore, through the present volume for the scattered bricks out of which to rear his philosophic structure. But the nature of the writings makes such a task impossible. They are in the main papers printed for class-room use and are therefore written from the point of view of the undergraduate's immature and more general interest. Although they cover well-nigh all the leading problems of philosophy, the pedagogical necessities make it impossible for them to treat the problems in the detailed and searching fashion requisite in constructive philosophy. It would be unfair to build a philosophy out of these papers and eminently unjust to criticize shortcomings that a presentation for a different audience might have avoided.

Yet it is possible to discover certain leading tendencies of thought in Professor Garman's work. Living in the years when the apriorist

was battling with the sensationalist, the mechanist with the idealist, the automatist with the spiritualist, Professor Garman has no hesitancy in taking his side in the controversy. He is Kantian, Hegelian, Greenian. Thought is not a function of the brain. Whereas physical matter moves in the line of least resistance, thought moves in the line of greatest resistance. It considers, reflects, holds back, chooses. It demands evidence; it judges. Its act of judgment, moreover, is an act of "freeing itself from the bondage of appearances, that is, from the world as seen through the senses." Only by reaching a position above sensationalism, he holds, can we combat the somber doctrines of Huxley, Spencer, Kidd.

No solution, however, of any problem can be reached in purely human terms. The real justification of any ultimate faith in life, of a conviction as to human values, lies in thinking the universe as the manifestation of one eternal life. Professor Garman calls this view indifferently theism and monism. It is not easy to determine quite what he means by the doctrine, as it is nowhere developed with critical detail. Yet the thought is so constantly present in all his writings that we must seek some understanding of it. The clearest definition is given in passing (p. 247): "The other extreme [to fetichism] is theism (than which a broader, grander idea of the universe is impossible); it is this: God or Spirit is the only independent reality, and any other being or event is but a 'phase' or 'state' or 'product' of this activity. He is 'all in all.'" This God or Spirit is personal, notwithstanding that Professor Garman quotes with approval Fichte's

"the Eternal One

Lives in my life, and sees in my beholding.

Naught is but God, and God is naught but life."

No resolution of the difficulties involved in the conception of such an "all in all" as "personal" is offered. Professor Garman takes it for granted that the two ideas are perfectly compatible. Throughout his writings it is not difficult to see that his theistic or monistic thought is actuated by two different requirements, the scientific and the ethical. The scientific situation calls for the oneness of truth, for a world of coherence, of rationality. This oneness, however, which, so far as scientific needs are concerned, might be impersonal, is, by reason of ethical demands, conceived as one mind. The passage from the one situation to the other is nowhere clearly justified; indeed, the thought, throughout, is set down in such bare outline that most of the really perplexing problems are untouched.

Immortality, for Professor Garman, has its ground in the being of God. It is guaranteed by "the law of the divine self-consciousness," the law, namely, that there can be no subject without an object. Hence if God is self-conscious he must have objects as eternal as himself (p. 106). "As sure as He is immortal these shall be also." "Because I live, ye shall live also" (p. 105). "This assures us of immortality that is personal, but not that all men shall be immortal. Here we can not solve

the problem; we must leave that to revelation." "[God] has all truth, man only a little, but that is a difference in quantity, a difference unimportant from the point of view of eternity." Yet in the midst of language which would seem to make God one member of a society of persons, we have such perplexing expressions as these (p. 111): "No line can be drawn between where God ends and man begins, any more than you can say where the ocean ends and the waves of the ocean begin. The finite does not limit the infinite. The infinite includes (not excludes) the finite" (p. 127). "In the sense that man has a direct and personal relation to God and receives help from him as the electric light receives from a dynamo, I am a mystic." Again, expressions are not lacking which would seem to point to a world of reciprocal causality, God being the world in its mutual interaction.

The ethical papers are particularly clear-cut and straight to the issue. It is easy to see that Professor Garman's heart was mainly in the ethical outcome of his thinking and teaching. As he says in one of his outlines: "Our fourth topic is Ethics. This is the inspiration of all our work. We attempt to show that man is not simply a thinking machine, etc." The anti-hedonistic trend of his ethical thought is indicated by the titles of the three papers on the "Principles of Living": "The Will and the Sentiments," "Pleasure or Righteousness," "Expediency as a Working Principle." Four papers on the "Political and Social Order": "Authority and Punishment," "Sovereignty from the Standpoint of Theism," "The Members of the State," "The Right of Property" exhibit his metaphysical (theistic) prepossessions. The paper on sovereignty is in particular a striking example of the effort to reconcile a monarchic-absolutist conception of deity with democratic principles of social order. Three papers follow on "Social Progress": "Scientific Ideals and Social Practice," "The Coming Reform," "The Twentieth Century." The second is a strong argument for personal regeneration as the key to social betterment.

The volume, as a whole, is divided into three parts: Part I., Philosophical Papers (twenty papers under the captions: "Aims and Methods," "Nature and Spirit," "The Principles of Living," "The Political and Social Order," "Social Progress"); Part II., Miscellaneous Papers and Addresses on Education and Life; Part III., Letters. One can not read the third part without feeling something of the warmth of love that must have issued from the man, the inspiration to the high things, the stimulus to single-minded effort. The volume is indeed no extensive contribution to technical philosophy; it is better than that: it is an inspiration to life.

The editors are to be commended for the careful, scholarly performance of their difficult task.

H. A. OVERSTREET.

UNIVERSITY OF CALIFORNIA.

JOURNALS AND NEW BOOKS

MIND. April, 1910. *On Appearance Error and Contradiction* (pp. 153-185): F. H. BRADLEY. - There is no such thing as absolute error or absolute truth. All appearance is both truth and error. Contradiction in the proper sense is made only by reflexion. Objection is made to Professor Royce's doctrine of number and to opinions in mathematics of Mr. Russell. *Linguistic Misunderstandings* (pp. 186-199): HUGH MAC-COLL. - Writer objects to claim that a system of geometry can be "valid" without being "true." *Physiological and Psychological* (pp. 200-217): W. H. WINCH. - Welcomes the modern emphasis on physiology in psychology, but makes claims for psychological method as opposed to physiological method. Is structure or function more accessible? Arguments run from function to structure much more frequently than from structure to function. Therapeutic methods are psychological in treatment of mental defects. *The Humanist Theory of Value, a Criticism* (pp. 218-230): OLIVER C. QUICK. - Value must be distinguished from utility. "It is convenient to restrict the term pragmatism to the logical method which asserts that the truth of all judgments is to be tested by the value [=utility] they are found to possess and to reserve the term humanism for the epistemological theory that truth itself is a kind of value." Humanism "makes the highly disputable assumption that the category of reality, the fact-attitude of the mind, is less ultimate and fundamental than the category of value or the value-attitude." *Discussions: Philosophic Pre-Copernicanism* (pp. 231-237): D. L. MURRAY. - A criticism of certain portions of Prichard's "Kant's Theory of Knowledge." *The Enumerative Universal Proposition and the First Figure of the Syllogism* (pp. 238-241): W. J. ROBERTS. - According to some authors, statements purporting to be syllogisms in which the major premise has been obtained by a complete enumeration of instances are spurious syllogisms. Nevertheless, in certain cases, complete enumeration provides a basis for logical inference. *Critical Notices*: R. G. Bury, *The Symposium of Plato*: A. E. TAYLOR. C. M. Bakewell, *Source-Book in Ancient Philosophy*: A. E. TAYLOR. A. C. Seward (edited by), *Darwin and Modern Science*: W. R. SORLEY. William James, *The Meaning of Truth*: F. C. S. SCHILLER. I. E. Miller, *The Psychology of Thinking*: HOWARD V. KNOX. J. Cohn, *Voraussetzungen und Ziele des Erkennens*: H. W. BLUNT. *New Books. Philosophical Periodicals.*

REVUE NEO-SCOLASTIQUE DE PHILOSOPHIE. May, 1910. *La vie de l'intelligence* (pp. 165-180): CLODIUS PIAT. - Empiricism is bound to fail in its explanation of the infinity of our mental concepts, because it refuses to admit the possibility of abstraction. *La philosophie de Karl Marx* (pp. 181-210): CARMELO SCALIA. - Marx's philosophy is derived from Feuerbach's materialism, corrected, however, by Hegelian reminiscences. It is a new materialism, in which sensible reality is in a state of perpetual becoming. *Les Frontières de la logique* (pp. 211-233):

L. NOËL. — Modern thought has often endeavored to subordinate logic to psychology. There is, however, a sharp line of demarcation between the laws of psychical activity and the laws of thought. As shown by Husserl and other recent philosophers, the psychical act is essentially subjective, whereas the laws of thought refer to an objective reality. *Variétés. La Logique du style gothique* (pp. 234-245): R. LEMAIRE. — The Gothic style of architecture forms a complete and logical whole, the essence of which lies in the branches of ogives. *L'œuvre scientifique et philosophique de César Lombroso* (pp. 245-255): A. GEMELLI. — A critical study of Lombroso's theories of criminality and genius. *Un centre néo-thomiste en Colombie* (pp. 256-260): J. L. PERRIER. — An interesting center of the Neo-Thomistic movement is the College of the Rosary, in Bogota. *Bulletin d'histoire de la philosophie ancienne* (pp. 261-276): A. MASSION. — A review of the recent works on ancient philosophy. *Comptes rendus*. Cl. Piat, *La morale du bonheur*: P. HARMIGNIE. L. Stein, *Le sens de l'existence*: L. CORDONNIER. *De la méthode dans les sciences*: M. D. G. Zuccante, *Socrate. Fonti, Ambiente, Vita, Dottrina*: C. SCALIA. Foerster, *L'école et le caractère*: G. RYCKMANS. Paul Carus, *Philosophy as a Science*: G. L. E. von Cyon, *Leib, Seele, und Geist*: E. B. P. M. Carreño, *Filosofía del Derecho*: P. HARMIGNIE. Del Vecchio, *Il Concetto della natura e il principio del diritto*: P. HARMIGNIE. F. Leenhardt, *L'évolution, doctrine de liberté*: C. MATHIEU. *Études sur l'histoire des religions*. Carra de Vaux, *La doctrine de l'Islam*; de la Vallée Poussin, *Bouddhisme*: A. N. Frischeisen-Köhler, *Abriss der Geschichte der Philosophie*: G. WALLERAND. Tredici, *Breve corso di storia della filosofia*: A. N. *Chronique philosophique. Sommaire idéologique des ouvrages et revues de philosophie*.

REVUE PHILOSOPHIQUE. July, 1910. *Les bases biologiques, psychologiques, et sociologiques du droit* (pp. 1-20): NOVICOW. — The desire to live, to seek pleasure and avoid pain, the faculties of sensation, memory, and imagination as related to will, and the principle of division of labor form the bases of law. *La sincérité du savant* (pp. 21-43): DR. DROMARD. — The sincerity of the scientist is in the effacement of the man, but it is not an ordinary thing to be a scientist, and it is still more rare to be a man. *Recherches sur la théorie des valeurs (fin)* (pp. 44-75): G. FONSEGRIVE. — To create a philosophy of values is to make the sensibility the measure of all things. If such a philosophy would not be individualistic, it must be submitted to the hegemony of morality. *Analyses et comptes rendus*. J. Sully, *The Teacher's Handbook of Psychology*: DR. J. PHILIPPE. Mendousse, *L'âme de l'adolescent*: DR. J. PHILIPPE. Foerster, *L'école et le caractère*: DR. J. PHILIPPE. Persigout, *Essais de pédologie générale*: DR. J. PHILIPPE. Ch. Lalo, *Les sentiments esthétiques*: L. DAURIAC. Jean d'Undine, *L'art et le geste*: CH. LALO. Miceli, *Il sentimento del dovere nella conversione del l'Innominato*: J. SEGOND. A. Léon, *Les éléments cartésiens de la doctrine spinoziste*: A. PENJON. Palhories, *Rosmini*: J. SEGOND. Kohut, *Feuerbach, sein Leben und seine Werke*: M. ANTHROPOS.

REVUE DE METAPHYSIQUE ET DE MORALE. May, 1910. *La théorie des types logiques* (pp. 263-301): B. RUSSELL. - An attempt to dispel certain difficulties and unclearnesses pointed out by M. Poincaré in a paper of Mr. Russell's in the *American Journal of Mathematics*. *Correspondance inédite de Ch. Renouvier et de Ch. Secrétan (suite)* (pp. 302-317). - A continuation of the personal and philosophic correspondence of these two men. *F. Rauch: sa psychologie de la connaissance et de l'action* (pp. 318-344): H. DAUDIN. - A continuation of the exposition of this author's philosophy, to which is added a bibliography of his writings. *Discussions. Note sur les deux derniers arguments de Zéno d'Élée contre l'existence du mouvement*: J. LACHELIER. *Questions pratiques. Le procès de la Démocratie (suite)*: GUY-GRAND. *Supplément*.

Ach, Narziss. Ueber den Willensakt und das Temperament: eine experimentelle Untersuchung. Leipzig: Quelle and Meyer. 1910. Pp. xii + 324. 6.50 M.

Adams, George Plimpton. The Mystical Elements in Hegel's Early Theological Writings. University of California Publications in Philosophy. Vol. 2, No. 4. Berkeley, Cal.: University Press. 1910. Pp. 67-102.

Brown, Warner. The Judgment of Difference with Special Reference to the Doctrine of the Threshold, in the Case of Lifted Weights. University of California Publications in Psychology. Vol. 1, No. 1. Berkeley, Cal.: The University Press. 1910. Pp. 1-71.

Dearborn, Walter Fenno. School and University Grades. Bulletin of the University of Wisconsin No. 368: High School Series, No. 9. Madison, Wis.: University Press. 1910. Pp. 59.

Del Vecchio, Giorgio. Sull' idea di una Scienza del Diritto Universale Comparato. Comunicazione letta al Congress filosofico di Heidelberg il 4 settembre, 1908. Torino: Fratelli Bocca. 1909. Pp. 34.

Del Vecchio, Jorge. El Sentimiento Juridico. Traducción de la segunda edición italiana por Mariano Castaño. Madrid: Hijos de Reus. 1909. Pp. 20.

Driesch, Hans. Zweie Vorträge zur Naturphilosophie. Leipzig: Wilhelm Engelmann. Pp. iv + 38. 80 pf.

Friedrich, Julius. Die Bestrafung der Motive und die Motive der Bestrafung. Berlin und Leipzig: Dr. Walter Rothschild. 1910. Pp. vi + 312. 8 M.

Gillette, King C. World Corporation. Boston: The New England News Co. 1910. Pp. vi + 240.

Lewkowitz, A. Hegel's Ästhetik im Verhältnis zu Schiller. Leipzig: Verlag der Dürf'schen Buchhandlung. 1910. Pp. 76. 1.80 M.

Lomer, Gerhard R. The Concept of Method. Contributions to Education No. 34. New York: Teachers College, Columbia University. 1910. Pp. 99.

- Petsch, Robert. Lessings Briefwechsel mit Mendelssohn und Nicolai über das Trauerspiel. Leipzig: Verlag der Dürr'schen Buchhandlung. 1910. Pp. iv + 144. 3 M.
- Phillippe, Jean et Boncour, Paul. L'Education des Anormaux. Paris: Alcan. 1910. Pp. 213. 2.50 fr.
- Pichler, Hans. Ueber Christian Wolff's Ontologie. Leipzig: Verlag der Dürr'schen Buchhandlung. 1910. Pp. 91. 2 M.
- Roubinovitch, J. Aliénés et Anormaux. Paris: Alcan. 1910. Pp. 320.
- Schridde, Georg. Gustav Freytags Kultur- und Geschichtspsychologie: Ein Beitrag zur Geschichte der Geschichtsphilosophie. Leipzig: Verlag der Dürr'schen Buchhandlung. 1910. Pp. ix + 95. 3 M.
- Snowden, James H. The World a Spiritual System. New York: The Macmillan Company. 1910. Pp. xiii + 316. \$1.50.
- Vierkandt, Alfred. Die Stetigkeit im Kulturwandel. Leipzig: Duncker & Humblot. 1908. Pp. xiv + 209.

NOTES AND NEWS

MR. H. A. OVERSTREET, associate professor of philosophy in the University of California, has been elected to the professorship of philosophy in the College of the City of New York. His duties there will begin in January, 1911. Professor Overstreet graduated from the University of California in 1898. For the three years following he was a student at Oxford, doing much of his work under Mr. J. A. Smith, now Waynflete professor at that University. After taking his degree at Oxford he returned to the University of California as instructor in philosophy. Professor Overstreet has been interested especially in the German idealists and the Neo-Platonists. More recently his work has been in the field of social ethics. Since the retirement of Professor Howison much of the work of administering the department has been in his hands.

THE Cambridge University Press will publish before long "The Cambridge Manuals of Science and Literature." The Manuals are intended to provide accounts for the competent reader, of recent discoveries and contemporary movements. The series will include "The Coming of Evolution" by Professor J. W. Judd, "Heredity" by L. Doncaster, and "The Idea of God in Early Religions" by F. B. Jevons.

WE take the following from the New York *Nation* of October 6: "The death is announced from Caen of the aged French philosopher J. A. Emmanuel Chauvet. He was professor of philosophy at Caen from 1870 until 1899, when he retired, and besides publishing many essays he collaborated on a translation of the works of Plato."

IT is expected that the new edition of the *Encyclopædia Britannica* will be ready towards the end of this year, in twenty-eight quarto volumes. The work is controlled by the University of Cambridge.

THE JOURNAL OF PHILOSOPHY

PSYCHOLOGY AND SCIENTIFIC METHODS

THE LYRIC PHILOSOPHER

A N industrious age like ours is little tolerant of the industry of persons whose products are unobvious and whose occupation is with recondite matters. If they be not astrology and magic, they have no foothold in the imagination; they are judged to be as futile as a flute played in a vacuum. Nowadays, as never before, the philosopher is under duress to give some reason for encumbering the earth and taking the bread from the mouths of better if not poorer men. The financier keeps money in circulation and saves the country by manipulating the stock-market and monopolizing the necessities of life. His daily affair is to make essentials dearer than luxuries and to impart to our routinal humdrum a romantic and breathless uncertainty. The engineer builds subways and gas-houses, water-works and railways. He enables us still to excel in speed to some unthought-of goal. The clergyman still assures us of post-terrestrial happiness and doles out our bounty, sacrificial sops to jealous divinity, to the needy and the submerged. The actor, the musician, the painter, and the tobaccoist add to our dignity by supplying us with private civilization at trustworthy rates and with public pleasures at appropriately protected prices. Astronomers enliven the newspapers with cometary prophecies and assurance of immunity from the evil in its train. Psychologists—oh, name to conjure with!—according to their breed, discover hidden thoughts, interpret dreams, practise healing and bring back to chaos and primeval night the business of guiding our young on the straight and narrow way they should go. Of all these, their lives justify their living. The philosopher alone is called upon to reveal to the world and the college president the utility of his calling and the net value of his stock-in-trade in advertisement or dollars and cents. He most of all must show cause why he should not be hanged by the neck until he is useful in this our world of tangible excellences and machine-made beauties. Cultivator of an extraordinary gift of

tongues and a supercilious manner, what else does he create that a tariff has power to protect and a plutocracy capacity to honor?

Strange egoist, he hurls in the teeth of the age's challenge the wind-blown fruit of his puzzling labors. It is philosophy, his imprudent action tells us, that keeps the philosopher above par.

But what is philosophy, more than a jumble of uncultivated names for common and garden things, of violent paradoxes and strange epithets, awkward mouthings, mysterious through emptiness? What megalomaniac end does it serve, what excellence of "efficiency" purvey, hidden though enormous, that confirms its devotee's claim to honorable and even superior rank among the delights of money-grubbing and barter, industry and musical comedy? Truth to tell, none. Set beside art, or science, or religion, philosophy appears barren though noisy. It nests, but breeds nothing. Modern philosophy, especially, has added not a little to the ancient visions, Hellenic or Hebraic. The issues between appearance and reality, between the natural and the magical, the flowing and the static are still whirlpools in the oceans of talk that splash between islands of misunderstanding—whirlpools of language more cumbersome and an idiom more barbarous than any Charybdis the ancients ever hit upon. Science, in its brief three hundred years, appears to have heaped upon man benefits infinitely greater than the whole immemorial tradition of philosophy. Poetry—when its lover contrasts it with philosophy, then woe to philosophy indeed! Poetry, the eye of man which seeks out nature's soul and all its secrets, the voice of man which bears to all the skies, his joys and sorrows—such are the proud titles and high pedigree of poetry, while philosophy. . . .

The contrast gives me pause, not breathless pause, but the pause which arrests a fluent poet whose inspiration, not whose health, has suddenly given out. Fortunately another anti-philosopher has latterly drawn the contrast between philosophy and poetry, drawn it with excellent humor and some moral fervor.¹ Let him utter the thing I can not. Let him say the thing I do not believe, that philosophy is unpoetical. So then: Poetry sees what philosophy is blind to. "There are more things in heaven and earth than are dreamt of in your philosophy." Poetry records its vision in words that render the unutterable sweet tumult of life itself, imprison and keep alive its sparkling meanings and flashing intentions; philosophy disguises common things in uncouth and low-born technicalities, loads them with dead decorations that choke the pulsing blood of them. Poetry is detailed, circumscribed, concrete; it knows "how hearts are beat-

¹ Mr. H. C. Goddard, in Vol. VII., No. 5, of the *JOURNAL OF PHILOSOPHY, PSYCHOLOGY, AND SCIENTIFIC METHODS*, in an article he calls "Literature and the 'New' Philosophy."

ing in the cities, how the birds are singing in the woods, how the storms are tossing the sailors on the sea." Philosophy is schematic, empty, a mere bird's-eye view and diagram of hearts and seas and cities; it knows only the form and configuration of reality, not its fiber and tissue. Philosophy is but a wooden cup, poetry a rich, ancient, ever-renewing wine that quickens the senses of the senseless, that gets at "life's third dimension." Philosophy skims the surface of things, poetry goes *in*. Poetry traffics with the souls of things, philosophy is the dupe of mere words.

And the philosopher—"A little tailor into whose shop the universe has wandered in search of a ready-made coat and trousers. The little tailor, bent solely on providing a perfect 'fit,' leaves quite out of account the question of 'the goods' themselves, whether they be gray or scarlet, tweed or calico. The universe, perceiving that the little tailor's mind has been affected, arises and departs. But he, quite unconscious that his customer has gone, does not relax his search, and long afterwards we catch glimpses of him, through the window, still absorbed in the quest (and coming, perhaps, all unawares, ever nearer and nearer the attainment) of that highly ideal entity, the substance of a perfect fit."

Could King Cophetua's beggar maid have been born to worse estate than this lover of theology's fallen handmaiden? A mad tailor, hunting for the universe the substance of a perfect fit! If that be all he be, can his be a more unfit destiny? But there is a gleam of hope; the tailor may recover his sanity by becoming a poet, whose eye in fine frenzy rolling will roll from substance to hearts and cities and seas. Salvation for the tailor, Mr. Goddard thinks, will come by way of the "new" philosophy, the philosophy of Henri Bergson and William James. "Their very pith and upshot is a call to philosophy to come from these far excursions over the surface of life and to discover life's third dimension."

Whereto there is perhaps a seasoning of reason, but no rhyme. For philosophy is also life, and if poetry is getting at life's third dimension, this sweet singer has not reached the third dimension of philosophy. He is not *in*, he merely skims the surface, to the right, and to the left, and round about. To get in he must learn how to celebrate philosophy as he celebrates poetry, for her glory and her achievement and her unconscious heavy labor to lighten the hearts of men and save the human soul. He must see philosophy real and see her whole, with eyes undimmed and will unseduced by carnal visions and gaëtic joys. He must apply the method of the "new" philosophy also to philosophy; must take her as an earthly poet takes a sunrise or a woman's face—as a crescent splendor, a commanding sweetness, the very fruit and flower of an immediate intui-

tion. So he will discover that if philosophy is schemes and patterns, these are of themselves noble events in life's sensible tumult and emotional lope. His Bergsonian eye will apprehend the vivid immediacy of the universal diagram itself. His radically empirical intuition will contemplate the concrete bliss treasured in the very map which is the philosophic map-maker's handiwork. A pragmatist, true-seeing, his glance will fasten, in the poor mad tailor's enterprise, on the moral glory of its intent and the cosmic pathos of its failure. He will find both mirth and tears in the direct apprehension of that loving, loyal care, that disinterested absorption, which seeks for the universe the "substance of a perfect fit." Perhaps the secret of philosophy's hitherto unbroken and unchallenged strength is this very madness, this absorption, this care. If this it be, then philosophy is more poetical than poetry, more useful than use. It is instrument and melody in one, and at one same time.

For what poet manifests the bright devotion and the sacrificial piety of that mad tailor? What rhymers, his wisdom and his poise? The firm, careful dialectical touch which cuts to a proper "fit" the sole thing that decently veils the naked cruelty of the universe—our discourse of it—surely, it has a fitter claim to poet's devotion than the bare reality itself!

And this "substance" of the "fit"? And all the substances of philosophy, from the magically potent stone to the magically impotent eternal and universal will? Are they not new things in the world, enriching it? Why, far from contracting our little earth, philosophy expands it. Far from being a thief in the night, despoiling us of third dimensions, she gathers and creates for us jewels of exceeding price. Philosophy is a flowering of the spirit, not a turning over of dry earth. Like a lily in mud, she consumes her black and oozy source and turns it to a white delight. The "substance of a perfect 'fit'" is a consummation in excellence, not a distraction of madness, unless madness be indeed divine.

How thankless, then, to request the philosopher to "open his eyes to just that world of sense from which poetry has been gathering such fruitful harvest"! On the contrary, it is because the philosophic eye has been from the beginning wide open to the world of sense that it turns the beaming orb with fond longing to the world of non-sense. It is because the philosophic public is so painfully and deeply aware of "life's third dimension" that it chooses to follow its chieftains on these wide-winged adventures into dimensions of the fourth and the fifth and the n th degree, where no weak and unpractised pinion can pursue, no lumpish soul sustain itself. The truest and most loyal of all poets is the philosopher. He, alone of them all, truly sees visions and dreams dreams. He, alone of them

all, can live in other and alien worlds, to sense barred fast, invisible to the fleshly eye. And these worlds, so far beyond the terrestrial gate, may not endure earth-born names and common characters. To envisage their essence and to fixate their natures requires a rare, exotic speech, an imaginative power far exceeding any given to an earthly singer of the heavy earth.

Consider! What Homer or what Shakespeare, in his poems, has ever equaled the awful and inexorable glory of the Democritan void with its infinite atoms, the sweet and utter luminousness of the Platonic order of ideal excellences? What merely sensational rhapsodist can follow Plotinus to the superessential One? To whom has not the quaintly admirable assurance of the Thomian *Summa* been a seat of cosmic repose? What parallel is there anywhere in "literature" for that unequaled, overwhelming terrible vision of Spinoza's supreme imagination—the presence of the living God of infinite attributes and infinite modes, infinitely active and always existing? What more rare yet homely insight than the cosmic dream of poor, pedantic, protestant Kant, with his "moral law within and the starry heavens without"? Who has not entered the richest world of sane unreason that has read Hegel with even vicarious understanding? To come nearer home: what tragic poet has, like Mr. Bradley, with such admirable candor, with such simplicity, such incisiveness, ever brought us to the ominous realization of the puny weakness of human reason before the unconquerable impenetrability of things? What poet has ever made us so feel the dread imminence of the absolute? Or again, who that smote the lyre in prehistoric times or in these latter days concocted rhymes, has passed the gates of the world like Nietzsche or has seen hope in despair, orderly excellence even in tumultuous chaos as has Professor Royce, with his cheerful absolute, untiringly at work on its unending, self-chosen, self-representative task? And the prophets of the "new" philosophy themselves, Bergson and William James, what greatness or inspiration would be in them without just the sweep and range, in and out and about, of their *philosophic* vision, without their trans-sensational look *through* and beyond stocks and stones and brutish things?

Nay, tell me not in mournful numbers of philosophy's sad plight, nor sing me Salvation Army praises of your efficient engineer, your artifactor, your man of money, your mere poet and his puny world, his uses, his sensations, his images. Beside the philosopher, even the poorest, your poet is a worm in a puddle. His stars are bits of eggshells; his forests, fungi; his sun, a dying cigar-butt. But show me a philosopher and you show me a mortal who has worlds at his command, who juggles with infinitudes, who makes a plaything of gods. You show me in the subjective idealist a Chante-

cler who causes the sun to rise with his crow; in the pragmatist a Prometheus who ravishes the fire of truth from heaven to prepare the human feast withal; in the realist a Hercules whose twelve labors are to clear away the underbrush of human superstition and ineptitude.

In sad, sober, earnest, philosophy's trouble is not that it is not literary enough. Philosophy's trouble is being too literary. Philosophers are not crippled with blindness to "life's third dimension." They are marred with sensitiveness to too many additional dimensions. They do not make the world poorer, they trouble it rather with surfeit. Their craft does not suffer from too little art; it suffers from too much art. Far from lacking the gift of tongues, philosophy has so many that they make a babel.

For men may philosophize as a slave labors or a bird sings. A philosophy is extorted from men by the environment which clamors to be socially known, understood, and controlled, on the penalty of pain and of death. Again, a philosophy may be the inevitable and spontaneous flowering of the human spirit, just the actualization of one of the potencies of organic existence, just birds singing. Our world being what it is, either of these types by itself, is bad. The domination of the first type—historically represented by the patristic and theological philosophies—is perverting and illiberal; the domination of the second type—historically represented by the various psychologisms and idealisms—is at least, trivial, ultimately, suicidal. A good philosophy may be neither slavish or earthy, in bondage to thoughts and things, nor irrelevant and anarchic, in bondage to human nature alone. In the long run philosophy has been perhaps too human, too much concerned with merely our hopes and ideals, too unconcerned with the real, actual world which is the condition of their realization and satisfaction. If the "new" philosophy is to save philosophy, it will not turn philosophers into poets, it will turn philosophers into scientists. It will, in aim and method, fuse the labor and the song, identify instrument and end, service with self-expression, truth with excellence. In philosophizing, the "new" philosophy will say, let use be married to joy.

H. M. KALLEN.

HARVARD UNIVERSITY.

KNOWLEDGE AND VOLITION

CENTRAL in modern epistemology is the problem of the relation between knowledge and volition. The omnipresent tendency of recent psychology to conceive of the various functions of mental life as thoroughly interrelated and subordinated to action has re-

sulted in a new conception of the place of intellect. Knowledge and volition are no longer conceived to be disjunct activities, but as mutually dependent—no will without idea, no idea apart from will. From the connection of the two, far-reaching deductions as to the fundamental character of reality have been drawn. Scientific psychology has apparently lent support to the theory of the primacy of will—hence a new impetus to Neo-Fichtean speculation. It is my purpose, so far as possible in a short paper, to set forth certain misconceptions which I believe to inhere in recent discussions of this problem and so, as result, to win some greater clearness as to the genuine solution. Rickert in Germany, Royce and Münsterberg in this country, have made most prominent speculative capital out of the alleged connection between will and cognition, and I shall use the views of these thinkers as a basis for a critical inquiry.

Despite many differences of detail, the argument of all thinkers of this school is clear and single. The judgment is the unit of knowledge—the judgment is essentially the affirmation of the meaning of an idea. The object of knowledge has no real presence in the mind, but only appears there vicariously through the ideas used in judgment. But the mere existence of ideas in the mind does not itself suffice for knowledge. In night-dream and day-dream, in inattentive perceptual experience, ideas lie in the mind as a picture stands in its frame, but nevertheless, do not know. In order to know, ideas must be *employed*; they must be affirmed, asserted, or recognized (“*bejaht*” or “*anerkannt*”)—but “assertion” is an act of will; hence all knowledge is voluntary.

Yet it would be quite too naïve to suppose that knowledge is contained in the mere assertion of an idea. If assertion is voluntary merely, one could assert or deny anything. Any wanton suggestion, if affirmed, would be true. What makes the difference between true assertion and false assertion? The element of assertion differentiates the judgment from the mere assumption or suggestion, but, belonging to both true and false judgment, can not serve as criterion between them. The standard of judgment does not lie within mere assertion, yet can not lie outside of judgment. There is no exit from idea into reality. One can not somehow stand above both and, by comparing, declare whether the idea is true of the fact. Such a comparison could be effected only by means of another idea, whose truth would require for its determination a further comparison and use of an idea, and so on, *ad infinitum*. The standard of truth must lie within the judgment function. If not in the idea, and not in assertion as such, then where?

The answer, according to Rickert, is to be derived from the following considerations. Although assertion is voluntary, it is not

therefore capricious. The normal act of will is determined by values, that is, by feelings, and feelings are always pleasure and pain. The judgment expresses a genuine interest. Yet the value which the judgment expresses is no ordinary one, relative to the moment and the individual. It is authoritative like the prompting of conscience, a Kantian imperative, timeless and eternal, in the realm of intellect, overruling caprice and mere individual preference. And just as the Kantian moral law was revealed to the conscience and became efficacious through the feeling of "respect," so this imperative manifests itself in a *peculiar* feeling, that of *certainty*, the "Drang" which accompanies all cognitive acts. Yet, though timeless and constraining, the "ought" of the intellectual conscience, like the moral law, is autonomous, its binding force depends on the individual "will to know." This ought is the genuine object of knowledge, and the Being which other epistemological theories regard as that *about* which I judge, is really *that which* I ought to judge. An object, a being, is not ready-made and inviting to judgment—for all that is found is content of consciousness—it is a something actively wrought by the judgment, not the product of capricious manufacture, of course, but of a lawful and careful art. An object, an independent being controlling our fancy and guiding our knowledge, has no meaning for us except that which we ought to recognize.

Royce, accepting in general the foregoing analysis and supporting it by the recent psychological doctrine of the "motor aspect" of ideas, explicitly identifies the meaning of an idea with the will of an idea, and uses this identification as the basis of the most insistent theodicy which has yet appeared and of the entire voluntaristic side of his idealistic Spinozism. Rickert leaves the ought in the shape of a Kantian imperative, Royce erects it into a metaphysical entity. The reasoning is briefly put thus. The true judgment, according to the foregoing, is one which conforms to the intellectual ought. But a mere ought is no more valid in the sphere of thinking than in any other realm of activity. The ought is authoritative only if it expresses my own will. If those ideas are true which I ought to assert, then those are true which express my will. Or, since truth is the fulfillment of the meaning of our ideas, and that meaning is their will, the truth must fulfill the will, wherefore the universe must be ultimately satisfactory, not, to be sure, to this momentary complaining self of mine, but to that self which, in judging things to be as they are, expresses its will in so judging. If we did not will to find things as they are, we should never be able to complain of them. Since, lastly, the interest which truth expresses is permanent and universal, it is no mere empirical interest, but the interest or the will of the absolute (the "over-individual" will) with which we feel our-

selves identical whenever we experience the compulsion which attaches to all true ideas.

Such, in brief, is the argument. Is it cogent?

No one nowadays would venture to deny that ideas are motor or that in judgment they are more than a mere train, being combined with an element corresponding to what is meant by "assertion." There is a difference in character between the idea which is a representative of reality, the idea of San Francisco, for example, and the mere fancy, such as, say, Cloud Cuckooland. Undoubtedly this character is connected with the motor side of mental life. Knowledge is, then, an act, and so may be called an affair of will, in the widest sense. Yet because ideas are motor they are not for that reason voluntary, and because knowledge is an act it is not therefore purposive. To believe so is to fall back from Spinoza to Descartes.

One initial mistake on Rickert's part consists in separating the element of assertion or recognition from the idea. According to his analysis there are *two* things in knowledge: an idea, and the affirmation thereof, the one passive, the other active. In fact, however, the idea is itself active and affirms itself. Knowledge does not involve the willing consent of the self to the idea. The process is single; an objectifying idea. Call up any memorial idea. Or consider again the idea of San Francisco. In itself it is assertive.

This false separation appears most flagrant in Rickert's interpretation of every judgment as the affirmation or rejection of a neutral suggestion, as the answer, "yes" or "no" to a question.¹ If the content of every question were actually quite neutral, how could it ever be answered? A question can be answered only because it already contains, in part, the affirmation of an object. Every question implies a previous affirmation, every doubt implies knowledge. If every judgment could be turned into a genuine question, there would be no possibility of knowledge. As a fact, of course, certain judgments can be questioned only rhetorically, not really. There are ideas which affirm themselves and on the basis of these every question is answered. Such ideas are, for example, true perceptual ideas.

The element of assertion is, then, not really separable from the idea, is not something external to it. It is intrinsic to the idea itself. The idea is not "lifeless like a picture on a panel, but is the very act of the understanding itself."

Furthermore, it is a mistake on Rickert's part to regard this element of assertion as determined by a preceding feeling, that of certainty. Certainty does not precede the affirmation of an idea, but rather accompanies it. It is not as if we said, such an idea is pleasant to entertain, such an idea would realize my interests, *therefore*, I

¹ "Der Gegenstand der Erkenntnis," p. 108.

judge. Certainty inheres in the very act of affirmation. Idea, assertion, certainty are simultaneous elements of one single process, the process of judgment. Certainty is strictly analogous either to the pleasures which accompany any successful action or to the sensuous and esthetic feelings. Like the latter it may imply a prearranged adequacy between the organ, that of a cognition, and the object, which impels the one to keep in contact with the other. Such is the certainty which attends perceptual experience and all genuinely *a priori* knowledge. Like the former, it may demand a winning of this adequacy, as is the case with all meditated cognition. In both cases, however, it is an incident of a process, not the instigator of a process. Certainty is the feeling which attends the attainment and maintenance of an affirmation. It is, then, not a value which determines the judgment. And it is a *must*, not an ought. I can not help breathing in the odor of a rose, be it ever so slightly; nor can I keep myself from avoiding the prick of its thorns.

It is no confirmation of this view of the judgment as moral and self-expressive to urge, as does Professor Royce,² that we often, in reply to the question why we believe a thing, say that we do so because it is reasonable or sensible and the like. This recognition of the rational is moral only if it involves love of rationality as attested by the pursuit of truth, not when it is forced by the mere "evidence" of rationality. Rationality may be as insistent as sneezing and on occasions no less distasteful. Those most certain of all truths, those of immediate experience, as Rickert himself attests, are, moreover, the most mechanically insistent of all. It is equally misleading to assert that we acknowledge present facts because by so doing we can the better realize our will.

It follows that the act of assertion is not voluntary and that the attendant feeling of certainty has no moral significance. The latter is analogous to the immediate and uninvited pleasures of warmth or sunlight or beauty; the former to any involuntary act like winking or blushing. Knowledge comes for the most part unsought and through most of our lives the self-conscious will to know is in abeyance. There is a very narrow limit to our power of self-persuasion: we believe or disbelieve chiefly because we must. The expression of knowledge in words or writing is mostly voluntary, but the knowledge itself is simply there, and even when we toilsomely seek the truth, it is the seeking which expresses our conscious will, but our acknowledgments, when the truth is found, are not voluntary, for we must acknowledge. There can be, therefore, no "ought" in knowledge. There is possibility of duty only where an act can be controlled by a deeper purpose, when it can express an aim or ideal

² "The World and the Individual," Second Series, Lecture I.

which precedes it. Knowledge may result from a plan of study or research, and so, in that sense fulfill an aim, but over its character, over the particular judgments that are made, there is no control. That we know at all is partly our affair; but what we know, the meaning of our ideas, we can not predetermine. We voluntarily give ourselves the opportunity to judge, but we can not judge voluntarily. Our ideas affirm themselves wholly apart from whether we like it or dislike it, our convictions, our very hypotheses, for the most part force themselves upon us quite independently of our conscious desire. They are analogous rather to our habits, instincts, and reflexes than to our volitions, and may be either indifferent wholly to these latter as seeing the third dimension is, or in opposition to them as stuttering is to one thus afflicted.

Of course there is a voluntary element in the construction of hypotheses and in the meaning of some of our symbols, as well as in some of our beliefs. But even these are based on a fund of objectifying ideas (intents) which are simply given and to which we are compelled willy-nilly to assent. In our more thoughtful and voluntary scientific work our will can only, through attending, relax or maintain the intents that crowd into the field of consciousness. We can say that they express our will only so far as they awaken in us the pleasure that welcomes or the pain that rejects. Mathematical work illustrates this. We find given a region of intents which in manifold directions impels us on to fulfillment and extension; our will is concerned only in the choosing of the way, not in the choice of the ways, and when once we have chosen we must needs follow on. The will can only select and to a limited extent rearrange a given material.

Moreover, the amount of correspondence which our ideas shall have in order to be true can not be selected by our will. We can, to be sure, will to mean only a small part of our object, as when we will that our figures³ shall mean only the numerical properties of objects, but at the cost of partial knowledge. In so doing we select from the whole given intention, from the entire object meant, such parts as we wish to deal with. And over this total region of intention we have no control. If our idea is true only so far as useful, like a tool, it will be only half true just as all that is useful is only a small part of all that is. Complete truth requires that the whole object shall be there in the idea; that the entire intention shall be realized, not a willfully selected part of it.

Indeed just as in order to act voluntarily I must have a given organized structure of reflexes and habits, so I can purpose only because I can mean. I can define will in terms of intent, but not

³ *L. c.*, p. 303.

vice versa. To will is to find pleasure in an idea and to begin to realize it through action, to have a hand in its actualization. If our ideas did not have objectifying power, could not assert an object apart from the will, we could never choose between possible courses of action, never fashion any ideal into the matter of the world. If the absolute is will, it must choose between possibilities, that is, it must select from ideas which mean possible objects independently of its volition. To fulfill the meaning of an idea may involve the carrying out of a plan, but the plan could not be executed unless the idea apart from the will meant the object which verifies it. It is not because our will is better expressed in the laws of the world that we can not fly, but because our intent is thus fulfilled. And over the fulfillment of this intent we have no control.

That it is impossible to identify the meaning of an idea with the will of an idea becomes manifest if we consider our ideas of the past. There are none of our ideas more full of intent, more saturated with the affirmation of objects. And there are none that have so little of our will in them. What we here mean we can no longer act upon to perfect or destroy. How often do we wish that we could get rid of the meaning of our memories, of their reference to a world which we are compelled to acknowledge as our own. To be sure, we can, somewhat at will, determine *whether* we shall remember or not, but the important thing is beyond our control—namely, *what we shall remember*, the objectifying intent of our ideas. And if we dwell on the past, getting a wider and fuller content for our ideas, we win a partial fulfillment of meaning, but for the most part no realization of what we want, and, of course, in many cases such a thwarting of our will that we turn away from our own intents. Thus plainly may our intent be fulfilled, but not our will. It is at best an equivocation to say that the acknowledgment of a bygone deed that eats out one's heart is the expression of one's purpose. There is no purpose where there is not conscious desire. There is no more purposiveness or moral quality in such acts than there is in hunger or in the impulsion of a fixed idea.

But may we not, with Münsterberg in his recent book, "The Eternal Values," give us the "ought" as object of knowledge and retain "value"? We have already observed that the value of knowledge is similar to the esthetic values—like the beauty of a landscape it is immediate, unsought, beyond the control of the will. In the experience of beauty we enjoy and we must enjoy; we have no choice, and therefore feel the compulsion of no ought. Nevertheless, beauty is a value, in it the will *finds* itself expressed. May not the truth of an idea be similarly an immediate value which, qualifying it, serves as standard?

Clearness in this matter requires that we keep in mind certain distinctions which have already been drawn. Knowledge may have either of two values: extrinsically, so far as useful in the guidance of other activities, and intrinsically, as the successful fulfillment of the cognitive function. The former, *pace* the pragmatist, may be omitted from the discussion, since it forms no part of the essence of knowledge itself. In the latter, we must again distinguish, first the value of the strictly voluntary activity of setting a goal of knowledge and through scientific research realizing it; where the value is not different from that which attaches to the accomplishment of any purpose; second, the peculiar and immediate value, namely, certainty, which attends the successful action of the organs of cognition proper. The first of these is clearly a value which may or may not exist, demanding, as it does, definite scientific plans. It is, moreover, irrelevant to the nature of knowledge itself. Success as the realization of scientific ideals results from the possession of the truth. This latter is the genuine cognitive act yielding the true cognitive value, certainty, which, while it may condition the fulfilment of a conscious purpose to know, is not identical therewith, and may exist separately. The difference here is analogous to that between the value which is the positive feeling of success in having painted a good picture, and the esthetic value in contemplating it, without which the former can not be known. The one is the pleasure in triumph, the other is the pleasure in knowing. With this last we are alone concerned. How is it related to truth, what are the epistemological implications of its indubitable existence?

In the first place, it is a purely "formal" pleasure. It does not predetermine the nature of truth or reality, one whit. Any sort of truth is consonant with it. The world might have such a character as would involve the destruction of all human interests and still be matter for knowledge and so of this value. The value of having the truth might coexist with and condition the loss of all other values.

Secondly, this value does not afford any safe criterion of truth. In itself it is, like all other feelings, liable to go astray and so mislead as to its import. The real truth-character of an idea is internal to its nature, independent of the feeling of certainty, and properly determinative of this. Consider the simplest possible case.

Take my idea of San Francisco. This idea is true, if it is capable of fulfillment, that is, if its meaning can be filled out in the perception of the city—if there is nothing in the idea which contradicts perception. The idea is true if it fits the sensible experience of the fact as a cap fits the head, or, viewing the matter from the other side, if the perception fits into the idea as the head fits into the "space" of the cap. An idea is true so far as it vicariously contains its object

—the test is the attempted fitting in of the object. In all adequate perception this is realized. The object itself is given in perception and *into* the idea. This filling in of the meaning of an idea is a unique experience; in it, or in the potentiality of it, consists the possession of the truth. This experience either as a “disposition” (felt possibility) or as an actuality *conditions* certainty as the value of knowledge. *This* is the truth-character of the idea; its *value*, the positive feeling which accompanies it, has in itself no cognitive importance.

DEWITT H. PARKER.

UNIVERSITY OF MICHIGAN.

ART AND SCIENCE

“**B**ETTER to take pleasure in a rose than to put its root under a microscope,” said Oscar Wilde.

The defenders of the uniqueness of art, the absoluteness of beauty, and the indescribable character of appreciation hold that science by its very nature and the presuppositions of its method is unfit to understand or explain, much less interpret and evaluate, artistic and esthetic objects—either because the methods of science are too coarse and crude to sense the subtle nuances of beauty, or because science is only concerned with describing relations and assigning causes and is thus precluded from knowing the reality itself, or, again, because the knowledge which science gains is always abstract and generic whereas the thing of beauty is concrete and individual.

I

Ruskin held that the beauty of natural objects contains qualities which so far have eluded the description and classification of the man of science. The method of the artist, he says, is intuitive. “His faculty of perception penetrates far deeper than the instrument of the student. The labor of the whole geological society for the last fifty years has but now arrived at the ascertainment of those truths respecting mountain-form which Turner saw and expressed with a few strokes of a camel’s-hair pencil fifty years ago when he was a boy. . . . The knowledge of all the laws of the planetary system, and of all the curves of the motions of projectiles, would never enable a man of science to draw a waterfall or a wave.” “Would the teaching of philosophers who describe this world in terms so abstruse, so gray, and so cold, ever lead us to imagine it to be such a shimmer of foliage, such a flood of sunshine, such a pulsation of life, such a tremor of eyelids and fire of glances, as indeed

constitute all its value? Philosophers construct systems which explain everything in the world except its charm. They analyze all the secret forces of the soul except its power of admiration. They dissolve all our relations with nature, so-called inanimate, except its power of love." Man should look at nature, he continues, "not as a student, but as a seer . . . with the heart of a lover who seeks only to admire." "What we see, what we know, what we feel, not what we understand—this is esthetic truth as opposed to scientific truth." "Elsa asked his name of Lohengrin, not the number of the muscles of his skin nor the form of his spinal apophyses, and even she asked too much. Lohengrin disappeared. . . . It is the eternal punishment of the scientific spirit taking the place of love. . . . The scientist thinks to discover movement; he stops it. He thinks to command light; he destroys it. He thinks to seize the life of the muscle; he kills it." "The pursuit of science should constantly be stayed by the love of beauty, and accuracy of knowledge by tenderness of emotion."

If we turn from the artist to the psychologist, we find Professor Münsterberg defending a similar position from a different point of view. In his "Psychology and Life" he says: "To produce an object of real art, a single experience must be disconnected from all association with life, completely isolated. . . . Beauty is the isolation of true reality. Its truth differs from that of science because the latter reports only connections." "Everything in this world is beautiful, and is a joy forever, if it is so transformed that it does not suggest anything else than itself, that it contains all elements for the fulfillment of the whole in itself. We do not ask for the arms and legs of the person whose marble bust the artist gives us, and we do not ask for his complexion, either. We do not ask how the field and forest look outside of the frame of the landscape painting, and we do not ask what the persons in the drama have done before and will do after the story. Our works of art are not in our space and not in our time; their frame is their own world, which they never transcend. Real art makes us forget that the painting is only a piece of canvas, and that Hamlet is only an actor, and not the Prince. We forget the connections, we abstract from all relations, we think of the object in itself; and wherever we do so, we proceed esthetically."

Professor Royce, in his "Conception of Immortality," by a somewhat different line of reasoning argues that we never can scientifically describe the unique individual characters of any object, and therefore by implication of an art object. We not only can not define or explain the individual, we can not even describe it accurately, since knowledge is always in terms of types, of kinds, of

classes. A description must of necessity be in abstract and generic terms, and thereby and therein is not the individual which we seek to define. The artist stands nearer the real, since he immediately embraces its individuality. He has a direct experience of the object and does not seek to describe. "Individuality is something that we demand of our world, but that, in this present realm of experience, we never find. It is the object of our purposes, but not of our attainment; of our intentions, but not of their present fulfillment; of our will, but not of our sense nor yet of our abstract thought; of our rational appreciation, but not of our description; of our love, but not of our verbal confession. We pursue it with the instruments of a thought and of an art that can define only types. . . . The unique eludes us; yet . . . it becomes for us the most real thing."

II

These passages set forth an apparent antagonism of science and art which must be fairly met in any comprehensive statement of esthetic theory. Art stripped of all science would reduce, it would seem, to simple action or feeling, a series of movements or thrills: there is no pure art in this sense. Science, on the other hand, stripped of all relation to feeling and action, would be mere theory or speculation; here too, there is no theory which is absolutely pure or abstract. Anthropology shows us that human experience in the race did not begin with either the esthetic or the scientific, but with a stage in which both were merged in a more immediate attitude. Both fine art and science began with art in the larger sense, a meaning which still clings to the phrase "industrial" or "useful" art. Experience was economic and utilitarian in its inception.

Both science and fine art arose out of art in the etymological sense of skilled workmanship—and they emerged, not successively, but simultaneously, science as a refinement on the side of theoretical, and fine art as a refinement of industrial art on the side of practical control of the instruments of skilled production. The two types of consciousness which correspond to these two attitudes are the esthetic-emotional and the logical-intellectual, each employing both theory and practise, but in different proportions, in the one case in the form of an unanalyzed personal technique, in the other as conscious analytic method.

How, then, we may inquire, are these attitudes related in the treatment of a concrete object? Take Professor Münsterberg's illustration of a wave on the sea. What is the wave to the man of science? He analyzes it into salt and water and other constituents; the water chemically into H_2O and physically into certain pressures, impacts, and other transformations of energy. Is this the reality of

the wave? What, on the other hand, is the wave to the artist? It is an object of beauty which occasions a pleasurable emotion. He seeks to convey his appreciation by portraying it on the canvas or otherwise for our contemplation. He tries to find some medium for perpetuating the wave in terms of the emotion he feels. Has he the reality of the wave? Or does each see, and does each miss, a part of its meaning, the true reality of the wave consisting in some combination of their two views?

Is not the true artist always implicitly a scientist and the true scientist an artist? If art seeks to see the particular and the universal in their relationship in the individual, does not science just as truly seek to organize into a system the facts, the isolated elements called particulars, and the laws, the generalized relations called universals? Would not the complete working out of either attitude necessarily embrace the other? Is it not just as degrading to science to restrict its function to the mere assembling of facts as it is to art to attempt to state its creative products in terms of the visible technique? Does not the true scientist feel the artistic side of his work as the great artist becomes scientific in perfecting his method? For certain practical purposes we can point to an art product and say, This is a work of art—this painting, this marble, this sonata—just as we may point to certain provinces of systematic knowledge and identify them as the sciences of mathematics, physics, or biology; but the moment we seek to make such a distinction ultimate or final do we not find that there is no point at which science may not become art and art scientific?

It is sometimes suggested that science is expression for the sake of communication while art is communication for the sake of expression, that science seeks to transform reality into terms which everybody can understand, thus making it social and objectively accessible and verifiable, while the artist thinks only of making the expression true to his own impression. But this will not bear analysis, since great art also is representative and typical. Both art and science necessarily imply a subjective factor: the personal equation is inevitable in all experience, for the object or idea or whatever enters into our consciousness must be modified by that very relationship. No one could possibly *know* an object in entire isolation, since the very fact of knowledge establishes a relation that must be taken into account in a statement of the full reality of the object. Not even the man of science can totally eliminate this personal element, though for his purposes he may reduce it to a negligible quantity.

And might not the function of the frame of a picture be stated as just the opposite of what Professor Münsterberg ascribes to it? We select frames which tone in with the environment. The fact

that we fail to recognize the function of the frame in relating the picture to the context simply shows that the connections are so thoroughly there and taken for granted that they may be ignored. The artistic frame is not the one which is intrinsically beautiful, but one which "brings out" the values of the painting, one which so fits in with the surroundings, either by resemblance or contrast, that the frame itself is inconspicuous; that is, serves so to mediate between the picture and the environing objects that the center of interest is in the painting itself. Of course, in a sense, the frame does isolate the picture, but it does this by connecting it harmoniously with the context, and the main aim is not the isolation, but the synthesizing of the values inside with those outside. This is why, wherever possible, the frame is dispensed with, its presence being a tacit acknowledgment that the painting is not in its artistically inevitable setting.

III

The difference between art and science, therefore, must be one of emphasis rather than one of subject-matter or even of method. The artist's purpose is to increase appreciation and hence the appeal of the product of his genius is primarily to the emotions and will rather than to the understanding. The aim of the man of science, on the contrary, is to gain practical control; hence his appeal is primarily to the intellect, and his objective statement in terms of impersonal causes and effects or colorless mathematical equations. Guido Reni's "Aurora," as an art object, is experienced in terms of its own qualities as a beautiful painting; but if I were an art dealer and dependent for my living upon the sales of copies of this picture, and had my rooms stocked with them, it would come to be experienced in terms of a catalogue-number and a price-list, over-individual and emotionally indifferent items of information which are useful just by reason of this elimination of the personal factor. Here the esthetic is subordinated to the practical interest. Similarly in science the artistic is subservient to the intellectual and logical demands. But in the case either of the man of science or the creative artist a smug intolerance is suicidal. As Hamerton has said, "The very greatest of all dangers to our art, if not the only danger to it, is the stoppage of its scientific development: in other words, its abandonment of the pursuit of truth."

The poetry of things is not opposed to the philosophy of things. That there is no real antagonism between art and science in their fundamental purpose, that both are seeking reality in its highest form, has been repeatedly expressed by the deepest thinkers. Wordsworth said: "Poetry is the breath and finer spirit of all knowledge; it is the impassioned expression which is in the coun-

tenance of all science." And Edward Caird says: "Philosophy is, in the end, at one with poetry."

The merit of philosophy and science is validity; the merit of poetry, of art, is immediacy. In the former, relations are explicit; in the later, implicit; but they are operative in both cases. In the former, the discrete elements are comprehended in an analytic survey of the whole; in the latter, the elements are apprehended in a more immediate syncretic or concrete synthesis. In science and philosophy the meaning comes to be identified more with the words and terms themselves, with the instruments of thought; in art and poetry the meaning lies more in the context, between the lines. In the former case the meaning is conveyed in terms rather of visual and auditory imagery and words of borrowed derivation; in the latter case the meaning is surcharged with emotion, with organic and tactile-kinesthetic imagery, and thus finds expression in terms of the mother-tongue. The reason why some minds prefer the poetical to the scientific or philosophic statement of the truth is a matter of temperament—their characteristic mode of judging and evaluating situations in terms of the non-verbal rather than the verbal and formal symbols.

The artist sometimes affirms that the scientific spirit never goes with artistic production, and brings forward "confessions" like that of Darwin to point his argument. "He holds that he hears voices and has visions which tell of realms in which science can have no power, and concerning which she can teach him nothing." And the widest-minded men of science appreciate a certain truth in his contention so far as the present status of art and science is concerned. But is it fair to say that Darwin had lost the esthetic sense? Is it not true rather that his esthetic field had shifted to regions in which but few of his fellows could or would care to follow him? Darwin was transforming nature into a work of art on a scale the professional artist, except a few choice spirits like Goethe, never dreamed of. Is it surprising that he found much of what around him was lauded as art disgustingly cheap in comparison? "Science," as a recent writer has said, "like a child pulling a flower to bits, is apt . . . to dissect more than it constructs, and to lose in its analysis the vision and harmony which the artist has ever before his eyes. Perhaps, however, if the artist has patience, he would often find that science restores the unity with more significance and more beauty in it than it had before. . . . The modern botanist is in a very real sense more aware of the Dryad in the tree than the Greek could be."

Binet in his "*L'Âme et le Corps*" has called attention to the fact that our scientific conceptions of the world have been built up in

terms of the eye and hand. The atomic theory is visual in conception and the modern scientific doctrines of energy and motion and vibrations of an elastic-solid ether are a combination of visual and tactile-kinesthetic images. We have forced all the rest of our immediate sensational experience into these terms when we seek to understand and explain. But, as this writer points out, there is no reason why we should describe a tuning-fork in terms of how it looks or reacts to touch any more than in terms of the sound it produces or in terms of the emotions this sound arouses. So of the ear. What is the ear in terms of the function of the ear? We ordinarily describe it scientifically in terms of sight and touch. What is the ear in its own terms? What is the nose in terms of odor? It is intelligible, perhaps, that we should interpret the stimulus to vision in terms of vision. But why do we persist in interpreting the stimulus to smell, to hearing, to the temperature sense, and the rest, in these same terms? Has not the artist, then, a certain justification in his feeling that science is arbitrary and abstract and unreal, and that his own pursuit is a more genuine envisagement of the real?

H. HEATH BAWDEN.

SAN YSIDRO, CALIFORNIA.

REVIEWS AND ABSTRACTS OF LITERATURE

Consciousness. HENRY RUTGERS MARSHALL. New York: The Macmillan Co. 1909. Pp. xv + 685. \$4.00 net.

This volume, the author tells us, is the elaboration of a preliminary sketch of systematic psychology completed in 1891 in connection with his more detailed discussion of the topics *Pain, Pleasure, and Æsthetics*. The aim of the book is to present to the reader "not so much an array of newly discovered facts, but *rather a special manner of viewing consciousness as a whole*," this conducing, in the author's opinion, to greater clarification of the conceptions of mental life and to a more orderly treatment of its problems. We have thus before us not an arrangement of facts, but rather the presentation of the various aspects of a complex system which shall be capable of receiving facts and giving them their meanings.

The volume is divided into three books entitled, respectively, *Of Consciousness in General, The General Nature of Human Presentations, and The Self*. Much of the material of the volume has already appeared elsewhere in the form of articles and discussions, but here for the first time this material is articulated into one organic structure.

The root from which the entire system springs is the assumption of a thoroughgoing parallelism, a complete "neururgic and noetic correspondence." The systemic character of both fields is insistently urged and the analogy of the wave is drawn upon unremittingly. Major and minor

wave-crests, whether of consciousness or of nervous system, are the "emphases" of experience, and from the interrelationships of these emphases among themselves and with the unemphatic masses from which they arise spring the neururgic and noetic "patterns" of the moment.

As would be expected from the notion of the thoroughgoing character of the neururgic-noetic correspondence, consciousness is viewed as vastly more extended than the field of introspection. Over against but continuous with the field of attention which contains the psychic emphases or "presentations" is the undifferentiable mass of unemphatic psychic parts which constitutes what we may well speak of as the "*field of inattention, or sub-attentive consciousness.*" This "field of inattention" is the self to which all presentations are given.

These are the various assumptions and general terms upon which all the analyses of the book are based and from which implications are drawn. In a way the entire volume may be regarded as a many-sided testing of these fundamental hypotheses. The incessantly repeated formula is: "If this view is true, then we should expect to find, as we do find, etc." However, the process of testing seems to the reviewer to possess so little rigidity that one might well say of the work that it represents the attitude of one who, himself inclined to the fundamental hypotheses mentioned, wishes to see how a system erected upon them will look and "work," without questioning for the moment whether any other view would "work" as well.

The "consciousness" of the book's title is, as is clear, not the consciousness of the ordinary psychologist's interest. Here the word connotes "psychic existence as such" and refers to a psychic field extensive regions of which are denied introspective accessibility. Moreover, by a none too cautious use of analogy, it is argued that we must admit the existence of psychic elements corresponding to active neural elements and capable under circumstances of floating off from the main psychic mass; of minor consciousnesses connected with neural activities apart from the cortex, notably in the cases of the sympathetic and spinal-cord systems; and of diverse but coexistent consciousnesses in the same individual. Furthermore, even transfers of energy in any variety of protoplasmic matter may have "coincident psychic effects," consciousness of some grade or other being thus present in animals lacking nervous systems and in plants. A genuine unconsciousness during sleep and anesthesia is, on this view, then impossible, since where life is there consciousness is to be found. These are some of the main contentions of Book I.

Book II. is devoted to a lengthy exposition of the general qualities of human presentations and the various qualities of relation resulting. Such general qualities are the following: *Intensity* attaches to all presentations and is a quality involving the appreciation of "more or less." ("Quality" is here obviously equivalent to "attribute" when referred to elementary states, though the word "attribute" does not belong to Mr. Marshall's terminology.) *Manifoldness*, or complexity, likewise characterizes even the simplest of possible experiences. *Realness* refers to the more or less of stability attaching to presentations. Contrasted with

these general qualities exhibiting relations of more or less are the *algedonic* and *time* qualities, each of which involves "a norm and departures in opposite directions from this norm." Each quality is, furthermore, related to all the rest and these relationships and their consequences are worked out in great detail. The general nature of the discussion may be seen from the following specific cases. Attention involves the correlation of intensity and manifoldness; belief that of realness and manifoldness; interest that of the algedonic quality and intensity-manifoldness. The entire treatment, as these illustrations will suggest, is schematic in the extreme, often forbiddingly so, and the reader can hardly avoid the conviction that the rôle assigned to facts as such is far less that of directing and controlling the schematism than that of supporting and bracing the sectional parts of a preformed structure.

The relational character assigned to attention may be brought out by the following statements: "We have in . . . attention-experience the appreciation of a combinational sense of relation due to the coincident effectiveness of the intensity and manifoldness senses of relation." Or, again: "Attention-experience appears as not identical with intensity; it is intensity as related to the manifoldness of all the rest of the field" (pp. 314 and 316). As the author here and elsewhere maintains, "clearness" is only the name for intensity when the presentation involved is in the ideational rather than in the sensational setting. Consequently we see from the above that there is no identification of the attention-experience with clearness, but that, in the ideational sphere at least, it is somehow due to a relationship between clearness and complexity. What all this means, apart from the obscuring schematism, is, I suppose, that the attention-experience has for its content not intensity as such (or clearness, as the case may be), but rather those presentations which, as relatively emphatic at any moment, possess intensity or clearness.

The author's refusal to grant a real distinction between clearness and intensity seems to the reviewer to be maintained more by repeated assertions than by convincing analysis. The only assertion seeming to have weight and argumentative value is "that the sensations which are called vivid [=clear] in distinction from the sensations called intense are closely allied with ideational presentations" (p. 195). But it would certainly be impossible to argue convincingly that the clear low voice of a speaker is more closely allied to an ideational presentation than are the loud vocalizings of one who can not moderate his voice. Nor indeed do grades of clearness run parallel to changes of intensity.

As to the algedonic quality, Mr. Marshall reiterates his well-known contentions that pain is not a specific sensation and that pleasure-pain is a quality of all presentations. (1) The refusal to acknowledge the sensory character of pain gives rise to many problems, as for example, the conditions of "getting used to pain," for which forced solutions have to be proposed. And, furthermore, Mr. Marshall is never able to point out just what variety of sensation is painfully qualified when an isolated pain spot is stimulated or when, for example, an abraded spot of the skin is harassed by the tiny spine of a burr caught in the clothing. It is, as Mr. Marshall

acknowledges, "difficult indeed to persuade even the trained psychologist" that pain is not a form of sensation. (2) That the word "attribute" in its technical sense may be used to designate the relation of pleasure and pain to presentations is now admitted (p. 247). And this at once makes necessary the meeting of the Külpe-Titchener assertion that the annihilation of any attribute involves the disappearance of the sensation, whereas we frequently have sensations which are algedonically indifferent. This argument is met by simply denying, as I understand it, the absolute indifference of any sensation. What appears as an indifference is really not that. The pleasure or pain has become minimal or unnoticeable, or one is about to give place to the other (pp. 249 and 260). This seems to the reviewer to be merely an evasion and to be a sacrifice of observation to theory. In fact Mr. Marshall himself, when treating of other matters, seems to acknowledge that there are states of complete indifference, for (p. 498) he says: "Sensations of touch determined by the clothing I am now wearing can not be claimed to be either pleasant or painful; they are entirely 'indifferent.'"

Book III. treats of *the self* and of *feeling*. As we noted above, the real self of the moment is held to be the "rest of consciousness" after all presentations have been abstracted. Its nature can be discovered only by a study of its simulacrum, the empirical ego. This when examined disintegrates under the gaze, and as the various items "scale off" which seemed to constitute it, but which turn out to be only presentations, there is left only "a vague indefinite somewhat concerning the nature of which [one] can not be at all sure, but which appears to be a center of spontaneous activity." Feeling is a term reserved for designating the characteristic of "subjectiveness." More definitely it is "that form of presentation to the self which, if it could become explicit, would appear as the empirical ego of self-consciousness."

The volume closes with a chapter in which the general views expressed are applied to the problems of *responsibility*, *free will*, and *immortality*.

A work like this can not be summarized. One can only hope to indicate its general plan and its chief features. No brief review can give any adequate impression of the book's displays of scholarly acquisition and its exhibitions of tireless and painstaking reflection. Nor can one do more than hint at the numberless discussions, distinctions and interrelations set forth in the endless divisions and subdivisions of these nearly seven hundred pages. The volume is alternately tantalizing, satisfying, and exasperating. It is always enticing to meet with an attempt to survey our complex mental life from a standpoint which seeks to bring order and system into its heterogeneity. We need many such attempts. But we need also, I believe, in making such attempts, to hold our system subservient to our facts rather than to seem to endow a system with dictatorial powers.

Much of the volume is clearly written and certain pages are unusually vivid, but Mr. Marshall has a certain special gift for stating simple issues obscurely and for loading his pages with descriptions and analyses which seem wholly mythological to one who has become accustomed to interrogate introspection at every step.

The deftness with which objections are met is sometimes most irritating. The author seems to slide gracefully away from the attack rather than to meet it face on with due appreciation of the enemy's importance. Such at least is the impression made on the present reviewer.

The book is admirably printed on light paper and what would otherwise be a bulky volume becomes thus entirely agreeable to handle. Typographical errors are rare and such as occur are not serious.

A. H. PIERCE.

SMITH COLLEGE.

Le sens commun, la philosophie de l'être et les formules dogmatiques.

FR. R. GARRIGOU-LAGRANGE. Paris: Gabriel Beauchesne et Cie. 1909. Pp. xxx + 311.

The present volume is above all a theological work. It has been written with the intention to defend the dogmas of the Catholic Church against some modern philosophical tendencies by which—the author believes—they are greatly endangered.

The question whether Catholic dogmas are or are not essentially connected with any particular philosophical system has often been discussed. The Catholic clergy of our day—in this country perhaps more than anywhere else—seems to be inclined to regard scholastic philosophy, if not as the foundation, at least as an essential concomitant of theology. Now and then, however, some suspicion is found to arise. Interesting discussions appeared a few years ago in the *Revue du Clergé français*, the semi-official organ of the French clergy, which led to the assertion that the dogmas of the Church were not connected with any particular philosophy, and “had no meaning but the one which common sense can give them.” A well-known Catholic priest, who happens to be at the same time one of the ablest representatives of pragmatism in France, Edouard Le Roy, then took up the question and showed that what we call common sense is not a mass of immutable categories, ready-made from all eternity, but “a utilitarian organization of thought made with regard to our practical life.” It is at this stage of the discussion that the present volume appeared.

Its contents may be briefly summarized as follows: (1) The author strives to show that pragmatism is worthless as a philosophy and heretical in point of doctrine. (2) He then expounds and defends the view that common sense is a rudimentary philosophy in itself and contains, as it were in germ, the great Scholastic body of truth. (3) He concludes that the dogmatic formula expressed in philosophical language remains in the prolongation of common sense and does not bind dogma to any philosophical system; although it is very dangerous for a Catholic to adhere to any other master than the angelic doctor.

The work is remarkable in many respects. We will first call the attention to a quality which the productions of our contemporary philosophers do not accustom us to expect. The long and detailed study of the different systems of thought which characterizes our secular universities

¹ F. Dubois, *Revue du Clergé français*, August, 1907, p. 377.

leaves in the modern mind a trace of scepticism which is seldom absent from our philosophical discussions. And let it not be believed that I call in question the sincerity of our writers or professors. They are in earnest when they defend their views. One can, however, easily read between their lines that it would need but little effort to bring them to the opposite side. Nothing similar in Fr. Garrigou-Lagrange. Every single page of his work teems with a deep sense of conviction. He believes that St. Thomas Aquinas—whom he knows better than anybody else—has found once for all the philosophical truth and that his philosophy is therefore eternal and immutable like truth itself.

One will probably wonder whether, with such a frame of mind, Fr. Garrigou-Lagrange is likely to grasp the full import of pragmatism. We indeed believe that there is in pragmatism a profound meaning and a good deal of truth which Fr. Garrigou-Lagrange has never suspected.

In his refutation of Bergson's and Le Roy's philosophy, Fr. Garrigou-Lagrange identifies pragmatism with nominalism and sensism, and it is upon the shortcomings of nominalism and sensism that his whole refutation is based. He admits with Mr. Le Roy that there is at the beginning of human experience an immense mass of images. This primitive perceptual mass, he remarks, is at bottom equivalent to the *continuum sensibile* of Aristotle and St. Thomas (p. 13). Mr. Le Roy, however, has failed to see that, side by side with the *primum cognitum sensibile* there is present a *primum cognitum intelligibile* (p. 14). This *primum cognitum intelligibile* is nothing but the abstract concept of "being," from which all intellectual truths are derived (p. 34). And if the parceling out of the *continuum sensibile* is often artificial and practical, the parceling out of the *continuum intelligibile* imposes itself upon our mind as true (p. 14).

Without insisting on what may be meant by the abstract concept of being which the child is supposed to possess in his cradle, at the first perception of his swaddling-clothes (p. 35), we will venture to suggest whether the *continuum sensibile* of St. Thomas and the original perceptual mass of the pragmatists are not as different as day and night. The *continuum sensibile* of St. Thomas is a confused image of a ready-made reality which is there already, complete and perfect in form, and which the gradual development of our faculties will enable us to picture in a more and more adequate manner. The pragmatic "ocean of images," on the other hand, is the brute material out of which we shall have to build up reality ourselves. In St. Thomas's view, reality is there and has to be discovered; in Le Roy's opinion, reality is not there yet and has to be constructed.

Moreover, there is no reason whatever why pragmatism should be identified with nominalism and sensism. Pragmatists may be nominalists and sensists because in our day nominalism and sensism are in the air; but they might be conceptualists or realists just as well. For, if out of our original chaotic experience we have built and grouped particular phenomena, we have also built general concepts. If our pragmatists question the validity of general concepts, it is for the same reason that

leads most of the philosophers of the present day to question it also. Let any metaphysician point out the validity of the concept, let him assign it a place in human experience, show that it works, and the pragmatist will be second to none in welcoming it in his system.

Fr. Garrigou-Lagrange has, however, perfectly seen that there is no system of philosophy more diametrically opposed to the Scholastic principles than pragmatism. In throwing down his gauntlet to Mr. Le Roy, he has challenged the right foe. The philosophy of perpetual becoming is simply the reverse of the philosophy of eternal truth. And if this is certainly no discovery—since William James had seen it before—it is nevertheless a merit to insist upon it when some writers who pretend to a certain amount of philosophical acumen help us to the ludicrous paradox that scholasticism was the pragmatism of the middle ages and pragmatism is the scholasticism of our day.

JOSEPH LOUIS PERRIER.

NEW YORK CITY.

JOURNALS AND NEW BOOKS

REVUE PHILOSOPHIQUE. August, 1910. *La fonction de la philosophie dans la science positive* (pp. 113-142): F. MANGÉ. — To derive from the rational ideal, in its ensemble, a system of rules and of criteria which will permit of the discovery of the hypotheses necessary to realize that ideal—such is the function of philosophy in its relation with science. *Le cours de nos idées* (pp. 114-167): A. JOUSSAIN. — The process ordinarily called "association of ideas" is misnamed and should rather be denominated "enrichment of consciousness." This enrichment is a condensation of our past and enables us to draw immediately upon former experiences. Hence one idea is never called to mind by another idea, but there is a passage from one idea to another in a continuous metamorphosis of the mind. *La propagation des idées* (pp. 168-191): M. MILLIoud. — The propagation of ideas in all classes of society depends upon two conditions: (1) the resemblance of the media, and (2) the homogeneity of the receptive medium, the term "medium" being used in each case as synonymous with "group." *Analyses et comptes rendus*: E. de Cyon, *Dieu et Science*: S. JANKELEVITCH. M. Pradines, *L'erreur morale établie par l'histoire de l'évolution des systèmes*: D. PARODI. G. Ramousse, *Essai d'une théorie scientifique du concept de vérité*: G. LUGUET. *Revue des périodiques étrangers*.

ARCHIV FÜR GESCHICHTE DER PHILOSOPHIE. Band XVI., Heft 3. April, 1910. *Die Rechtsphilosophie der Epicureer* (pp. 289-337): R. PHILIPPSON. — Many fragments of his disciples are compared with those of the master; Justice arises out of the desire of men to avoid injury from others. The statesman does not need philosophy, and can hardly have the tranquillity of the sage. *Pars Secunda Philosophiae, seu Metaphysica*, II. (pp. 338-373): L. JORDAN. — From lecture notes

are culled further judgments by some eighteenth century professor on the Cartesians, on Bayle and Voltaire. The chief interest is the evidence that students were kept in touch with new movements of thought, which were acutely and freely discussed. *Die 'Απόφασις des Simon Magus* (pp. 374-399): A. REDLICH. - The neo-pythagorean character of the gnostic movement exemplified by many fanciful numerical analogies. *Jahresbericht über die vorsokratische Philosophie 1900-1909* (pp. 403-427): O. GILBERT. - About a hundred works are here briefly discussed, the interest centering around the author's contention that Diels goes too far in dissociating Heraclitus from the Ionic movement. *Die neuesten Erscheinungen. Eingegangene Bücher.*

Cassirer, Ernst. Substanzbegriff und Funktionsbegriff. Berlin: Verlag von Bruno Cassirer. 1910. Pp. xv + 459.

Education in the United States. A Series of Monographs. Edited by Nicholas Murray Butler. New York, Cincinnati, and Chicago: American Book Company. 1910. Pp. 1,068. \$2.50.

De Laguna, Theodore and Grace Andrus. Dogmatism and Evolution. New York: The Macmillan Company. 1910. Pp. iv + 259. \$1.75.

Montgomery, George R. The Unexplored Self. An Introduction to Christian Doctrine for Teachers and Students. New York and London: G. P. Putnam's Sons. 1910. Pp. viii + 249.

Thorndike, Edward L. Handwriting. Teachers College Record. Vol. XI., No. 2. New York: Columbia University Press. 1910. Pp. 93. \$0.30.

Titchener, Edward Bradford. A Text-Book of Psychology. An enlarged edition. New York: The Macmillan Company. 1910. Pp. xx + 565. \$2.

NOTES AND NEWS

"THE fifteenth number (No. 3 of 1910) of the Italian review *Scientia*, now in its fourth year, is largely occupied with philosophy. The ideas of Poincaré, Bergson, Einstein, and the Pragmatists naturally form the text of discussions, such as that by F. Severi on 'Hypothesis and Reality in Geometrical Science,' or Chwolson's 'Can we apply Physical Laws to the whole Universe?' or F. Enriques's criticism of Pragmatism. The theory of two star-streams interpenetrating one another is described by Mr. A. S. Eddington, of the Royal Observatory, Greenwich. M. Guignebert sketches the rise of Christianity in accordance with the sifted conclusions of recent research. Mr. Abegg's article on 'Chemical Affinity' has a pathetic interest, from the fact that while it was in the press the author met his death in an aeronautic accident. The useful *rassegne* of various sciences are continued; Mr. E. S. Russell reviews the claims of epigenesis *versus* evolution. The advantages of a 'mnemonic' theory

of heredity, in accordance with the suggestions of Semon, Rignano, and Francis Darwin, involving an 'interiorisation of external stimuli,' is well put. M. Landry supplies his annual review of economic research. M. le Comte de Baillehache defends his system of electric units—a dimensional system—put forward last year in his 'Unités électriques.' Reviews of scientific periodicals, notes of scientific meetings, and critical notices of books, make up an issue that is very level in quality. The books reviewed are worth noting, viz., E. Borel, 'Elements de la Théorie des probabilités'; Marcel Landrieu, 'Lamarck, le fondateur du transformisme'; Georges Bohn, 'La naissance de l'intelligence'; Georges Dwelshauvers, 'La synthèse mentale'; W. Lexis, 'Theorie der Bevölkerungs und Moralstatistik'; A. Solmi, 'Storia del diritto italiano'; H. Bouasse, 'Bachot et bachotage.'—*Nature*.

WE take the following from *The Nation* for October 13: "If the number of books published on a subject is any indication of its popularity, Nietzsche's philosophy must be making rapid conquests in this country and England. Besides the steadily increasing volumes of the translation edited by Dr. Levy, we have every few months a volume of biography or exposition or extracts. The latest of these are 'The Quintessence of Nietzsche' (Duffield), by J. M. Kennedy, and 'The Gist of Nietzsche' (Luce & Co.), by Henry L. Mencken. Mr. Kennedy is one of Dr. Levy's corps of translators and knows his subject well. He brings out clearly the three main points of Nietzsche's doctrine, viz., the distinction between master and slave morality, the superman, and the everlasting recurrence; but, being himself a full-blooded Nietzschean, he naturally does not go below the surface and drag into light the underlying inconsistency and morbidness of the philosophy. Mr. Mencken's little book gives a series of quotations from Nietzsche under proper heads."

THE College of the City of New York has acquired the complete private library of the late Professor Simon Newcomb, consisting of about 4,000 volumes and 7,000 pamphlets dealing with astronomy, mathematics, and physics. Both pamphlets and books are being catalogued and are now accessible to research students, in accordance with the expressed desire of the professor and Mrs. Newcomb.

A. & C. BLACK are preparing to publish an outline of philosophy in England from Bacon to the present day entitled "English Philosophy: A Study of its Method and General Development." The author is Dr. Thomas M. Forsyth.

BRYN MAWR COLLEGE celebrated the twenty-fifth anniversary of its opening on October 21 and 22. Among the speakers were President Remsen, of the Johns Hopkins University, and President Lowell, of Harvard University.

THE JOURNAL OF PHILOSOPHY

PSYCHOLOGY AND SCIENTIFIC METHODS

HOW IDEAS "WORK"¹

WHEN true ideas were said to be the ideas which "work," the loose and very general phrase "which work," taken out of its connections, was an easy mark for the critic, who lost no time in reminding us that false ideas seem to be as industrious as true ones, that error gets up as early and stays up as late as truth, and often appears to work overtime.

But the pragmatist hastened to point out that these shafts lose most of their point and force as soon as the phrase is put back into its context, where it clearly means "which work in the way they set out to work." The idea of an ache as the ache of a certain tooth is true, if an operation on the tooth alters the ache. If "pulling" the tooth does not stop the ache, the idea is not true, even though it bring some other, and possibly greater, satisfaction, *e. g.*, the restoration of eyesight. If Saul goes to seek asses and finds a kingdom, while the kingdom may be a very satisfactory substitute for the asses, it does not make the idea of the whereabouts of the asses true. The idea is a proposed connection of things for a specific end, and is true when it works in the way proposed. But it is important, says the pragmatist, to keep in mind that the proposed working means in the end, control of the original experience which is the "subject" of the idea. If having an idea of a thing means only the possession of some sort of a psychical symbol for it, why should there ever be any failure? Anything will do for a symbol. Every idea would work. There could be no error.

The critic next propounds what he regards as a far more crucial question, namely: "Are ideas true because they work, or do they work because they are true?" Must not the ache be related and connected, *realiter*, with the tooth in advance of the idea of this connection, in order that the idea may work successfully and so be true? Is not therefore the entire preceding account of the idea of

¹ The contents of this paper form a chapter in a forthcoming volume on "Pragmatism and its Critics," published by the University of Chicago Press.

the ache, as an act of connecting the ache with the tooth, upside-down in so far as it speaks of the idea as if it were *making* a connection? Is not this connection simply *found*, and are we not therefore thrown back again upon the strictly representative function of the idea?

This objection is credited as the special contribution of the "neo-realist" critic who defends the thesis that *thinking makes no "essential" difference to the things thought of or about*. Verily it is not politics only that makes strange bed fellows. Here, in the face of his tradition of the "active" character of thought, of the essence of thinking as consisting in a relating activity, the absolute idealist joins with the realist in maintaining, against the pragmatist, that our ideas can only *find*, not *make*, connections between the ache and the tooth. The "active," "relating," "connecting," "constitutive" character of thought, of which historic idealism makes so much, applies in the end only to the ideas of the absolute, not to ours. In its conception of finite thought, absolute idealism is as realistic as any arch-realist could demand, and as it is precisely finite thought that is under discussion, the absolutist finds himself shoulder to shoulder with the realist against the pragmatic contention that finite thought, *our* thought, makes a difference in the "things thought of."

Returning to our particular case, suppose we agree that there exists a connection, objective and *realiter*, between the ache and the tooth *before* there is an idea. It surely does not follow that this connection must remain the same *after* the idea arises, or that *all* the idea can do or aims to do is algebraically to symbolize this connection. Nor does it follow, as some critics have assumed, that, if the situation is objectively altered in and through the act of ideation, the idea is therefore the creator of *all* the connection there is, and even of the "things themselves."

But, says the realistic-idealistic critic, we admit that ideas make a difference. They make just the difference of the *addition* of thought. The ache and tooth are now objects of thought, whereas before they were not; but the only difference is just this *addition* of ideas to the situation.

But, returns the pragmatist, if thought is something merely added to the situation, without making any "essential" alteration, (1) why is it added? (2) *How are we to tell whether it is rightfully or wrongfully, i. e., truly or falsely, added?* (3) If the ideation of the ache as toothache is merely an addition of a factor which makes no "essential" difference in the situation, again, why not refer the ache to the phase of the moon, the day of the week, or anything else we may fancy?

Let us consider further the situation before and after the idea.

We have agreed that before the idea the tooth and the ache are "objectively" connected. Indeed, in one sense there is too much connection: they are so merged that mutual reference and mutual control are impossible. What is needed is a certain amount of disconnection, of disentanglement, and of rearticulation. If we wish to say that before the idea the tooth is the "cause" of the ache, after the idea it certainly is something more. The moment the pain is referred to the tooth, the tooth ceases to be *merely* the cause of the pain. Indeed, it then *begins* to cease being the cause of the pain. It now *begins* to be the cause of the pain's cessation. From being a mere condition of the pain, it *begins* to be through the ideating process a condition of not-pain. As Hegel would say, it is now *aufgehoben*, and passes into its opposite. Here, indeed, is the source of Hegel's riotous dialectic, but here also is the principle for the control of that riot. For Hegel, this passing of a thing over into "its other" is just a peculiar and ultimate effect of thinking. Think about anything, and, presto! it begins to become something else. And so it does. This, indeed, is just the pragmatic thesis. But *what* it becomes depends on the problem and interest. Let us suppose there were no desire to get rid of the pain, and that in some way—as an act of an "ideational instinct"—the pain should be connected with the tooth. What transformation of the tooth or the pain would there be? Nothing would be *aufgehoben* in this case. The whole "dialectic" would be stopped in its tracks. Is it not clear that the reason that there is a dialectic of thought is because at bottom *thought is a part of the total process of an efficient desire and effort to effect a change in experienced values?*

But our realistic critic will still insist that this reference of the pain to the tooth is not the "real" beginning of a *new* interaction between the tooth and the ache. It is just a *preliminary*, a getting ready for the beginning of such an interaction.² The tooth doesn't "really" take on any new relation to the ache until the dentist gets hold of it. But how does the dentist come to get hold of it? Is it not precisely because the tooth has been actually operating as a guide to both the patient and the dentist from the moment the pain is ideated as the pain of a tooth?

But what now, says the critic, of the case in which the pain is referred to the *wrong* tooth, or to the ear, or a demon, instead of to the right tooth? Is this, too, a "real" and objective transformation of a "real" situation? Verily, rejoins the prag-

²The question of where a beginning begins should have no terrors for the pragmatist. Greek discussion showed once for all that the only method for the solution of that and all other questions of the kind is the "teleological," i. e., the "practical" one.

matist. Is not an act which culminates in "pulling" the wrong tooth, or the treatment of the ear instead of the truth, or in making a libation instead of a potation, a very "real" alteration of a very "real" situation?

But, rejoins the critic, the pain after all *doesn't* belong to the other tooth, nor to the ear, nor to a demon, and *does* continue to belong to "its" tooth after the idea, whether true or mistaken, as before. If this were the case, rejoins the pragmatist, it would not be to the point, which is not that nothing remains after the idea, as it was before, but that the idea marks the initiation of a *new* connection between things, which, if it occurs through an idea, is none the less real. As a matter of fact, after the ideation the ache not only "belongs" to the tooth as it did before, but through its reference to the tooth, by the idea, whether this be true or false, it is put into connection with other agencies such as the dentist, or a potation, or a libation, etc.

Nor does the fact that the new relation and interconnection may be false or wrong, *i. e.*, not effective for removing or altering the ache, make it any the less "real." Once more, the "pulling" of the wrong tooth is certainly no less "objective" than "pulling" the right one. In short, error, says the pragmatist, is just as strong a witness as truth for the contention that thinking is a process in which things enter into new and "real" interaction.³

To the question, What of the madman's ideas? the pragmatist says that the guards, the barred cells, the taxes ought to be a sufficient answer. If a madman thinks you are his enemy and therefore to be destroyed, you will scarcely feel safe on being told that you are "really" not his enemy and that his idea is false. And, to be sure, safety does not arrive *merely* by thinking of having the madman shut up, but it *starts* with some such idea.

Another way of stating the source of the difficulties in the realist's position, says the pragmatist, is that the realist thinks of the situation which precedes and leads up to thinking, wholly in existential terms. He omits the elements of motion, of impulse, and of desire in it. Thus in the instance cited he thinks of the "real" situation preceding thought as made up of the "fact" of the pain, the "fact" that, entirely independent of any ideas, it is already connected with a certain organ; and, if we extend the boundaries of the

³ If any one complains that the toothache case is one which offers the least resistance to the pragmatist's interpretation since in it the thinker is the one who has the pain, the pragmatist will reply: (1) that "the toothache case" is not of his own choosing, but one selected by the critics as a "poser" for pragmatists; and (2) that in principle it makes no difference whether the pain is "in the same head" with the idea or another.

case a little, the "fact" that the physician is in a certain place whatever the patient's or anybody's else ideas about his location may be. This, with as much more of detail as one wishes, is the objective "real" situation which it is the business of thought merely to represent or point at.

But this is a very incomplete statement of the *whole* situation. First, there is the *desire to get rid of the ache*. It is this desire indeed that develops into ideas of the location of the ache and the physician. These ideas are but this desire getting into definite, efficient working form. And, as we have seen, this stops with no mere process of algebraic symbolization. The idea of the ache is of it as a "toothache" or "earache," or ache to be cured by the physician and of the physician as the curer of the ache.

Further, there is the "fact" that, however certain, definite, and complete may be the physician's location from the standpoint of those to whom the finding of the physician is no problem, it is no less a "fact" from the standpoint of the patient that his location is "uncertain" and "indeterminate." And if the patient's standpoint is as important in the situation as the physician's—and it would be hard to convince the patient that it isn't—what right have we to state the fact of the physician's location *entirely* from the standpoint of those who happen to be in an unproblematic space relation to him and call his location fully and completely determined, when for the patient and perhaps for many others it simply is not? Isn't this sheer superstition? Whatever the physician's space situation, it is "such that," to use a favorite phrase of the mathematician, although it may be determined for A, it is just as undetermined for B.

Here we shall doubtless be told that this problem of "location" is a *space* problem, and that space relations at all events are not dependent on ideas—that the space relations of the patient and physician are perfectly definite and determinate and wholly independent of the "aches" and "wants" and "ideas" of either the patient or the physician; that an object in space can not be both determinate and indeterminate, or determined on one side and not determined on the other. Surely it will be said, it is just the essence of the space world to be completely defined; every object in space must be in a perfectly definite and determinate relation to every other, entirely independent of wants and ideas. And this suggests that this conception of space may be the prototype, not to say parent, of the whole realistic conception of "independence." The realist does not, to be sure, speak of his world of "independent things" explicitly in terms of space relations, but the problems it presents are so homologous to those of space that it suggests a close kinship.

First, we should observe that for the mathematician this con-

ception of complete and independent determination of the space relations of objects applies not to such "objects" as a person with a pain or a physician seeking patients. The only "object" whose location for the mathematician is so completely determined is just a *point* of space itself, not an object *in* space. The moment we apply this complete determination to an object *in* space we land at once in the Eleatic's motionless world and have on our hands all of Zeno's puzzles. The conception of complete spatial determination will not apply to a *moving* object. A moving object is *as much* undetermined as determined. Any attempt to include motion itself in the complete determination reduces it to space, for in the conception of completely determined motion, all possible motions must already have taken place; all aching teeth must have been eternally "pulled."

The objector will doubtless admit that there is the pain of the patient and his uncertainty of the whereabouts of the dentist, but these—well, they just belong to *him*, not to the real and objective situation. In short, the location of the physician *as a physician*, in Plato's phrase, not a mere "point" in space, depends in the last analysis upon his *operative* relations to the patient; and uncertainty and ambiguity in this relation—no matter how unambiguous may be the relations of points in abstract space, and no matter whether the ambiguity is at the patient's or physician's end of the relation or both—are the "real" character of the situation to be overcome with the help of ideas, if so be.⁴

No doubt the realist will still insist that this ambiguity and indeterminateness of the physician's location is all in the patient's "mind," not in the world of "things," but the pragmatist persists (and here he would side with the idealist, *if* the idealist would only include *our* ideas in his idealism) that this indeterminateness and uncertainty of mind is an indeterminateness in the "real" *operative* (not the abstractly spatial) relations of things. The location of the physician as a physician—not as a point in space—is determined surely by the part he can play in altering aches and pains. Space is not something *in* which the physician merely is; it is a relation in and through which he *operates*. Take away this element of operation and there is nothing left with which to determine either distance or direction. The final test, as it is the final source of all determinations of space and motion, is the capacity for the maintenance or alteration of such values as our long-suffering and suffered toothache, the sound of a symphony, the imagery of a poem, the love of a friend, etc.

⁴ Of course, no situation is *wholly* indeterminate; the ache is already defined as the "ache of the tooth or of the ear," and the physician as "somewhere in town," etc.

But the difficulty which the realistic critic regards as the most crucial for the pragmatist's thesis—that thinking is a perfectly continuous part of the real interaction of things—is knowledge of the past. However it may be with present and future things, the past surely undergoes no alteration in “being known.” It can only be represented, symbolized, pointed at. “What’s done’s done.” “Banquo’s dead and can not come out on’s grave.” Yet what shall we say of Macbeth’s miserable cry, “If ’twere done when ’tis done,” and of Brutus’s “Thou art mighty yet.” Are they after all “mere rhetoric”?

In general it is difficult for the pragmatist to see how pastness can be a special or specially difficult case of knowledge since from his standpoint it is involved in *every* act of thinking. For him thinking is just a process in which “things” produced in the past recombine or interact to produce new “things.” It is to be noticed that the crucialness of these cases of the past seems to be greater in proportion to the amount of the pastness. Hence we find the instances usually selected from the remote past; “Cæsar’s passage of the Rubicon,” and “The discovery of America” are the well-worn citations. And yet perhaps some who would at first be disposed to agree with the realist that our knowledge of Cæsar’s passage of the Rubicon makes no difference in it *now*, might hesitate to say that its “being known” by the Senate and populace of Rome, and its being expected by Cæsar to be so known made no essential difference in it then. But in principle the case is the same, whether the pastness be a second or a century. To be sure, the present operations of Cæsar’s act through acts of knowledge are doubtless less extensive and important than they were 50 B.C. But whatever the character of its operations, even if they are confined to the second-year of high school, the method of operation, that is, through the process of knowledge, is still the same. And it would not seem to be a great strain upon the imagination to think that a man of affairs in time of a crisis might still be influenced by Cæsar’s example. But whatever the extent or the nature of the operation as a matter of fact may be, Cæsar’s act, like John Brown’s soul, goes marching on. Like all other “historic” acts, it is not yet finished, and never will be so long as it continues *through* acts of knowledge to produce new results.

Let it be remembered, insists the pragmatist, that this doctrine of the real efficiency of thought does not teach that thinking undoes or reverses or blots out any thing or event that has happened. It insists only that in becoming known or entering into knowledge a past act is altered in the sense that it takes on additional functions and consequences.

This last statement will doubtless suggest to the realist (1) that the pragmatist is entirely overlooking the distinction between a thing or an act and its "consequences"; that being known does not add anything to the past act itself, but only to its *results*: (2) the thing or act must *first* be "known" before the "real consequences" can occur, in so far as they occur through knowledge.

The first point precipitates the ancient "metaphysical puzzle" of the possibility of separating a thing from its effects, its is-ness from its does-ness. It is the old problem of the thing-in-itself. The realist's objection implies that the line between a thing and its consequences can be drawn ontologically and existentially, and is a fixed one. Yet when we apply this distinction to a specific case we are forced to make it a "working," not a metaphysical one. That is, we find that its location varies with our problem. Where, for instance, are we to draw the line between the "thing" typhoid fever, and its "effects"?

This of course does not mean that the making of this distinction is a matter of the arbitrary whim of the moment, as some have imagined. It means only that it shifts with the analysis and development of the problem. Nor must this "functional" interpretation of the distinction, as it often is, be considered as an attempt to abate or cheapen its importance and reality. It intends only to state in *what* this importance and reality consist.

However, the essence of the pragmatic view does not depend on this distinction. Whether we say the change is in the "thing" or "event" or only in its "consequences," the pragmatist's contention is that this change actually begins in the act of thinking. And this brings us to our critic's second point, namely: Granting that things and events acquire new consequences or new functions as a result of acts of knowledge, yet even so they must be known *before* these new consequences or functions can begin. The general form of the problem here is the same as in the first point, viz., the problem of introducing an ontological separation into a continuous process without destroying continuity. If by first being known is meant that the thing or event enters into a relationship of a "unique" self-contained character called "knowledge," and is not even the beginning of the process of "real interaction," then we must ask, When does this "real interaction" begin? If the interaction "depends" upon knowledge and yet is no *part* of it, how then is this state of just "knowing" or "meaning" or "pointing at" a thing transformed into "real interaction." Psychologically it is the old question of the connection between cognition and will. *If knowing is so qualitatively and functionally different from alterative action, how do we make the transition from it to efficient action?*

These are some of the questions⁵ which the realistic critics have not yet met, and it is the pragmatists' belief that when we come to deal in detail with these questions, we are forced to transform "representative" into "operative" realism.

For the pragmatist, knowledge is the beginning of new interactions or, if we prefer, of new "consequences." But the beginning of a *new* interaction is always to *some* extent ambiguous and confused. This first stage of new activity, therefore, is occupied with getting rid of this confusion and this process the pragmatist calls "thinking." On this view we do not have to jump out of a unique and separate and self-sufficient state of knowing into "real" activity. The knowing is our desire, our will, our "practical" interests getting out of ambiguity and confusion into order and efficiency. If, as a matter of terminology, we wish to say that the "real" interactions and the "real" consequences do not begin until after this confusion is cleared up, then we may say that the thing must *first* be known before, or in order that, "real" consequences may occur. But the process is a *continuous* one; it is all of a piece; it is not split into parallel strands of "thought" and "will."

Concerning the way ideas work, the case between the pragmatist, the realist, and the idealist stands thus:

The pragmatist agrees with the realist (1) that the "world" or "experience" (the term does not matter here) does not consist of "a system of ideas"; (2) that ideas do not aim or "desire" to absorb, or be absorbed by, the rest of the "world" or "experience"; (3) that at any given time some of the world (or experience) may be "independent" of knowledge in the sense that it is not then "being known," that is, it is not in the knowledge mode or stage or action. But at the next step, where the "unknown" part of the world (or experience) passes into knowledge, the pragmatist and realist part company. For the realist this passage occurs with no "essential" alteration in the material which enters into knowledge; while the pragmatist believes knowing to be a part of the process in which the world of "things" or "events" or "experience" brings forth new "things" or "events" or "experience."

Between pragmatism and idealism there would be a vital point of agreement in the conception of the "active," "constitutive" character of thinking if it did not turn out that for most idealists this character does not belong to "our" thinking, but only to the absolute thought. Here the pragmatist declares that the idealist's faith in

⁵ For additional questions and a searching analysis of the realistic position, read Schiller's discussion of Nunn's paper on "The Independence of Secondary Qualities in Perception," in the current volume of the *Proceedings of the Aristotelian Society*.

the fundamental article of his own creed falters, and that pragmatism in teaching the efficiency of "our" thinking is saving idealism from its own unbelief.

From this lack of faith, idealism agrees with realism that *our* ideas can only algebraically represent or "mean" or "point at" a world of reality "beyond." The disagreement consists in the fact that while the realist's ideas are quite content with this rôle, the ideas of the idealist long to swallow, or be swallowed by, the rest of the world.

A. W. MOORE.

UNIVERSITY OF CHICAGO.

DISCUSSION

A REPLY TO DR. BROWN

I FEEL compelled to say that one would obtain from Dr. Brown's discussion ("If the Blind Lead the Blind. A Comment on 'Logical Form' in Professor Perry's 'Realistic Program'")¹ a very incorrect notion of the text on which he proposes to "comment." Dr. Brown's comment relates to somewhat less than one page, taken from one of three sections of an essay of thirty pages. The section to which Dr. Brown refers was entitled: "The Realistic Program of *Reform*," and not, as quoted, "The Realistic Program."² In the page referred to, a "regard for logical form" was recommended as one of eight rules of procedure that I believed calculated just now to improve the state of philosophy. And in connection with the matter of "logical form," I urged that the philosopher test his procedure by the canons of modern logic, and avail himself of the technical treatment to which modern logic has submitted certain fundamental concepts such as relation, infinity, etc. In view of these facts, I can scarcely be charged, as is certainly suggested by the title and trend of Dr. Brown's argument, with proposing that philosophy should be merged into logic or slavishly accept its lead.

I have urged attention to the recent work of the symbolic logicians, because it seems to me that these investigators are dealing in a highly abstract and technical way, in other words, in an *exact* way, with certain matters in which philosophy is necessarily involved.³

¹ This JOURNAL, Vol. VII., No. 18, p. 491.

² Still less was it "Professor Perry's Platform," as stated, probably through no fault of the author, on the title-page.

³ Dr. Brown's demonstration of the inconsistencies of the logicians is interesting, but it has, so far as I can see, no bearing on the present dispute, which concerns the importance of logic for philosophy. If these inconsistencies were really fatal to logic, then they would be fatal to logic as a "sub-

The virtue of the logician's procedure is its *isolation* of these matters. For example, the philosopher deals with the relation of God to the world, or the relation of the idea to its object; whereas the logician is just now dealing in a very direct and rigorous way with *relation*. Now I am assuming that when one says "relation" one always means at least in some respect *the same thing*; and if that be the case, it will greatly clarify the manifold cases or applications of the concept if one can learn something about its generic character by the method of abstraction. And what is true of the concept of relation is true of such concepts as order, continuity, infinity, space, time, class, propositional function, definition, etc. I have raised no question as to the extent to which such conceptions ought to be employed in metaphysics, but have simply urged that when they are used they be used in that exact sense which logic is seeking to determine. It is doubtless true that many of these conceptions, and others once regarded as mathematical in an exclusive sense, have now become genuinely logical and fundamental. For it has been one result of the logic of mathematics to break down the barrier between logic and mathematics. Nevertheless, I have urged only that such conceptions should be used exactly, *where they are used*.

Thus since Professor Royce conceives the absolute self as infinite, he has done well to make use of the most exact definition of infinite that is available, but it does not follow that there *is* any infinite self, or that such a conception is either significant or profitable. Similarly, I have not urged any extension of "mathematical method" beyond its critical use. I have suggested that philosophy "apply to its own constructive procedure the most refined *tests* of scientific form." Dr. Brown's "suppose it were made the method of development," and his fear of the consequences of an exclusive use of dialectic in philosophy, are, so far as I am concerned, entirely gratuitous. Assuming that philosophers desire their results to be well reasoned and well grounded, I have simply recommended that they avail themselves, *for that purpose*, of the most approved critical methods.

Dr. Brown draws a moral toward the end of his discussion which I suspect is intended for others as well as myself. Combining the mathematical method with the "platform" idea, he becomes terrified at the figment of his own imagination—a company of realists reciting in unison a set of postulates, and leading identical lives deduced from common premisses. Now no realist, so far as I know, has ever ordinate philosophical discipline." But this Dr. Brown does not claim. Hence we must conclude simply that logic, like other sciences, is open to criticism, and that if its results are to be used they must be used with discrimination and not simply be "transferred."

suggested that knowledge is to be advanced solely by deduction from premisses. It is generally agreed, I should suppose, that knowledge is advanced mainly by *finding the premisses*. There can, then, be no question of an initial agreement "on a complete set of postulates." As to agreement in opinion or theory, the idea that lies behind the recent realistic platform is so simple and evident that I confess myself at a loss to argue for it. There is no desire to force agreement, but only a desire to make *implicit* agreement *explicit*, with a view to isolating the matters that remain under dispute, and obtaining a common basis for the discussion of them.

It follows, doubtless, that in so far as discussion promotes agreement, this further agreement should in turn be formulated. But the fear lest this procedure lead to a "dull" or "diseased" unanimity, is much like the fear lest through the success of one's moral efforts the world become too good to be interesting. These are not only groundless fears, but fears that if taken seriously would imply acquiescence in error and evil. Upon the basis of the experiment as so far conducted, I can testify that the encounter of minds that *meet*, is considerably less dull than that blind and aimless discharge of argumentation which is customary within the larger philosophical community.

RALPH BARTON PERRY.

HARVARD UNIVERSITY.

A NOTE CONCERNING "THE PROGRAM AND FIRST PLATFORM OF SIX REALISTS"¹

TO me, at least, this platform comes as a distinct disappointment, and this for three reasons: in the first place, it seems to narrow the scope of realism, and cut it off from the deeper content of philosophy; in the second place, its propositions are vague and ambiguous, perhaps from attempting too great generality; and in the third place, it is not evident to me that even these fundamental propositions are accepted in the same sense by all six platformists.

It is not easy to accept frankly the authors' statement that each of the given sets of propositions "has been discussed at length, revised, and agreed to by the other conferees" (p. 394), and in spite of the advantages of a common terminology set forth in the introduction, this instance of "deliberate cooperation" has not embodied that gain. Of course, it is somewhat premature to attempt to pass judgment on a preliminary manifesto, but it may be that others share my difficulties and that an expression of them may aid the platformists to get themselves in a clearer light through further utterances.

¹ This JOURNAL, Vol. VII., No. 15, p. 393.

Realism is here evidently a more limited conception than was intended in Professor Perry's "Program."² One is not sure of the general acceptance of the categorized and articulated structure of the world (*loc. cit.*, p. 368), or the assertion that a belief can be true because it adjusts an organism to an environment (*loc. cit.*, p. 370)—a sound proposition in Professor Dewey's Pragmatism, I believe. And there is no light thrown on Professor Perry's perplexing proposition "that natural science is not the whole truth" (*loc. cit.*, p. 367), which may mean (1) that it is not the *full extent* of truth, or (2) that it is not the *only kind* of truth, as is perhaps suggested by the close of the paper where two functions of philosophy, research and mediation, are distinguished.

The nucleus of the platform seems to be (1) "the external view of relations," but this phrase is given only anti-idealistic significance and before becoming a constitutive principle of realism needs explanation. One does not know whether the platformists would all define *relation* the same way, or how they would collectively or severally define it, or how they would solve the obvious problem of the relation of the relations to their terms. In so far, then, the content of the platform seems obscure.

They seem to be agreed (2) that the fact of being known in no way alters the thing known, apparently because knowledge is a relation and so external to its terms, although Professors Holt, Marvin, and Perry do not say explicitly that knowledge is a relation. Both Professor Spaulding (§ 2) and Professor Montague (III., § 1) refer to cognition as a relation, and Mr. Pitkin (§ 6) seems to make the knowing mind = consciousness = a relation. It is not clear that Professor Montague can admit consciousness to be merely a relation, for he has said elsewhere that it is potential energy, and if potential energy is merely a relation, what does the term relation mean?³ One suspects that if knowledge is a relation there would be various answers to the questions: What are its terms? Is it a one-one relation, or a many-one? Are the terms internal to the organism or external, or some internal and some external? Without an answer to these questions this part of the platform is empty.

There is (3) the further axiom (?) that all non-realists, especially idealists, are illogical.

But even if these theses are interpreted in agreement there are certain germinating differences that appear ominous if a significant doctrine is to develop.

² This JOURNAL, Vol. VII., No. 14, pp. 365-379.

³ N. B. Professor Perry (§ 1) says that attempts to overcome dualism "by reducing mind and nature to one another or to some third substance, are gratuitous." Then *potential energy* is not a phenomenon of nature? This platform "has been discussed at length, revised, and agreed to" by all.

1. Whereas Professor Perry (§ 1) incorporates in his platform an unmistakable attitude with respect to the issue between spiritualism and materialism, and both Professors Perry (§ 6) and Holt (§ 4) express themselves tentatively for pluralism, Professor Montague (I., § 3) definitely puts these issues outside of the province of realism. This is a grave limitation if acceded to by all six realists.

2. Professor Spaulding (§ 6) seems inclined to make the knowing process and its objects qualitatively dissimilar, but Professors Perry (§ 1) and Montague (III., § 2) seem explicitly to cut out this probability.

3. Professor Montague (III., § 3) seems to suggest some substantial view of consciousness that does not go well with Professor Perry's (§ 1) statement, "Thus physical nature, for example, is, under certain circumstances, directly present in consciousness."

4. Mr. Pitkin (§ 7) says that "There may be axiomatic truths or intuitive truths. But the fact that a truth belongs to either of these classes does not make it fundamental or important for a theory of knowledge, much less for a theory of reality. Like all other truths, it too must be interpreted in the light of other relevant truths." Is this pragmatism? Professor Spaulding (§ 4) writes, "There is at least one logical doctrine and one principle which are ultimately presupposed by any system that is held to be true," and Professor Marvin (§ 3) that "There are certain principles of logic which are logically prior to all scientific and metaphysical systems." Are these presupposed doctrines and principles fundamental or important, axiomatic or intuitive, or what?

If the platform-realists actually desire to be of service to philosophy it seems as if it might be fruitful to devote more energy to getting a clear expression of the meaning of their propositions before asserting agreement in them. There are many of us who are ready to admit that there are grave faults, perhaps errors, in contemporary idealism, but what is needed is not verbal agreement as to the source of these errors, but other possible solutions of problems to take the place of the rejected ones; that is, construction and not criticism, for the latter will take care of itself. In the words of Dr. Karl Schmidt,⁴ philosophy needs "to make up its mind" about certain significant issues, and when that has been done it is time to hunt for agreement in the results. And one might find that if this course were pursued, philosophers would not find themselves so far behind scientists in precision, cooperation, or progress. At any rate, realism could thus become a philosophy and not a mere movement of rebellion.

HAROLD CHAPMAN BROWN.

COLUMBIA UNIVERSITY.

⁴ This JOURNAL, 1909, p. 673.

REVIEWS AND ABSTRACTS OF LITERATURE

The Development of Religion. A Study in Anthropology and Social Psychology. IRVING KING. New York: The Macmillan Co. 1910. Pp. 371.

Herbert Spencer sought the origin of religion in ancestor worship, Frazer in magic, and Tylor in dreams, reflections, and similar phenomena; Dr. King believes that he finds it in the values which mankind in society place upon the objects and beings with which they are surrounded. In his own language he holds "that the social organization and its activities constitute the ground from which religious practises and religious consciousness itself are the more or less complex development."

In the introduction to his main argument the writer contends for a treatment of religious phenomena in no way different from that accorded to the other phenomena of which psychology takes cognizance. "For the psychologist," he says, "religious phenomena are primarily reactions of a certain kind and as such have some sort of setting within the life process of the individual or at least of the race . . . if a reaction toward certain ends is admitted as a fact." In his second chapter he takes up some preliminary questions regarding the evolution of religion, in which he takes the ground that religious ceremonials and other outward religious acts, instead of being results of religious consciousness, have actually been the cause of that consciousness. "The religious consciousness has been built up, or differentiated, from a background of overt activity and relatively objective phases of consciousness." "The assumption underlying the problem is," Dr. King goes on to say, "that the religious attitude of mind has had a natural history, that there was a time in the history of the race when a definite religious attitude did not exist, and that, in its genesis and in its development, it has been conditioned by the same laws according to which other mental attitudes have come into being." This naturally renders it necessary to study "the consciousness of value" which must determine the overt activities and hence the evolution of the religious consciousness, and to this the author next addresses his attention, finding confirmation of his belief in religious customs of the Malays, Australians, Indians, and other peoples.

From the ground of these "simple values" Dr. King now believes he can erect "those higher valuations of conduct, and even the so-called highest religious conceptions, those of God, freedom, and immortality," tracing their origin to "the influence of the social group upon the simpler values." He considers it demonstrated that the type of religion varies with the character of the social organization, and to support this conclusion he again appeals to the results of ethnological research. "Creation myths," he thinks, "are symbols of a certain type of value which can appear only among well-developed social groups."

Dr. King's next step is to prove that "The religious acts and ideas

are themselves an organic part of the activities of the social body," and hence the origin of religious practises and ceremonials. "Some ceremonials and religious practises seem to be the outgrowth of adjustments which to the savage are decidedly practical. Others seem to be more related to play, to sports of various kinds, and still others seem to be the outgrowth of feasts of rejoicing before or after the harvest or hunt, or of feasts and dances preceding the departure of a war party, or after its return."

At this point in his line of argument Dr. King finds it necessary to introduce another factor or concept, viz., "the notion . . . that there is in the universe, as the primitive man knows it, an undefined and hence more or less impersonal force, a force extremely potent in nature and in the affairs of human life, and with which man may in various ways come into *rapport*." The existence of this belief is supported in a lengthy discussion accompanied by a multitude of ethnological references. This leads by a natural transition to a consideration of the relation between this power and magic, and between the latter and religion taken in toto. Dr. King discusses Frazer's theory of the origin of religion from magic, concluding that "both magical and religious practises are diverse growths, not from any particular theory or hypothesis regarding the world, but rather from the primitive complex of naïve reactions." One of the cardinal distinctions between the two is that religion "develops most readily in the atmosphere of the group" while magic is "relatively an individualistic affair." Dr. King warns the student very properly against arranging religious types in series similar to those in biology, holding that "the only continuity in religious evolution is . . . the continuity of the social background, which under varying conditions produces varying types of religious growth."

So much of the preceding argument has dealt with vague religious ideas, that it now becomes necessary to account for those more definite, personal concepts which we term deities. This question is discussed at considerable length, but Dr. King finds their origin naturally enough in the social character of religion itself, definite deities having arisen from social matrices, largely through the association of the general power just noted with concrete things in the external world, especially human beings. Deities vaguely conceived are accounted for by supposing they were formerly prominent in tribal beliefs, but have lost that position owing to a shift in popular interest, depending perhaps on economic causes. Turning now to Hebrew and Christian monotheism, Dr. King shows that they by no means stand apart from other religions involving belief in personal deities, and he cites instances of the existence of monotheistic cults in a number of primitive tribes. He considers that in each case this belief was due to the working out by the tribe in question of its own peculiar environmental problems, and is inclined to agree with Budde, that Yahweh owed his unique, exalted position to the Babylonian captivity when the localized deities of Canaan naturally lost all of their specific significance. "Instead, then, of assuming that a metaphysical being gradually unfolds himself to mankind and little by little brushes

away the false gods, we should say that man, through reflection upon the practical problems of life, especially such as grow out of the ethics of custom, has come to deeper and more vital conceptions of value."

Regarding the relationship between religion and morals Dr. King says: "Our view of the religious consciousness, as built up through social custom and enriched through social intercourse, suggests a relationship between religion and morality that has not been sufficiently recognized in many treatments of the subject. Morality, as its etymology suggests, refers also to the customary, and on this ground we may argue with much assurance for the view that primitive morals and primitive religion are but two sides of the same thing," certain rules of conduct being necessary to the material well-being of the society, and this involves rules of conduct *conceived* to be necessary to its well-being as well as those that actually are.

"Religion and the Pathological" is made the subject of a distinct chapter and is skillfully handled, but the author is not inclined to lay too much stress on pathological features, while admitting them as of contributory importance. Dr. King's purely psychological treatment of religion in the body of his work leads him to say a word in his final chapter—a word very well said, by the way—as to the objective reality of religious concepts. His belief in this particular is "that our formulas and symbols err, not in overstating the possibilities of experience, but rather in narrowing down these possibilities and tending to limit them for all time." Again he says, "If the question of the reality of the order of existence postulated by religion is raised, we should have to say that probably all the concepts of religion fall *short* of an adequate account of experience *rather* than that they attribute too *much* to it." He takes the pragmatic position that after all the value which any religious concept or dogma has is in answering the practical appeal of some moment in the world's history, and that subsequent attempts to prove its validity apart from that practical appeal are bootless, the occasion for its existence having passed away.

The view-point and line of argument of the author of this work are mainly psychological and philosophical, so that an anthropologist is at considerable disadvantage in endeavoring to characterize it properly. Its vital weakness in the conception of his reviewer, when looked at from an anthropological standpoint, is that he several times falls into the error of which he so justly accuses Dr. Frazer, the treatment of certain attitudes as successive which are in fact contemporaneous. Thus while Dr. King criticizes Frazer for treating religion as an outgrowth of magic instead of another phase of the same phenomenon, he himself presupposes a social matrix out of which religious concepts arise and again he presupposes a belief in some vague general power, which *later* assists in the composition of personal deities. As a matter of ethnological fact we everywhere have society and practically everywhere we have belief in some general supernatural power and in personal deities. If individual tribes seem to lack either of these latter elements it is evident that they represent incidental

aberrations from an ethnological norm rather than survivals from any universal general condition. The sympathetic relation between society and religion, so carefully traced by Dr. King, is as certain as it is interesting, but too much stress should not be put upon it. When a tribe acquires a closely knit organization it is natural that the leaders within that organization should desire for it the most powerful supernatural support, and in the acquirement of this a tribal cult follows almost infallibly. In recording this official faith, since it is theoretically accepted by all members of the tribe, the student believes he has recorded the faith of the entire tribe, and naturally enough finds it more logical and definite than the beliefs of loosely organized bands where there is no recognized priesthood, *i. e.*, no theological specialists. But does the average layman in the highly organized tribe really have less vague beliefs than the average layman in tribes loosely organized? Would the one not be found as "vague" as the other? Again by "vagueness" is lack of an official religion meant, or lack of agreement in the religious beliefs of individuals in the same tribe? If the latter be a criterion of vagueness where shall we find more than in the midst of our occidental civilization? These considerations tend to weaken the thesis that the more definite character of religious beliefs and practises among highly organized tribes is proof of the social origin of religion. In fact there is no ethnological proof that religion is more a social than an individual phenomenon. Nor is the supposition that creation myths are most highly developed among well-organized tribes uniformly true, since some of the loosely organized California peoples have creation myths of a more philosophical character than do the better developed tribes of the eastern woodlands and north Pacific coast.

With Dr. King's contention for a purely scientific examination of religious phenomena untrammelled by any mystical consideration—except such as science itself may compel the investigator to recognize—the reviewer is heartily in sympathy, as also with his similar contention against drawing a sharp line of demarcation between monotheism and other forms of religion. The argument is generally well thought out and the book shows evidence of much research. In the judgment of the reviewer, however, it is of permanent value, not as it explains the origin of religion, but as it shows the sympathetic relation existing between social and religious concepts and activities. In his last chapter, indeed, Dr. King appears to undo a large part of his own earlier argument, for if "our formulas and symbols err, not in overstating the possibilities of experience, but rather in narrowing down these possibilities and tending to limit them for all time," it is preposterous to suppose that a half-truth has been evolved without any reference to the whole, or in other words that there has been a striving toward certain objects without any intimation of the existence of such objects.

In his preface Dr. King mentions as a difficulty to one seeking to interpret primitive religion that "one who has first-hand acquaintance with some of the natural races, and especially with their languages, naturally

looks with some suspicion upon the attempts of the psychologist to say anything worth while regarding primitive custom or religion, if, indeed, he even takes notice of such attempts at all." On the contrary, the majority of field anthropologists must realize that they are but blazing the way for the comparative student, and they are pleased to know that the facts which they are doing their best to obtain from our rapidly disappearing primitive races are being utilized by the comparative student. One suggestion might be offered in conclusion, however, and that is that more use be made of mythic material recorded among these various races than of the general conclusions of anthropologists themselves, which are, of course, second hand and may sometimes be unduly biased in favor of this or that pet theory.

JOHN R. SWANTON.

BUREAU OF AMERICAN ETHNOLOGY,
SMITHSONIAN INSTITUTION.

An Outline of Logic. BOYD HENRY BODE. New York: Henry Holt & Co. 1910. Pp. x + 324.

The author regards logic as training in reasoning and in clear thinking generally (Preface, p. v); accordingly, he lays most stress on those parts of logical doctrine which will show the student how to draw correct conclusions and to avoid fallacies. Ambiguity, a chief source of error, is treated thoroughly and practically; the traditional discussion of the syllogism is abridged; circumstantial evidence is assigned a place of importance; and the recognized inductive methods are somewhat rearranged, with a view to distinguishing proof of causal connections from that of merely universal connections. The author believes—and we think rightly—that the applications of logic in science have been too exclusively emphasized in the past (Preface, p. v) to the neglect of its applications in every-day opinion about matters of practical interest; hence most of his illustrations are drawn from current political and social questions. Yet he does not glide too lightly over the deeper issues concerning the nature of thought, of proof, of the test of truth, which are bound to appear in the course of the work. The concreteness and admirable clearness of his exposition are combined to an unusual extent with thoroughness of thinking and fairness to opposing doctrines.

As a working definition of reasoning he adopts in the introductory chapter the following: "reasoning or inference occurs whenever we assert something to be true on the ground that something else is true. When the reasoning is intended to convince some one else of the truth of the assertion, it is usually called argument" (p. 2). The final definition accepted is given in Chapter XIV., "The Nature of Reasoning," and is that of Professor James: "the substitution of parts and their implications or consequences for wholes," wherein "the part that is substituted for the whole is the point of resemblance or difference" (p. 216). At bottom, differences in reasoning ability exist because "men differ enormously in their sensitiveness to resemblances and differences" (p. 226) and "in the

power to break up . . . subject-matter into its different parts or elements" (*ibid.*). Logic is defined in Chapter I as "the *science of proof or evidence*" (p. 4). The elements of which reasoning is built up, concepts, judgments, classes, terms, are simply defined, with two sections at the end of the chapter showing the fundamental importance of classification for our thought about things, and the difficulties of such classification.

In Chapter II., on "Classification and Class Names," we begin to open our eyes to the fact that one of our chief sources of fallacious thinking lies in the difficulty of knowing and stating just wherein the members of classes *do* resemble one another. This is none other than the old enemy of the thinker, ambiguity of terms. What, for example, is common to all cases of *religion*, *capital*, or *labor*? Ambiguity is always purposive, to be sure, and so is vagueness. "So long as the term serves the purpose for which it is intended, the vagueness may not matter a great deal" (p. 18): hence we can and do use without danger many terms which we could not define clearly. Yet Professor Bode succeeds in making the reader feel, by the force of excellent examples which can not be enumerated here, that a very large part of men's disagreements and uncertainties on practical matters are due to their not defining their terms for the purpose in hand. Chapter III., on "Ambiguity and Definition," carries the subject further. Ambiguity is distinguished from vagueness, which latter may not always work evil: ambiguity is "the neglect of distinctions in the meaning of terms, when these distinctions are important for the given occasion" (p. 30), while "vagueness may be unimportant" (p. 29). Perhaps this distinction may strike the reader as arbitrary, but at any rate the treatment of ambiguity itself is excellent. The traditional rules of definition are cut down to the "genus-differentia" rule, which is rightly treated as often useless, and the rule against synonyms. A criticism occurs to us here, might not the other rules be easily shown to be of value? Chapter IV., on "Some Special Forms of Ambiguity," enumerates three main fallacies: accident, relative terms, and abstract terms. The first includes both the direct and the converse fallacy,—which seems wise. There is no difference in principle between them, and less memorizing is involved than in the current scheme. On the whole, he makes accident to mean that "sweeping statements must not be taken too seriously" (p. 40). This is good, but why does he say that this fallacy is committed "not by the person who makes the statement, but by the one who construes it" (p. 38)? The fallacy of relative terms is one which overlooks, *e. g.*, that "what is wealth for one person is not necessarily such for another" (p. 45). It is perhaps a matter of personal preference, whether or no we should regard this as different from accident; at any rate it is a frequent and important source of confusion. The fallacy of abstract terms, however, seems more doubtful. Is there any realm of thought, outside of philosophy itself, where this works harm? Or if there is any such realm, is it not really another kind of fallacy? Appeals to the cause of "progress" or "humanity" (p. 49 gives the

former case) to justify an act are surely better classed as accident or question-begging. Why give a new name when the old will suffice? And, moreover, abstract principles are too effective and useful, as appeals to human thought and emotion, to be ruled out of our common thinking—provided we recognize their sweeping character.

Chapter V. takes up the subject of propositions. Conversion is rendered more intelligible than usual to the beginner. The author regards the converse, obverse, and contrapositive, not as "immediate inferences," but as different ways of stating one and the same judgment. False obversion—an almost irresistible lure to the student—is carefully guarded against by a painstaking analysis (pp. 60–61). The syllogism is treated, avowedly in bare outline, in Chapters VI. and VII. We think some practice in the moods and in proving the rules about particular premises might well have been given the student: it can easily be made clear and is the best kind of training in exact thinking. The two main uses of the syllogism seem to the author to be, to lead us to interpret our sentences correctly (p. 92) and to acquaint us with the structure of complete arguments, by laying bare hidden premises (p. 92). We think there is also a third use: training of a semi-mathematical nature, in exactness of proof. A little more of this might have been imported without making the student forget the concrete applicability of logic as a whole.

Chapter VIII., on "False Assumption or Begging the Question," gives but two classes of fallacy: circular reasoning and irrelevancy. It does seem a little artificial to bring the latter under the head of question-begging. Surely the old classifications were better here. Only two of the "*argumenta ad . . .*" are mentioned; the *ad hominem* and the *ad populum*. The appeal to ignorance, to reverence, and the others seem to us important enough to deserve separate mention. But the discussion so far as it goes is, we must admit, more concrete and practically useful than in most of our logic text-books.

Induction is treated in Chapter IX., on the "Proof of Universal Connections," and Chapter X., on the "Proof of Causal Connections." The method of agreement is adapted only to the former; that of difference, with its group-form, the joint method, and its exact quantitative form, that of concomitant variations, to the latter. We would suggest, however, that universal connections are almost always based on causal ones. Is it then practically worth while to make this distinction? Does it bring out any better the lack of strict cogency in agreement, to mark it off thus? One feels that such an innovation in an elementary text-book should be justified not merely by its logical soundness, but by its usefulness in getting the student to apply the methods. Moreover, the method of residues is so very common—*e. g.*, in criminal investigations—that in spite of its negative character it seems to deserve notice (see Preface, p. vi). The inadequacy of inductive proofs is strengthened by appeal to the principle of "reasonable doubt" (pp. 117 and 166); this we regard as an excellent way of putting the old law of parsimony (*cf.* p. 190, foot-note), which connects the latter with present-day legal usage and shows its practical bearings.

Indeed, the author uses this principle as a common foundation for the subject of inductive proof and of circumstantial evidence. After a brief discussion of probability in Chapter XI., he introduces the important topic of circumstantial evidence in Chapter XII. This is one of the best chapters in the book. It shows that the ultimate test of truth is *convergence of evidence* (pp. 186, 198), which later on, in Chapter XIII., on "Observation and Memory," is shown to reduce to *coherence*. "Coherence of facts is our standard of truth" (p. 210). To this must be added the rule that "we regard them [our perceptions and memories] as presumably true in the absence of reasons to the contrary" (p. 212), and we have as the result the twofold test of truth which underlies all reasoning, whether deductive, inductive, or circumstantial.

Space forbids more than a mention of Chapter XIV., on the "Nature of Reasoning"—a fine psychological analysis—Chapter XV., on the "Authority of the Test of Truth"—a refutation of ultimate scepticism—and Chapter XVI., on the "Problem of Sense-Perception," designed to interest the student in the philosophic problem of knowledge. At the end of the book is a rich collection of examples.

Perhaps the novelty of the classifications of fallacies and inductive is; the author's clear style, moderate tone, careful thought, and power of making a difficult subject concrete, practical, and interesting, seem to us almost unexcelled.

W. H. SHELDON.

DARTMOUTH COLLEGE.

The Moral Life, a Study in Genetic Ethics. Volume I. of the Library of Genetic Science and Philosophy (Psychological Review Publications). ARTHUR ERNEST DAVIES. Baltimore: Review Publishing Co. 1909.

The members of a civilized community, according to Professor Davies, may be divided, from the point of view of the moralist, into two classes. One includes those who have—in kind, at least—the same clear conception of the ends proposed by the moral ideal which the well-instructed moralist himself possesses. The conduct of these men, in so far as they do right, is determined with explicit reference to this ideal; they alone are truly free; they alone possess—in the moral sphere, at any rate—what the author calls "individuality," or originality. The other class, which includes the great majority, have no conception of the relation of moral action to the ideal. Their morality is due to the fact that "the community works upon the subject" in such a way that "his reactions are mechanized in conformity to a common type." Such persons acquire the approved ways through imitation, and both acquire and maintain them, in great part, for "the pleasure which one has in doing things which others are doing." The factor which must be added to these actions if they are to be regarded by the agent as *moral*, is a consciousness of social approbation. This, in its turn, of course provides a new motive for action. The members of this class, as blindly imitative, have, in our author's terminology—by which he seems to set much store—mere "personality."

They are slaves, seeing in morality nothing higher than the categorical imperatives, issued by society: "Thou shalt" and "Thou shalt not."

The members of the second class are conservators of the traditional; those of the first are always innovators. Why insight into the *rationale* of morality should necessarily lead to the destruction of its existing forms is not made entirely clear. The view is probably due to the idea that rational insight never arises except in a practical situation where the rules which have guided the agent in the past offer no clue as to how to proceed. The ideal that emerges in consciousness on such occasions is the ideal of a common good comprehending the interests of all those in any way implicated in the situation. Precisely what this implies the reader is not informed. But in any event it involves "the reconciliation of the conflicting interests of the individual and society."

The foregoing summary does not, however, adequately represent the book before us. For these simple ideas are set forth upon a crowded background of psychological theory, a theory which, while it evidently owes much to Professor Baldwin, is in considerable part the author's own creation. Its function is to afford an analysis of the stages of moral growth presented to the view, and to explain the transitions from one stage to the next. This theory is one that could not be fairly stated in a few words; it seems to me thoroughly inadequate and in every other respect unsatisfactory; furthermore its main outlines are presented in readily accessible form in Volumes III. and IV. of this JOURNAL. For these reasons I shall excuse myself from the attempt to set it forth.

Any estimate of the value of Professor Davies's contribution to ethical theory must, of course, depend upon one's view as to the accuracy of the descriptions upon which everything else is based. Are there, we must ask, two and only two attitudes toward the moral ideal, blind obedience to custom and explicitly formulated knowledge? Is there, indeed, any adult member of a civilized society with a mind corresponding to the description given of the earlier of these two stages? The affirmative answers are calmly assumed. I do not propose to argue in this place in behalf of the negative. But I do not see how it can be denied that there is enough *prima facie* evidence for the inadequacy or incorrectness of the assumed positions to make it obligatory for a careful student to examine them with great care before he proceeds to build upon them an elaborate superstructure. Professor Dewey's study in the *Popular Science Monthly* entitled "The Chaos in Moral Training," and some of the investigations conducted or inspired by Earl Barnes, certainly seem to show that the conscience even of a six- or eight-year old child is not mere putty in the hands of his parents, as those parents oftentimes fondly suppose. Any first-hand investigation of the moral consciousness of the members of the community in which we live will show that, at the least, this consciousness is a far more complex thing than any such theory as the one before us has ever dreamed of. Professor Davies is fond of referring to Hume. And he so far agrees with the latter as to recognize that the moral ideal is essentially social. But he might have learned from the great Scotch

moralist that quite apart from the conclusions supplied by direct observation, a consideration of the altruistic elements in human nature would show *a priori* that any perceived good or ill effects produced by volition upon human welfare can not do otherwise than arouse the moral judgment, so that at least a large proportion of the moral judgments of even the most illiterate must be based upon an insight into and concern for the values involved.¹ A similar *caveat* might be entered against another fundamental assumption of the book, that common sense, when it does rise to the reflective stage, unites in regarding the moral ideal as necessarily annihilating all incompatibility between the interests of the agent and others. To be sure, all these positions have behind them the support of powerful traditions. This may create a presumption that they embody certain elements of truth. But the array of discordant facts is so great as, in its turn, to create the presumption that the views in question do not represent the whole truth. It is folly to work on the superstructure before the foundation is secure. Accordingly, the next step in the progress of descriptive ethics can not be anything else than a searching scrutiny of the traditional theories in order to determine the exact proportion of truth and error which they contain. When this has been done and when our psychology is in a more satisfactory state it will be time enough to publish speculations concerning the evolution of moral ideals.

FRANK CHAPMAN SHARP.

THE UNIVERSITY OF WISCONSIN.

A Text-book of Experimental Psychology. CHARLES S. MYERS. New York: Longmans, Green, & Co. Pp. xvi + 432.

A most thorough and modern presentation of the elementary facts of psychology will be found in Myers's text-book. Special emphasis is placed on sensation, but there are chapters on memory, attention, and feeling. A chapter is devoted to psychophysical methods of measurement, and another is given to a discussion of statistical methods of measuring series, and of correlating mental abilities. All the discussions in the book are accompanied by quantitative measurements and by illustrations, both of the matter treated and of the apparatus involved. References are given at the end of each chapter and a series of experiments is added at the end of the book. Nothing in the line of recent research seems to have been overlooked. The text-book easily takes its place among the best and should be in the hands of every student of psychology.

The chapters on sensation are exceptionally thorough. Many new facts in connection with touch spots, heat spots, and cold spots are given. Researches by Dr. Head and others point to a non-punctate system for warmth and coolness other than the peripheral system for heat and cold. Two systems of sensibility seem to be present, a protopathic, in which areas are sensitive to heat and cold, and an epicritic, in which reaction exists only to warmth and coolness. In connection with auditory sensations are discussed all the physiological, physical, and harmonic principles

¹ See "An Inquiry Concerning the Principles of Morals," Section V., Part II.

dealing with and explaining sound. Helmholtz's theory of sound is given in full, and with it other theories, notably those of Rutherford, Ewald, and Myer. In connection with labyrinthine sensations are treated aspects of the Mach-Breuer-Brown theory. Sensations of movement are ascribed in part to labyrinthine sensations, and in part to eye movements and sensations of movement in the locomotor apparatus. Such motor sensations are felt in the muscles, tendons, and joints. They seem to be chiefly of articular origin. Of color sensations a similarly thorough treatment is given. The four characters of color sensation are hue, intensity, saturation, and brightness. Color contrast, color induction, color mixture, color blindness, flicker, intrinsic light of the retina, etc., are some of the topics which indicate that little in the field of visual attention has escaped the attention of the author. The theories of color vision set forth by Young, Helmholtz, and Hering are discussed and criticized in the light of more recent experimentation. Sensations of taste and smell are set forth with like elaboration of detail. Statistical methods are treated both on the side of correlation of series and measurement of series, and of the psychophysical methods common to the laboratory. Memory, attention, and feeling are discussed. Under "memory" are set forth methods of learning, imagery, association, the rate of forgetting, distribution of repetitions, muscular work, mental work and fatigue, mental tests, etc. Topics such as sensory acuity, identity and difference, binocular and binaural experience, size and direction, time and rhythm, etc., also receive close consideration.

The book is replete with facts of which the above selection gives but an incomplete idea. It is a question whether any single book contains as much information as does Myers's text-book.

FELIX ARNOLD.

NEW YORK CITY.

JOURNALS AND NEW BOOKS

ARCHIV FÜR SYSTEMATISCHE PHILOSOPHIE. XVI. Band, Heft 2. May, 1910. *Ueber die Koeffizienten einer logischen Gleichung und ihre Beziehungen zur Lehre von den Schlüssen* (pp. 149-176): OLGA HAHN. — Given n domains, the logical relation that may obtain between them has the form: $a_1C_1 + a_2C_2 \cdots + a_mC_m = 0$, $m = 2^n$, where $C_1 \cdots C_m$ are the constituents formed by the products $(R_1 + R_1')(R_2 + R_2') \cdots$, and $a_1 \cdots a_m$ are the coefficients. [R' = the negat. of R .] If now an inference of n members be conceived as a system of conditional equations, there results for the coefficients very simple relations highly instructive for the theory of inference. All the syllogisms of Aristotle and Solenus are thus readily deduced and in conclusion also Lambert's seven inferential forms. *Versuch zu einer physiologischen Grundlage der Freiheit* (pp. 177-190): O. HILFERDING. — The basic psychical forces thinking, feeling, willing follow fixed laws; how then is freedom possible? The latter is not a quality of these forces but their functional product, much like the kaleidoscopic image which is the product not of the sundry mirrors, but of

their relation and mutual inclinations. *Ein neuer und leichter Beweis für den philosophischen Kritizismus* (pp. 191–216): A. WEDENSKY. – Criticism (in its dealing with the scientific claims of metaphysics) is readily established by the aid of the laws of thought which are either natural, normative, or mixed. So are the laws of the excluded middle and of identity *purely natural*, the law of sufficient reason is *purely normative*, while the law of contradiction is natural-normative. It is impossible to *think* a contradiction, and yet an *effort* is needed to avoid one, for what we are able to *think* (e. g., a four-dimensional space) we are not, therefore, able to *image*, and the law of contradiction is natural in the case of presentation, but normative in that of thought. Thus our inferences respecting objects unrepresentable such as things-in-themselves carry no necessary validity, whence the impossibility of metaphysics as a science. *Le positivisme de Lamarck* (pp. 217–246): H. G. MOREAU. – Numerous quotations from his works show Lamarck as the worthy precursor of Comte. *Kategorischer Imperativ und Religion* (pp. 247–249): M. MEYER. – While Kant's categorical imperative in ethics is focused mainly in the individual, religion colligates the moral with feeling and thinking into universally human unity. *Ein logischer Versuch über das Kategorienproblem* (pp. 250–253): T. KEHR. – The problem of the categories (ontological with Aristotle, epistemological with Kant) is logically solved on the basis of the possibility of being in its various structures. *Zur Frage des Nachweises synthetischer Urteile a priori in der Mathematik* (pp. 254–273): H. BERGMANN. – Pure mathematics in Grassmann's sense is analytic; the discussion of synthetic judgments *a priori* belongs therefore to *applied* mathematics. Synthetic *concepts* enter all *analytic* judgments (and hence also pure mathematics), and it is this very confusion of synthetic *concepts* with synthetic judgments that has drawn out the discussion of the classic $7 + 5 = 12$. *Die Philosophie in Finnland* (pp. 277–288): W. EIGENBRODT. – Historical survey. *Die neuesten Erscheinungen*.

- Bolton, Frederick Elmer. *Principles of Education*. New York: Charles Scribner's Sons. 1910. Pp. xii + 790. \$3.
- Bovet, Pierre. *La définition pragmatique de la vérité*. Extract from la *Revue de théologie et de philosophie*. St. Blaise: Foyer Solidariste. 1910. Pp. 37.
- Brown, William. *Some Experimental Results in the Correlation of Mental Abilities*. Reprinted from *Journal of Psychology*, Vol. III., Part 3. 1910. Cambridge, England: University Press. Pp. 296–323.
- Brown, William. *The Use of the Theory of Correlation in Psychology*. Thesis approved for degree of Doctor of Science in the University of London. Cambridge, England: University Press. 1910. Pp. 83.
- Henke, Frederick Goodrich. *A Study in the Psychology of Ritualism*. A dissertation submitted to the faculty of the graduate school of Arts and Literature in candidacy for the degree of Doctor of Philosophy. Chicago: University of Chicago Press. 1910. Pp. vii + 96. \$1.05.
- Jones, Amanda T. *A Psychic Autobiography*. New York: Greaves Publishing Company. Pp. 459.

- Levi, Adolfo. *La Filosofia dell' Assoluto in Inghilterra e in America*. Reprinted from the *Cultura Filosofica*. 1910. Prato: Tipografia C. Collini & Co. Pp. 52.
- Levi, Adolfo. *Studi Logici*. 1. *Lo Psicologismo Logico*. Reprinted from *Cultura Filosofica*. 1909. Prato: Tipografia Carlo Collini & Co. Pp. 68.
- Lombard, Emile. *De la Glossolalie chez les premiers Chrétiens et des Phénomènes Similaires*. Lausanne: Georges Bridel & Cie.; Paris: Librairie Fischbacher. 1910. Pp. xii + 352.
- McCabe, Joseph. *The Evolution of Mind*. London: Adam & Charles Black; New York: The Macmillan Company. 1910. Pp. xvii + 287. \$2.
- Nicholson, Anne M. *The Concept Standard. Contributions to Education*, No. 29. New York: Teachers College, Columbia University. 1910. Pp. 138. \$1.50.

NOTES AND NEWS

AMONG the courses of Lowell lectures announced for the present season are, eight lectures by Franz Boas, LL.D., professor of anthropology in Columbia University, on "Cultural Development and Race." (1) "Human Faculty and Race," (2, 3) "Hereditary Stability and Adaptation in Human Types," (4) "Human Faculty as a Result of Cultural Development," (5) "Relations between Type, Language, and Culture," (6) "Unconscious and Rational Elements in the Mental Development of Mankind," (7) "Can the History of Civilization be considered as a Single Evolutionary Series?" (8) "Types of Thought in Primitive and in Advanced Society." On Wednesdays and Fridays at 8 P.M., beginning Wednesday, October 19. Eight lectures by Edward Bradford Titchener, LL.D., Sage professor of psychology in the Graduate School of Cornell University, on "The Structure of Mind." (1) "The Problem," (2) "The Method," (3) "Sensation," (4) "Attention," (5) "Perception; the Problem of Meaning," (6) "Conscious Attitude," (7) "Memory and Imagination," (8) "Patterns of Consciousness." On Tuesdays and Thursdays at 5 P.M., beginning Tuesday, November 1. Eight lectures by William Ernest Castle, professor of zoology in Harvard University, on "Heredity in Relation to Evolution and Animal Breeding." (1) "Biological Discoveries Leading to the Rediscovery of Mendel's Law," (2) "Mendel's Law of Heredity and the Mendelian Ratios," (3) "Evolution by Loss or Gain of Unit Characters or by Variations in their Potency," (4) "Mendelian Unit Characters and Selection," (5) "Blending Inheritance and its Relation to Mendelian Inheritance," (6) "Reciprocal Crosses and Fixed Hybrids; Sex-limited Inheritance," (7) "Effects of Inbreeding and Cross-breeding," (8) "Sex Determination and Sex Control." On Mondays and Thursdays at 8 P.M., beginning November 28. Eight lectures by Sir John Murray, K.C.B., F.R.S., LL.D., etc., of the *Challenger* Expedition, on "The Ocean." On Mondays and Thursdays at 8 P.M., beginning Monday,

February 6. Dr. Svante Arrhenius, of Stockholm, will give a course on "Cosmology." Detailed announcements concerning this course will be given later.

AMONG the forthcoming new books we note from Chapman and Hall, "The World of Life: A Manifestation of Creative Power, Directive Mind, and Ultimate Purpose," by A. R. Wallace; from Swan Sonnenschein and Co., a translation of Hegel's "Phenomenology of Mind," by J. B. Baillie, 2 volumes; "Thoughts and Things: A Study of the Development and Meaning of Thought or Genetic Logic," by J. M. Baldwin; "Matter and Memory," by H. Bergson, translated under the author's supervision by N. M. Paul; "Adolescence," by J. W. Slaughter; "Physiological Psychology," by W. Wundt, a translation of the fifth and wholly rewritten German edition by E. B. Titchener; new editions of the "History of Esthetic," by B. Bosanquet; "Riddles of the Sphinx: A Study in the Philosophy of Humanism," by F. C. D. Schiller; "Darwinism and the Humanities," by J. M. Baldwin; and from Williams and Norgate, a popular edition of Herbert Spencer's "First Principles," 2 volumes.

THE nineteenth annual meeting of the American Psychological Association will be held in Minneapolis during Convocation Week, December 28 to 30. Plans are being made for a joint session with the Western Philosophical Association. There will probably be a session devoted to educational psychology, to which the members of the North Central Association of Teachers of Psychology, who are to hold their third biennial meeting in Minneapolis at that time, will be invited; and it is possible that a session will be devoted, wholly or in part, to a discussion of the relations between psychology and medical education. All titles of papers offered for the session should be in the hands of the secretary, Professor A. H. Pierce, Smith College, Northampton, Mass., not later than December 15.

THE Western Philosophical Association will hold its eleventh annual meeting at the University of Minnesota, Minneapolis, on Tuesday and Wednesday, December 27 and 28, 1910. The sessions will include an address by the President of the Association, Professor Evander Bradley McGilvary. Titles of papers should be sent to the Secretary, Bernard C. Ewer, 614 Clark Street, Evanston, Ill. The papers should not exceed twenty minutes in length, since otherwise the time allowed for discussion is necessarily shortened. Members of the Association who desire copies of the Proceedings of the last meeting may have them by applying to the Secretary, Bernard C. Ewer.

THE Society for Philosophical Inquiry, of Washington, D. C., met on November 1 in the rooms of the Public Library. The meeting was given up to a discussion of the present state of philosophy in America, led by J. Macbride Sterrett.

MRS. HELEN THOMPSON WOOLLEY, formerly head of the department of psychology at Mount Holyoke College, is assisting in the department of philosophy in the University of Cincinnati.

THE JOURNAL OF PHILOSOPHY

PSYCHOLOGY AND SCIENTIFIC METHODS

SOME OF THE TENDENCIES OF PROFESSOR JAMES'S WORK

THE editor has suggested that I should contribute to the JOURNAL at this time some survey of the work of Professor James. I confess that the effort to comply brings on me a feeling of incapacity to count up in any just reckoning the contributions of one who has left such an impress on our actual philosophy and psychology and on the spirit of every man who knew him well. The impressing hand has been too abruptly withdrawn. The impression itself is too different from anything else we have known. And the counting of theorems and suggestions up to the date when they ceased would seem too far from exhausting the matter. There was another contribution, given from the beginning and still to be received by those who ponder his work—the sense of a reach that exceeds each grasp, of a faculty of vision strained into the dimness because it catches the sure sign that there is something there, of a direction of the eyes that we may follow. It was a direction of the whole spirit, the striving will to perceive. It can not be described in full because it was a direction. Emerson has written, “To have a new perception every day, that is greatness.” I think he means, to have a new perception of the same matter. I find I wrote on the margin of the page years ago Mr. James’s name. The more we feel the importance of some of his well-defined contributions, the more we feel how deep in his thought lay the principle according to which “it is contented to regard its most assured conclusions concerning matters of fact as hypotheses liable to modification in the course of future experience.” Here is a philosophy that does constantly dream of more things both on earth and in heaven than are written of in its formulas. This had something to do with the encouragement that flowed from him to minds and temperaments contrasted with his own. Their experiments in thought were connected with the same enterprise and the same risk. On that common enterprise, with a youthful ardor that strangely increased in the last decade of his life, his heart was set. I

shall not forget how he once said that he intended to close his last book on philosophy with the words, meant for all students who should come after, that, if he was wrong:

"A shipwrecked sailor, buried on this coast,
Bids you, Take sail;
Full many a gallant bark, when we were lost,
Weathered the gale."

In speaking of such a mind it is less difficult at this time to point out tendencies than to set about the ambitious task of doing justice to contributions. And it is a satisfaction that at a moment when there is a temptation to the weakness of mere eulogy I can use the words of an address on the general features of Mr. James's thinking delivered at the suggestion of a colleague last spring. In these words, without material change, I shall proceed. Since his work will not let us bind it into one whole, the best I can do is to point out certain touches of common purpose that make all parts of it akin.

Psychology, according to its name, is the science of the soul. The most important fact about the psychological work of Mr. James lies in this: he makes that name sound less amusing as a designation for the actual science than any writer before him. We know that the word $\psi\chi\acute{\eta}$ does not mean simply what our literature means by the soul. But $\psi\chi\acute{\eta}$ embraces what our word means. Psychology should be the science of the whole conscious life. Human psychology should be the science of human nature. It is Professor James more than any other who has brought the study near enough to its ambitious goal to let us feel ourselves in his account of us. That is, his work gives us an insight into something besides the elements and analytics of the subject, something besides the dissected tissues of the mind and the laws of their connection; it gives us an insight into the thinking and feeling life in its whole atmosphere and inward flavor. He has a touch that seems in a manner to paint us to the very life. He has the sense of our way of feeling and in his own analytics he does not lose the sense of it.

This remark seems only to go into his psychology. But his psychology goes into all his work. The contribution of one who has the sense of our real way of feeling; this is the contribution that Mr. James offers on problem after problem of philosophy proper. He will not suffer philosophy to ignore the way life feels. To call us back to this is the service and mission to which, whether consciously or otherwise, he has devoted himself. Thus his work is almost all either a contribution to psychology or a contribution from psychology. In this peculiar sense he is always a psychologist—a man whose eye is always first caught by "the stream of consciousness," or lovingly finds his way to it.

For one example, consider his treatment of the standard of all thinking, rationality. What he at once fastens our attention upon is not the law of rationality, or the principle of rationality—some system as impersonal as mathematics—but “the sentiment of rationality”—a name he gives to an essay as pregnant I think (whether we agree with it or not) as anything he has written on philosophy: What are the marks by which a philosopher recognizes a conception as rational. “A strong feeling of ease, peace, rest is one of them. The transition from a state of puzzle and perplexity to rational comprehension is full of lively relief and pleasure.” There are very good grounds for saying, further, that the relief is negative rather than positive; it is based on the absence of any feeling of irrationality. “Just as we feel no particular pleasure when we breathe freely, but a very intense feeling of distress, when the respiratory motions are prevented,” so “any perfectly fluent course of thought awakens but little feeling,” but “when the thought meets with difficulties, we experience distress.” “As soon . . . as we are enabled from any cause whatever to think with perfect fluency, the thing we think of seems to us *pro tanto* rational. Whatever modes of conceiving the cosmos facilitate this fluency, produce the *sentiment of rationality*. . . . Our pleasure at finding that a chaos of facts in the expression of a single underlying fact is like the relief of the musician at resolving a confused mass of sound into melodic or harmonic order.” This is telling us how rationality feels. The essay takes it on the side it presents towards us; and bids us see and confess that we can not really take it upon any other side. The essay adds that what is true of thought is true of action; there is distress when it is obstructed and relief when it is unobstructed. These feelings are of the same nature as those that attend on thought. When we can act with free ease and success on whatever comes in our way we experience a sentiment of rationality. But the two cases are not therefore on an equal footing; the reflective is incidental and subordinate to the practical. “It is far too little recognized how entirely the intellect is made up of practical interests.” All mentality may be reduced to the type of “reflex action.” Knowledge is but a cross-section of what in its totality is a motor-phenomenon. “We are acquainted with a thing as soon as we have learned how to behave towards it, or how to meet the behavior which we expect from it.” The sentiment of rationality then, fully understood, means a sense of ease in the discharge of the whole conscious activity of life. Rational verification of a theory means that if you act upon your theory you will so far as it goes experience no obstruction to your activity. These are but fragments of the essay. Published in 1879, it is one of the chief sources of the doctrine, or set of doctrines, now called

"pragmatism." So far as pragmatism is a doctrine about the nature of evidence, telling us how ideas are verified, what is the test of truth, pragmatism is found in this essay, asserted by the way. All human theory and faith are placed in the class of "working hypotheses" to be tested by activity based on them and the harmony or discord that we feel in consequence.

So far as pragmatism undertakes to be a theory of what we mean by truth, the essence of it is found in the address delivered in 1884, called "The Function of Cognition." Truth, that is, the trueness of an idea, that is, the fact that an idea *refers* to something which is—that is a matter of the experienced workings of the idea in our mind and life. It might perhaps have been called, not a theory of truth, but a theory of reference. It is an analysis of what reference feels like and comes to from the thinker's point of view.

For a second example, take the question how the mind is related to the body. More and more, as we examine, motion turns out to be caused by motion, the physical world seems to be in all its recesses a scene of mechanical law. The motions of the body, the brain—by parity of reason we must expect these to be mechanical too. So the idea arises that the body, even the human body, is an automaton, made by nature to respond appropriately to the world around. Our consciousness, then, is an accompaniment of this bodily machinery, but does not manage it or interfere with it at all, being a reflection or an echo of the busy life of cells and nerves—"an inert spectator," as Mr. James puts this theory of automatism, of events which it is powerless to check or further. It is a theory which, as the reader will recall, he is not prepared to accept. I can only glance at the central point of his argument and can not do it justice. Consciousness, he argues, grows the more complex and intense the higher we rise in the animal kingdom. That of a man must exceed that of an oyster. From this point of view consciousness seems an organ, super-added to the other organs which maintain the animal in the struggle for existence; and the presumption is of course that it helps him in some way in the struggle, just as they do." "Every actually existing consciousness seems to itself to be a *fighter for ends*," not an "inert spectator." "Now let consciousness only *be what it seems to itself* [the italics are my own], and it will help an instable brain to compass its proper ends"—it will steer an organ "grown too complex to regulate itself." You see, he will not suffer philosophy to ignore the way life *feels*.

For a third example, there is what he calls "perhaps the most pregnant of all the differences in philosophy," the difference between monism and pluralism. To the natural eye there seem to be in the world many separate things which may easily be seen and thought

of each by itself; and because there are many of them the world is a grand total; and because they have properties of affecting each other the whole world is in a measure interdependent. By monism, as Mr. James uses the term, I understand the view that everything there is depends wholly for its existence and its change upon the remainder of the world; so that the whole is not divisible into many things, but, rightly understood, is one thing. Every part, every life, is firmly held in place by the system. Take hold of anything in thought and if you really get a purchase the rest comes with it. It is what he has called in one of his much-quoted phrases a "block-universe." Mr. James states the problem thus and faces it at various points in his thinking. For instance, he faces it when he treats of free-will. Are our decisions determined by a train of causes involved in the whole system of things, or are they truly indeterminate? I have heard the remark made that on this subject determinism is the only possible view from the outside and indeterminism the only possible view from the inside. However that may be, Mr. James elects what this observer called the view from the inside. To "our ordinary unsophisticated view," these are his words, "actualities seem to float in a wider sea of possibilities from out of which they are chosen." He postulates the truth of this appearance. "The great point," he says, "is that the possibilities are really *here*," that, "the issue is decided nowhere else than *here and now*." "That," he adds, "is what gives the palpitating reality to our moral life and makes it tingle, as Mr. Mallock says, with so strange and elaborate an excitement."

Thus he is committed to pluralism. He does not deny the possibility that monism is true, but he takes the view that is natural to our consciousness, and postulates it as a working hypothesis. According to this hypothesis, "the crudity of (our) experience remains an eternal element thereof." "Real possibilities, real indeterminations, real beginnings, real ends, real evil, real crises, catastrophes and escapes, a real God and a real moral life, *just as common sense conceives these things*," hold their ground in our world. (The emphasis is mine.)

We have seen that the work of Mr. James, even in the midst of philosophy, is that of a psychologist. But a psychologist of what order? Can we not further characterize his dealings with the mind? To understand his contribution to psychology and his psychological contribution to philosophy, we must note three broad facts. We must note in this psychologist (1) the doctor, (2) the artist, (3) what we might call, if it were not for the odor of cant that hangs about the word, the "brother"—that is, the fellow man, the sympathetic human being. Singularly enough, this last fact, which

might seem to be of purely personal concern, has in this remarkable case a connection with the peculiar quality of scientific work.

I

First, the doctor. Modern psychology in its first development paid no great attention to the body. Psychologists like Locke and Hume were wont to tell us at the outset that though our sensations came in by the gates of sense, their coming in and the gates by which they came did not for purely psychological purposes demand much further study. The sensations once there, these thinkers gave their attention to the relation of the sensations to ideas and to the workings of the reflective mind. Gradually there arose in English philosophy the theory of the laws of association, the laws, that is, by which one idea comes after another in our thinking, or by which two ideas merge in one. The laws of association, those of contiguity and similarity, are laws purely mental. The more ideas occur together, the more they tend to recur together; the more similar they are (roughly speaking), the more they tend to call each other up. This makes of the mind a little world which has its own laws and the explanations of which can be arrived at without turning much to any other world. This view comes, of course, to its greatest development in James and John Mill. The treatment of the senses and the body in general occupies but a few pages at the beginning of James Mill's two volumes on the analysis of the human mind. The rest is given to pure psychology. The climax of this preoccupation perhaps is seen in John Stuart Mill, who all his life was deeply interested in the mind without being in the least degree concerned about the body.

Meanwhile about the end of the first quarter of the nineteenth century another tendency made itself felt, another interest came into psychology and profoundly affected it. This was the interest of the doctor, whose approach to mental life was first of all through the physical life, who noted how the mental life reflected the physical and seemed to interact with it. The physiologist, Johannes Müller, the doctor Lotze with his medical psychology, Fechner, the doctor of medicine, Wundt, the doctor of medicine, and William James, the doctor of medicine, mark the stages of growth in the new tendency. In England the last great associationist, Professor Bain, is already beginning to give careful study to physiological fact. Herbert Spencer's two volumes on the "*Principles of Psychology*" are the work, like virtually everything Spencer wrote, of a mind dominated by physiological ideas.

Now it is characteristic of this view that the mind appears not as a sufficient world by itself, governed by laws peculiar to its own subject-matter, but appears as a part of the great comprehensive

world, whose forces either influence it or influence the body which is reflected in it, and whose laws thus apply to the whole. It was characteristic of the associational psychologists that they were only psychologists, and not philosophers in the sense of offering a cosmical theory. It was the *mental* cosmos that they were interested in explaining. But with those of whom I now speak it is all different. Lotze, Fechner, Wundt, Spencer, all offer a philosophy of the whole world and Mr. James concerns himself with cosmical problems. His interest in human consciousness shows in the way in which he treats those problems.

When we look into his work on the "Principles of Psychology" we soon note the difference wrought by what I may call the medical interest. You have from him not only a telling exposition of the state of theory on the functions of the brain, but you have a physiological interpretation of the association of ideas, a purely physiological interpretation of our so-called feeling of innervation, and the bold and new theory of the nature of the emotions, according to which they are nothing but the sensation of disturbance produced in the body. As regards special problems, then, no psychologist of our time has gone further in bodily explanation than Mr. James. Perhaps the most telling instance of this is his analysis of the spiritual or inmost self. He suggests that what we should call "the self of selves" "when carefully examined is found to consist mainly of the collection of . . . peculiar motions in the head or between the head and throat." If, he says, his own introspection is trustworthy, "it would follow that our entire feeling of spiritual activity, or what commonly passes by that name, is really a feeling of bodily activities whose exact nature is by most men overlooked."

There is another result of the medical interest. He brings into psychology at every possible point the results of the study of abnormal cases, hysteria, insanity, double personality, automatic writing, hypnotism, etc. Nothing could be more different than the world in which one finds oneself in James Mill's psychology and in Mr. James's. In the latter, two new vast elements have come into view, both from the doctor's field. The body is a constant presence and the abnormal is a source of light.

II

Second, the artist. We now come to perhaps the most influential factor. We know how strongly many minds have felt the need in representative government, of minority-representation, the representation of the party which, though defeated in an election, perhaps by a small majority, none the less comprises a great mass of the community, which accordingly has no voice in the government. Now

there is profoundly needed in philosophy, I will not say minority-representation, but rather a majority-representation, the representation in the ranks of the philosophers of the temperaments that are not philosophic. Plato calls the philosopher the spectator of all time and of all existence. This spectator undertakes to describe what he sees. But unfortunately his description may be colored and warped by the circumstance that he himself comes out of a narrow corner of the human world. It is one special kind of temperament, or a few kinds only, that are drawn to philosophy. The spectator is a biased partisan. He is a born lover of the intellectual machine, and has the impartiality of a lover. He is born to judge the senses and the passions with austerity. He is born to look a little askance or with some little air of patronage at esthetic temperaments. As a spectator of all things, he has too many blind spots in his eyes. Fancy Immanuel Kant giving the world a full and mellow theory of life, fair to all its elements. Kant was a man of conscience and benevolence, but a somewhat grimy-handed machinist, admirably devoted to his task, loving to watch the wheels go round. There is here really a great unconscious fraud. It is as though the only people tempted to write history were those who belonged to a certain faction of doctrinaires. So Mr. James's presence amongst philosophic writers is an almost unique fact in the history of their craft. There have been philosophers of esthetic instinct and esthetic cultivation, but I am not sure that there has been any other whose esthetic gift came into the heart of his thought and of his main achievement.

The term artist is somewhat cheap in such a context. We must mark with care the sense in which our author is to be so classed. In his "Principles of Psychology," there is a chapter entitled "The Mind-Stuff Theory." This chapter contains a deliberate examination of an idea that had always widely prevailed not only in our natural notions about the mind, but in scientific psychology; the notion that just as there are physical facts in our own bodies that are real and operative, though we know little of them, so there may be mental facts in our own minds that are real and operative, though we are only partly conscious of them. These have been called unconscious ideas, semi-conscious ideas, subconscious ideas and the like. This is the notion of a dark back-chamber of the mind in which much may be concealed—a back chamber curtained off from the familiar and illuminated apartments in front. These notions only do with the mind what we are accustomed to do with every other region of existence. They allow for factors potent but out of sight. This kind of psychology allows for the existence of memories, efforts, intentions, inferences, of which our consciousness is dimly or not at all aware.

To all this Professor James's chapter gives the *coup de grâce*.

He points out that by ideas and all such mental facts we mean facts of consciousness; that the realm of consciousness is the realm of which we are conscious, and that unconscious consciousness is an absurdity. He points out what may perhaps be expressed in this way: the realm of consciousness is that peculiar, that unique realm, utterly distinct in its nature from the realm of matter—it is that realm in which appearance and reality coincide. With one sweeping stroke he thus mows down the numberless theories that looked for dark corners and crevices in consciousness. He offers a long closely reasoned analysis of the various arguments offered for such a view and shows the inconclusiveness of each. Consciousness is then just what it is felt as being, since the being of a feeling is its being felt. This of course does not deny that another man has consciousness, though we are not conscious of it. His is just another field of consciousness like our own, just as vivid for itself as ours is. So there may be other fields of consciousness connected with our own body, as some theories suppose, and Mr. James believes, there are. But they are to us as other minds. They are like back-chambers well lighted up by their own lights, but with the doors locked. What Mr. James's principle denies is the existence of an unconscious mind or a subconscious mind, or any species of psychic reality in the dark.

I do not mean to say that Mr. James is literally the first to reach this insight in the subject, though quite possibly he was one of the first to attain it in its full sweep. After he had written the chapter he found something of the same thought in Professor Lipps. Certainly John Stuart Mill had the right instinct in the subject, though he does not offer any adequate argument. Descartes two hundred years before almost seems to have the root of the matter in him, for he tells us that the soul has one invariable attribute, the attribute of *cogitatio*, by which he clearly explains that he means what we mean by consciousness; and he goes on to say that this is the soul's whole nature. If the soul is to be, it must be conscious, thought Descartes. But if Descartes really had this divination he did not state it with sufficient point, he did not reason it out, and accordingly he did not impress it upon his followers or posterity. Mr. James is the first I know who possesses the complete insight by right of reasoning.

Now if this conclusion of Mr. James's is true, as I believe it to be, it at once gives the science of consciousness a task totally different from that of any other science. In any other science the great duty is not to be duped by appearances; the duty is to penetrate behind the looks of things into the secret recesses where the machinery may be discovered. In any other science the investigator detests nothing so much as the superficial. For our psychology, on the other hand, we must suddenly and painfully readjust all this scientific habit.

In the domain of mind we must recognize the sole reality in what appears. We must by a long process of training disabuse our thought of the notion that consciousness has any secret recesses or concealed machinery except the purely physical machinery of the brain. Our task must be to realize that the "peculiar effect" of any state of mind is exactly that scientific datum with which the psychologist has to deal.

It is here that the artist enters. The artist's special task is not that of the man of science, to penetrate into the component parts of things and show how these parts build and rebuild themselves into varied forms; nor is it to point out the component parts of processes and disengage causes and effects. The artist's task and gift is precisely to catch a unique fact; to catch a "peculiar effect"; to render a scene or a feeling in its distinction, its individuality. The artist does not despise the superficial, for beauty is a character of the surface of things presented towards us. Beauty is a thing of surfaces. Now the peculiarity of the general law that Professor James announces is this, that the mind is all aspect. It is all in a sense surface. To render any state or phase of it in its own distinctive aspect is to come at the end of the facts. To explain the cause of those facts we may have to go farther, into previous mental facts and into the brain, but the recognition of those facts, in all their delicacy as they appear, is the base and starting-point of all psychological thought. This recognition requires *the psychological imagination*, which is akin to the artistic imagination.

Nothing strikes us more than the frequency with which Mr. James takes what one may call the esthetic or quasi-esthetic view. I might call it emotional and sensuous perception. To minds of rationalist grain it is always a little odd and puzzling that he should keep telling how systems of philosophy feel, how they are haughty, remote, austere, like a temple; of their dryness, of their grandeur, of their beauty, of their neatness and cleanness, of their straight-laced appearance, of their deadness, toughness, tenderness, thickness, thinness, of every sort of picturable or appreciable quality. I think to the average reader who comes to Mr. James's works, this is simply the most striking trait of his style. As we know, before Mr. James taught philosophy he taught psychology and before that, he taught physiology. Prior to his teaching he received a medical education. But before all this he was a painter. Some few paintings exist which have been pronounced of great power and in which a bold free style appears. The qualities of our author's literary style have been so often discussed that I need not dwell upon them here. Its great characteristic is its force and this force is gained by "the perpetual presence of the concrete," by the use of

fact and figure taken from sense and emotion (which, by his theory, is sense), fact and figure that catch life in the act and make us perceive its very pulse. Watch the artist's perception at work in his "Principles of Psychology." That book is in one sense a miscellany of observations, theories, and criticisms. Hence many readers miss its unity of trend. The truth is that few books undertaking to deal with so vast and scattered a subject exhibit such a unity. It is apt to be the unique which he discovers and presses on our attention, that which can not be reduced to lower terms, can not be put together out of blocks or units, that which can not be gradually made by a sum in addition. The field of consciousness does not feel like a mosaic. I might offer this comment and leave the subject. That is the way of him who is called literary critic! Usually we have not read for a year or so the books he speaks of and do not know whether his remark is true. I wish to prove my point to the reader's satisfaction. For instance, near the outset our author refutes the notion that any quality of sensation is a compound. The taste of lemonade is not the taste of lemon plus the taste of sugar, but a new taste which is neither one nor the other. "Surely our feeling of scarlet is not a feeling of pink with a lot more pink added. It is something other than pink." "Similarly with our sensation of an electric arc-light; it does not contain that of many smoky tallow candles in itself. For sensation presents itself as an indivisible unity and it is quite impossible to read any clear meaning into the notion that they are masses of units combined." More than this, he denies that a whole state of consciousness is in any sense composed of parts. If I see two chairs side by side my vision is not a vision of one chair plus the vision of another, but it is a new and indivisible fact, the vision of two chairs. The chairs are two, but the sight of them is not on that account a combination of two parts, because its whole nature depends on its being one. So when we hear thunder we do not have first a consciousness of silence and then a consciousness of pure thunder. What we have in the second place is that unique consciousness, "thunder-breaking-upon-silence-and-contrasting-with-it." So when we come to the memorable chapter on the stream of thought. Revolted by James Mill's discussion of the content of consciousness as though it were built out of little pieces, Mr. James delights in pointing out phase after phase which is not built at all. Instance his discussion of three distinct and irreducible states of feeling produced in us by the words, "Wait!" "Hark!" "Look!" So again with his famous "feeling of 'and,'" "feeling of 'if,'" "feeling of 'but.'" The point about all these is that they are real and important, but distinct and unanalyzable. What is the difference between imagining a thing and perceiving it with open eyes?

It has sometimes been described as a difference in intensity, a matter of degree, but some of our sensations are faint and some images in the mind are extremely intense. The difference, he says, is not a difference of quantity. Sensation has a peculiar *tang*—this is his word—and what we imagine has another peculiar *tang*. That is the end of the matter. So with the chapter on conception. The great long-raging controversy between nominalism and conceptualism he resolves in a remarkable manner. Every thought, even abstract thoughts, are constituted in the main of fragments of concrete imagery. But what that imagery is to stand for is determined by an entirely peculiar element of the thought, what he calls the sense of our meaning. This sense of our meaning is for each meaning unique. The presence of this special feeling leads, he says, to a perfectly satisfactory decision of the nominalistic and conceptualistic controversy so far as it touches psychology. The feeling is “an altogether special bit of consciousness *ad hoc*.”

Perhaps the two most striking instances are the perception of time and the perception of space. The chief thesis of the chapter on time is that there has been a great mistake about time; that we do not in reality experience first one moment, then another moment *plus* a possible memory of the first, then a third *plus* a possible memory of the first two. What we experience is always not a moment, but more than that, a duration, a passage of time, a *before* and an *after* presented together. According to the first theory, he tells us, we should never experience time at all, being always confined to one moment of it and cut off from the rest. But we do experience time. We experience its very flight. We have a sense of what we call the present, but what is really a sense of that which is going *and* that which is coming. We feel the two together in one indivisible consciousness. Here again you see something undecomposable, a vision, a glimpse, an effect, indescribable to one who has not had it.

Turn now to the chapter on the perception of space. Ever since Bishop Berkeley, and even earlier, there had been a tendency to explain our sense of extension as a combination. Hume spoke as though our field of vision were made up of smallest visible points, tiny spots of color, *minima visibilia*, set side by side. Another school had regarded our sense of the dimensions of space as due to the combination of muscular and visual feelings, a fusion which by what was called mental chemistry became so intimate that our consciousness did not recognize the ingredients entering into it. Mr. James will have none of this. His conception of consciousness forbids there being elements present of which we are not conscious. Moreover, he holds that the essence of extension for us is a sense of magnitude, a feeling of “crude extensity.” Here we have one more case of the

unique and the irreducible. So again as regards the third dimension. Distance straight out from the eye to an object had been deemed an inference. Plainly the eye can not see the length of a line extending straight from itself to what it looks at. But the length of that line is the distance to the object. It had been reasoned, of course, that we could have no other idea of such distance than the thought of the action of going to the object and the amount of activity it would take, which thought is suggested to us in each case by the proportion of the object as seen to nearer things, etc. But Mr. James asserts, on the contrary, that we have a direct and irreducible sense of depth before the eye. Indeed, the original sense of crude extensity was not of a flat extensity, but of volume, involving depth. Could there be a more perfect illustration of that interest and belief in "a special bit of consciousness *ad hoc*," in the unique, the uncompounded, that which is not reducible to a form of something else?

Again in the chapter on instinct he declines to admit with the associationists that most of the tendencies we find in ourselves and call instincts are formed in us by early experience. On the contrary, he furnishes a list of some forty special instincts each one of which he considers inherited for a purpose, a special bit of faculty *ad hoc*.

Mr. James's position as regards free-will amounts to this: That the deterministic analysis omits the essential fact, which is spontaneity. This spontaneity is a category incapable of analysis into a sensation of mental causes and effects. In nearly all his philosophic reasoning we are struck by his sense of the inadequacy of philosophic systems to account for the strange and the new, the singular and the original, in our private experience. Moreover, he is preoccupied with that which no psychology can as yet profess to analyze, with personal temperament, with the indescribable individual and his strangely different ways of taking life and the philosophies thereof. In questions of psychic research he lays stress, not so much on punctiliously gathered evidence as on the conversion of important minds. If there is anything which makes the rationalistic reader uncomfortable in his pages it is his mingling of philosophic questions with the psychology of temperament. In the midst of an argument against some philosophy, he will remark that there are temperaments that would never accept it, so it will never be a universal philosophy. "That is not what I am thinking about," the reader is tempted to put in; "I only want to know whether it is true." But Mr. James has a way of viewing truth *sub specie temperamenti*, if the reader will pardon the use of the classic word in the modern sense. Of course this is reasonable from his own standpoint. "The philosophy," he says, "which is so important in each of us is not a technical matter; it is our more or less dumb sense of

what life honestly and deeply means. It is only partly got from books; it is our individual way of just seeing and feeling the total push and pressure of the cosmos." And, as we have seen, the ultimate test of truth or plausibility is "the sentiment of rationality," which may vary from mind to mind and which is subject to correction by experience alone.

Now is all this predilection for that which can not be taken apart a confession of scientific failure? All science is analysis. It is the knowledge of things in their composition or of processes in their composition. It is the knowledge of the structure and machinery of whatever it investigates. It had the original purpose of enabling us to master that machinery and use it if we required. Is the tendency of Mr. James's psychology in this respect to be taken as a revolt against analysis? Is it to be set in our minds side by side with the revolt of Wordsworth and of Carlyle and many another artist against scientific dissection—scientific dissection which, in Wordsworth's words, "viewing all things unremittingly in disconnection dull and spiritless, breaks down all grandeur." Is it the result of the irruption here of the genius of art into science that it simply wars against the very law of science? No, that would be a crude misconception. We have not here artistic genius come to undo science, but come to do a peculiar work therein that called for such peculiar aid. There is not here a want of analytic power. The chapter on emotion, the chapter on self, the chapter on mind-stuff, the address on cognition, masterpieces of analysis, make such a fancy look grotesque. But psychology had been guilty of an error and an omission. The science had dealt with the things of mind as though they were the things of matter. The science had not fully marked the fugitive delicacy and unity of its subject. In Mr. James's work psychology recovered its balance. And the work itself is done by dint of fine observation and strenuous scientific reason. It is the work of a thinker as well as of a perceiver, of an investigator as well as an artist.

None the less, though his production does not stand for the impatience of irresponsible art towards science, it does indeed remind us of what was true in the belief of Wordsworth and Carlyle. It reminds us that in psychology science has reached the delicate task of dealing with the vital experiences for which the poets care. Science keeps tearing away veil after veil of appearance in the effort to know the true structure and machinery of things. Color, taste, sound, these and much else it tears away and sends to the limbo of illusion, "mere subjective appearance." In the eagerness of its quest, science did not always ask itself what its duty was in regard to these illusions themselves. Psychology, its late offspring, falls heir to this

limbo. When science thus at length betakes itself to the limbo it comes face to face with poetry, which was waiting for it there.

But to return to our own path. Each of these unique things that Mr. James singles out for us, these feelings or moods or temperaments, these special bits of something *ad hoc*, is alive with interest in itself; but if we turn from each to think of a greater whole—of the world, for instance—one consequence leaps to view. That world can not be arranged and connected in an all-explaining system as it could be if it were wholly built up out of smaller units. The more intense and new is the thinker's sense of each special fact, the less is he ready or able to subordinate this fact and all the rest to a total system. His world remains in the end a plurality, out of homage, so to speak, to the interest and originality of the individuals that compose it. A painter of men or of landscapes, if he is a good one, must be most impressed with the utter difference of scenes and faces, the teeming ungoverned variety of things. It will be for him unspeakably futile to try to range and rank and pack them all in one all-mastering plan.

It is not, therefore, a spontaneous impulse with the artist to become a painter of all time and of all existence. He is too much absorbed in particular moments and things. You must take your choice between seeing things near and vividly and seeing them far away, from a mountain top, spread out before you like a map. If the latter is your choice you will command a great range of country, but you will find its shapes and colors dimmed by distance. Of course, if you do look down from far above you may see a world of conflict and confusion. You may not find "monism." But your staying where you are does show that you want to see the whole in one survey. It does show that you have the monistic interest. You have taken your choice. The retina, whether it be of the eye or of the mind, can command only a certain breadth of field at once. It can take its field near and vivid or far and faint. If you wish to be a spectator of all time and of all existence, you must look from a high point of view, indeed, and the little hills will be flattened and the parti-colored world will fade into one soft hue. Indeed, what you see will probably be much like a certain old view of Mount Washington on paper, which is just at that strange point where a picture turns into a map, and you can not really say which it is.

Now an unmistakable quality of Mr. James's work is its nearness, the nearness of his peering eye. He remarks genially in one chapter of his psychology in effect, "As I write, this special topic seems to me the most important in the subject, and when I come to another chapter that will seem so too." While one keeps in such consummate nearness to life, one must indeed sacrifice perspective and Mr. James

has in a measure sacrificed it. Unwearied interest in the fresh and special things of life as they come is indeed more notable than any feeling that we can command the whole. Hence the deliberate absence of system in his work. Systematic philosophies and psychologies have one sad failing. They are so intent on the symmetry of their system that some departments of the subject are filled in in a thin and perfunctory manner and other parts forced a little out of shape. In a word, their failing is their artificiality, their want of genuineness. The defect of artificiality is its want of the vivid freshness of life. Such systems give us, he feels, a lean and famished theory of things. As we read his pages, now and again our eye falls on some sketch of keen and fresh experiences of men. None of the strong cravings, impulses, conversions, warm relentings, "the deep loves, fears and indignations" pass by him unnoticed. In comparison with what is deep, real, and fresh, he is quite content to let the artificial symmetry of system go. In the preface to his "Principles of Psychology" he says: "The reader will in vain seek for any closed system in the book. It is mainly a mass of descriptive details, running out into the queries which only a metaphysician alive to the weight of her task can hope successfully to deal with. That will perhaps be centuries hence; and meanwhile the best mark of health that a science can show is this unfinished-seeming front." All of Mr. James's work presents an unfinished-seeming front and runs out into queries. Only thus, he feels, can it be genuine. The best achievements of life present an unfinished-seeming front. This "pluralistic" universe that we live in, according to him, presents an unfinished-seeming front. The reader of the riddle of existence will in vain seek for any closed system.

There is nothing more pronounced in his work than this love of the genuine and fresh. The least pretence is out of the question. He casts in his lot with what seems to so many *prim formalists* a somewhat disheveled and wild-eyed philosophy, simply in the interest of that which is alive.

Perhaps some of you will have been reminded in this of the difference between two schools in literature. The one looks to the whole composition. It insists on shapeliness of structure, on perfection of the whole. It would conscientiously subordinate every part to the whole and consistently prune away all extravagance, digression, and disproportion. The other school looks not to the whole, but to the passage, the moment. It is not bent on structure and contour, it is bent on richness. It is not offended by the wayward luxuriance of the part. With it the part is by no means ready to clip and dock itself in deference to the whole. The part says, I am interesting enough in myself, I make for the moment a very good whole. Now

we have no doubt with which of these schools Mr. James's work ranges itself. They are of course the classic and the romantic. Our author, whose choice in this matter of form and order is so clear—is it possible that in all things he takes his stand with the spirit of the romantic movement? If so it would indeed light up our subject. The influence of the romantic movement upon history has been much discussed. Its influence upon science has not been sufficiently seen. Its influence upon psychology, which as we have seen lies on one side so near to art, must not be neglected.

The lines of distinctions that have been drawn between the classic and the romantic interest in literature are familiar. Where the classic taste cares for friendly and familiar scenes, the romantic goes in quest of things strange and new. Where the classic interest asks clear outline, definite lines, the romantic is not repelled by mystery. Where the classic interest expresses the placid and lovely, the romantic exults in immensity and intensity, in one word, the sublime. Where the classic is objective, like that which all may see and principles common to all, the romantic delights in difference from others and is fascinated by individuality. Where the classic would have order, the romantic chafes at restraint and makes a break for liberty. It will be seen that the romantic choice makes rather for color than for system, rather for vividness in the detail than for sure control of the whole. It will be seen that the classic choice is for security, for equanimity, while the romantic choice is for zest and exaltation. Adventure, hope of a far higher thing—these belong to the romantic temper. The one needs certainty, an unperturbed tenor of life. The other enjoys, in a phrase of Mr. James's, "a certain amount of uncertainty" in its world, some chance of change, gates open to new realms, some touch of fateful romance. It finds in these things those "high and gusty relishes of life," that strenuous dilation of spirit, in which human nature rises to its full stature.

This temper enters into the heart of Mr. James's philosophy of pragmatism and his philosophy at large. The belief in liberty, the interest in things genuine, fresh, and wilful—these have something to do with that working hypothesis of spontaneity which figures in his prevailing thought. That thought might be described on one of its sides as a profound application of certain Darwinian ideas. The environment does not work upon and mould a plastic organism, but an organism, with its own chance-born tricks and originalities, runs its hazards and tries its luck against a formidable environment. Experience does not make organisms or faculties or conceptions, but it tests and winnows them when they are made. It is instructive to trace this and its kindred thoughts through his writings. The stress

is on spontaneous activity and risk. Our impulses do not come securely guaranteed. The last chapter of his "Principles of Psychology," and his essay upon "Great Men" are obvious instances. In "The Moral Philosopher and The Moral Life" the need is urged of ethical experiment, and of putting into practise "brain-born" sentiments of fitness to be surely tested by experience. In the advocacy of voluntary faith, he bids all human thought, as we have seen, to view its "most assured conclusions" as "hypotheses liable to modification in the course of future experience." "If religious hypotheses about the universe be in order at all, then the active faiths of individuals in them freely expressing themselves in life, are the experimental tests by which they are verified, and the only means by which their truth or falsehood can be wrought out." In ethical connections, will is distinguished as "the essential root of human personality," of a value wholly incommensurate with that of "the greatest intellectual power" and "the most elaborate education." And it is will, not as manifested in a bare consistency or a hollow legality of action, but conceived as deep spontaneous impulse, to which a central place is thus accorded. Spontaneity in its higher forms is in effect taken out of the realm of lawful happening within which Darwin kept it, carried up into metaphysics, and regarded as an ultimate category. Mr. James's psychological treatise is often lightly accused of inconsistency. Why such a zealous and thorough application of mechanical law in the chapters on cerebral physiology, habit, association, instinct, emotion, etc., and such an arbitrary departure from it elsewhere? It is an undiscerning criticism. The departure is in no sense capricious. It takes place only as regards will—strictly speaking, as regards that voluntary attention which is in the author's view the last stronghold of spontaneity, which in its turn is the highest category, in a sense, of the author's thinking. In his philosophical pluralism, too, his essential demand is that the world of the will, the world of moral realities and hence of moral contingencies, the world of free individuals, shall not be given over as an illusion. In the matter of "free will," of the unfettered "will to believe," and of the will's prerogative of "steering a nervous system grown too complex to regulate itself," the emphasis is the same; it is on a spontaneous energy advancing on its environment, and risking a course of action which fateful experience alone can judge.

III

Third, the sympathetic human being. When science undertakes the thing called consciousness and the thing called human nature, science has a novel task and needs new powers. The man of science will hardly effect much unless he has, and probably unless he naturally

possesses, a keen interest in other people's minds. That he may find his way in those minds he needs something else, sympathetic imagination. These traits abound and overflow in our author's work. He is not a social thinker in the sense of thinking about large masses of humanity. He takes humanity in the individual. That is, he does not look down on men from a lofty eminence, but comes near—comes face to face with a man. That this is proved by his description of consciousness is too obvious to be elaborated. It is proved in countless other ways. Consider the range of his references to men and books. So lightly, so casually, does Mr. James carry his acquaintance with other men's books that few have noted its surprising range. Is he not the most learned of psychologists? And consider the extent, perhaps unexampled, to which he *fraternizes* in philosophy. Consider the range of his reference to literature, the extraordinarily serious attention he gives to obscure authors, and young authors, and authors out of repute, and provincial authors, and uneducated authors, and eccentric authors, and insane authors. To verify what I say, consult "The Varieties of Religious Experience" and the "Principles of Psychology." In this, English academic critics have found a lack of perspective. Perspective is not what he is aiming to supply. Perspective is often a quality of authors who care little for the thing at the end of their avenues and vistas. If a man's interest leaps up at the approach of a human being, it is probably true that the gradations of his interest or his valuation will not remain ideally true. The sense of proportion is a thing of value, but so is a living instinctive interest in all sorts and conditions of mentality. Mr. James appears to believe in cooperation in philosophy. He will take at once what any youngest fledgling from the graduate school suggests and build it, if valuable, into the foundation of his thought. The last is often first with him. He is careless (perhaps no author has ever been *quite* so careless) of his claims to prior discovery. He is an incarnation of the ideal of the democracy of thought.

It is clear how this fraternal interest and nearness to others coalesce with that interest I mentioned at starting, in the way life naturally feels to us. Philosophy has always been prone to make light of the aspect of things presented towards ourselves. "Come away, come away" it has said to us, "from the cheating outer veils of reality. Advance into the interior of things. Rise above the credulity of your eyes and ears. Rise equally above the deceitfulness of your feelings." A favorite summons of philosophy has been to "transcend." We all have a picture of the philosopher as an elevated and superior being, self-controlled and inwardly put in order, with an absent look in his eyes because he sees to the heart of things and has regulated his own heart accordingly. We feel towards him as youths

are prone to feel towards an older man. He knows more, no doubt, but for purposes of life and things worth doing he is from their point of view not of much use. Contrast with this the perennially comrade-like, spontaneous and youthful quality of Mr. James's writing.

His instinct seems to be that wisdom is in cooperation, and he seems to shrink from the assumption of judicial poise in himself and at any one moment almost as from insolence. In consequence his words are exposed to misconstruction. Called to comment on some new idea, or some report of the occult, he does not draw himself up inwardly to an attitude of revised and sublimated wisdom, but speaks heartily his impression, in the genial faith that truth is made of many things, that it is not made up yet, that there is more to say, other moments and other people to say it, and time to be trusted for the verdict. He puts his impression into the common stock. It is the very instinct of humility and fraternity.

It is clear too how this allies itself with the mind of the doctor. It is not only now that he looks on man as mind and body together, but as him to whom psychology must intelligently minister.

The trait allies itself, too, with his shrinking from hard and rounded philosophic systems. Descartes sat down to empty his mind of all beliefs, and refurnish it with a new philosophy. The first act of the systematic philosopher usually toward existing theories is to sweep all the chessmen off the board and set them out anew for his own superior game. This is the real "egocentric predicament" in philosophy. The unfinished-seeming front of our author's thought is a sign not merely of his love of the particular and the vivid, as I said, but of his unaffected humanity.

Finally, this thinker's position in philosophy is consonant with his purpose and spirit. There are builders of systems and there are contributors. Systematic philosophies, if we do but understand them, are dreaming on things to come. System is indeed in one sense the aim of philosophy. But that aim is at present imperfectly attainable. System, as now visibly attained, is artificial. Perhaps Mr. James does not sufficiently keep that vision of order. But American philosophy will be fortunate if it ever has an equal contributor to set beside him. I have endeavored to keep clear of the weary entanglements of controversy. There are essential subjects on which I do not share his conclusions as he states them. But he has contributed not only invaluable conclusions. He has given what is more fundamental. He has contributed a new direction and a new impulse to the life of two sciences.

D. S. MILLER.

COLUMBIA UNIVERSITY.

REVIEWS AND ABSTRACTS OF LITERATURE

The Metaphysics of a Naturalist: Philosophical and Psychological Fragments. By the late C. L. HERRICK. Reprinted from the Bulletin of the Scientific Laboratories of Dennison University. Vol. XV. Granville, Ohio, 1910. Pp. 99.

The aim of the editors of this little book was to present to the public in compendious form the metaphysical views of the eminent geologist and neurologist, the late Clarence Luther Herrick, of Dennison University. To this end they have gathered together excerpts bearing on leading topics, chiefly from his unpublished writings. The manner of making the book rendered unavoidable, we are told, its somewhat repetitious and unsystematic character.

Like so many other naturalists who pursue metaphysics as an avocation, Dr. Herrick found in energy the reality and substance of the universe. He called this view "dynamic monism." The primary experience is that of change, and activity alone exists. Out of infinite, unlimited energy or pure spontaneity arise, in a way we can not guess, stresses or resistances, that is, forces. Only so far as limited or finite, as resisting other forces, do we know energy. So-called things are merely the appearance to consciousness of relatively stable forms of activity. The organism is a highly differentiated and individualized form of energy, a moving equilibrium, whose "career" consists of alternate disturbance and regaining of equipoise. In any such stream of energy two sides can be distinguished—an "intrinsic" and an "extrinsic" or "lateral," an "inner equilibrium" and a "reaction phase." Consciousness is an attendant of the former in the nervous system. Not that consciousness is isolated from the rest of the universe; for the two phases are always connected; without change instigated from without and integrated in the nervous system, it does not exist.

From the more detailed accounts of the "energetic" character of reality the writer of this review learns of the substance of the universe little more than from the meager outline given above. Here, as usual, there is only the one idea—energy—persistently reiterated. Here is another instance of a scientist who has learned to use the concept of substance and misapplies it to another concept, energy! Instead of getting at the reality of which energy is itself a description, we are given a description of a description. Energy is a blind concept unless it means just those very definite and real *experiences* of which it is a valid, though partial, description. Scientific men can be of little *direct* service as metaphysicians until they have perceived the fatuity of calling anything real except the sounds, pressures, smells, tastes, sights, thoughts, and feelings, upon which all else is mere commentary and back of which there is nothing.

How little direct metaphysical illumination is to be derived from views of this kind is illustrated by the discussion of the relation between mind and body—the most significant part of the book. Mind is not identical

with the matter of the brain, we are told. Matter itself is only the experiential aspect of equilibrated energy. Consciousness is not a stuff, and we should no more seek to correlate it with particular cells or areas of the brain than to hunt for material "bearers" of heredity, identical through the generations. The psychophysical relation can be conceived only in terms of dynamic "modes of change" in the brain. Consciousness, like heredity, is a particular "form" of energy. It is not identical with energy; for most of the activities of the organism are unconscious. Consciousness is not even a *kind* of energy—"the forces whose intermittent stream feeds the psychical lose nothing in their passage through the mind; the stream is undiminished, but there has been a transformation, the peculiar form of which has been the essential psychical content. The mind may be compared to a registration apparatus which registers by strokes on a dial the passage of a certain amount of fluid flowing through the chamber." Although not identical, there is no reason to think of energy and consciousness as so disparate that they can not be united, as we actually find them, in a single organic system.

Such a view is, of course, a great advance over the many sorts of materialism, and Dr. Herrick states it with much originality and out of the fullness of his knowledge of brain-physiology. But surely the work of the metaphysician has just begun. Mind a "form of energy"—but energy itself?

Dr. Herrick's "summation-irradiation" theory of pleasure and pain calls for notice. It is, in general, sensationalistic. There is no specific organ of feeling. The feeling state consists of diffused sensations caused by the irradiation of stimuli. When discharge is relatively easy the feeling state is pleasurable; when obstructed, painful.

Besides the topics already considered, and minor discussions of other matters, there is an interesting and piquant essay on immortality and a more conventional one on the problem of evil. The former contains good criticisms of the Ingersoll lectures of Royce and James. Dr. Herrick's own view seems to be that since the individual mind is conditioned by special modes of brain activity, personal survival is improbable, and yet, in the words of Paulsen, "the temporal life is a phenomenal form of a life which is eternal as such." The outcome of the discussion of evil is that the supposed ills of existence—pain, failure, and sin—being incentives to the correction of the disparity between the ideal and the actual selves, are really indispensable conditions of progress, especially when seen in relation to the whole. No one with a more than second-hand knowledge of the subtler aspects of sin and failure is likely to agree with Dr. Herrick in his rather naïve treatment of these matters, I suppose.

It is to be hoped that the editors will fulfill their intention of publishing more of Dr. Herrick's manuscript. For this much at least is surely what they claim for it—a suggestive contribution to the philosophical reflections of men of science.

DEWITT H. PARKER.

UNIVERSITY OF MICHIGAN.

Studies in Mystical Religion. RUFUS M. JONES. London: Macmillan and Company, Limited. 1909. Pp. xxxviii + 518.

This is the first of a projected series of volumes, by several writers, on the history and significance of Quakerism. The present volume is primarily historical. It deals only with the antecedents of Quakerism, with the purpose of showing that, from primitive Christianity and the impulse of Greek mysticism, a continuous succession of individuals and groups has experienced and taught direct divine intercourse or "inner light." Boehme is postponed for a separate treatment in a subsequent volume, and the Spanish and other mystics who do not belong in the direct lineage of the Quakers are unmentioned.

Within its chosen field the work has several peculiar merits. The most striking, perhaps, is its full treatment of obscure individuals or slightly organized movements, generally dissenting and persecuted, that kept the fire of mysticism burning. The Brethren of the Free Spirit, the Friends of God, the Brethren of the Common Life, the Family of Love, the Seekers, the Ranters—these, to mention only a part, are shown, by a detailed search of source material that is often rare, to have sought for spiritual emancipation, and generally for the simple, social virtues.

Another characteristic excellence of the book is that, without omitting adequate exposition of the successive theologies, it puts religious life and practise well into the foreground. With sympathy, discrimination, and a lively, flowing style, Professor Jones makes vivid the positive, even modern aspirations of men and sects that were in many cases repulsively one-sided or fanatical, at least to the non-mystical mind. Besides attaining its original purpose, the book becomes, as a consequence, a rich collection of primary data for the psychology of mysticism.

In an introductory essay on "The Nature and Value of First-Hand Experience in Religion" the author permits us to form an opinion of his own psychological point of view. Unlike most apologists for this type of religion, he gives a definition of mysticism that makes possible a sharply defined psychological analysis of the phenomena that it offers as its evidence. Mysticism is "the type of religion which puts the emphasis on immediate awareness of relation with God, on direct and intimate consciousness of the Divine Presence." This is an uncommonly good definition. For in spite of the reaction of the mystics from conventional dogmatism toward feeling, and in spite of the tendency, so emphasized by psychologists, toward the pathological, neither of these really distinguishes the mystic either religiously or psychologically. What he is always after is immediacy, not of undifferentiated feeling, but of knowledge. Unmediated knowledge is his goal, or at least the essential step to it. This central position of the mystics the author defends, though without slurring over, much less accepting, the crude psychology in which the movement abounds. He frankly recognizes the nearness of developed mysticism to pathological conditions; he sees that the content of the mystical revelation is historically conditioned in every case, and that auto-suggestion is in large degree the method of the mystical mind. Yet he

maintains that there is a core of reality in the mystic's claim to immediate awareness. When we examine this awareness closely, however, we discover that the movement of the mystical mind is toward an "undifferentiated consciousness" which Coleridge declared to be neither feeling nor knowledge. Here the secret is out: The mystic is one who *interprets* this experience as immediacy to other being. Interpretation is of the essence of mysticism, and consequently its peculiar claim is vacated.

It is interesting to note that apologists of mysticism who have assimilated much modern psychology are commonly forced into a dual position, either half of which is used as occasion demands. Thus Jones, like Inge and James, defends immediacy, yet discriminates valid experiences from pathological excesses by the moral fruitage of each. Jones asserts the existence of a peculiar mystical experience, but he defends it by claiming that there is a mystical element in conscience, in genuine prayer, and in faith,—that is, that the experience is not peculiar, after all. Like many writers who know less psychology than himself, Professor Jones goes to this science for support for mysticism, but unfortunately seeks help in dubious corners where most psychologists find only pseudo-scientific assertions. To class a religious experience with telepathy, for example, is scarcely an effective way of recommending it to reasonably cautious psychologists. Incidentally, too, it may be remarked that the stigmata of Louise Lateau and of St. Francis are explained more readily as self-inflicted wounds of a hysteric than as organic effects of suggestion. Finally, like Inge, Jones discounts the classical *via negativa* of the mystics, though this is surely the direct road to the undifferentiatedness, miscalled wholeness, of the mystical state. Lest all this should seem to be merely negative criticism, however, let me add that I am in entire agreement with his emphasis upon first-hand experience in religion. Where he appears to make moral fruitage a consequence and a test of this experience, however, I should be inclined to look for the experience itself.

GEORGE A. COE.

UNION THEOLOGICAL SEMINARY.

L'Evolution de la Mémoire. HENRI PIÉRON. Paris: Ernest Flammarion. 1910. Pp. 360.

That genetic psychology is not to be lost in the scramble for isolated facts of animal behavior is evidenced by the appearance of this book from the hand of Henri Piéron. The plan of the book is in harmony with the recently expressed hypothesis of Professor Burnham that there has been not only an evolution of mental life in general, but that every sort of mental experience has had its own particular evolutionary history. The author accepts Loeb's definition that "the word 'memory' represents any after effect of external circumstances." He includes in the same category such widely different processes as the retention of the artist's impress upon the plastic clay and the evocation in the mind of a previously perceived sensation. "Les exemples que nous avons cités, aux deux extrémités de la série des phénomènes, ont incontestablement un caractère

commun: ils manifestent également une influence persistante du passé sur l'état présent, un effet consécutif d'événements disparus sur les phénomènes actuels; et la définition générale de la mémoire, seule adéquate pour toutes les dénominations courantes, ne devra impliquer que ce caractère."

The forty pages of introduction are concerned with a justification of this point of view. The facts of persistence are objective facts and are discoverable by the same sort of objective method as the facts of the other natural sciences. In pursuit of this thesis a physiochemical explanation of the phenomena of persistence is set forth and the author attempts to show that the logarithmic expression of certain of the results of the Ebbinghaus experiments is the same as the logarithmic expression of the law of autocatalysis in chemistry.

The text proper is divided into three books dealing respectively with "Les persistances rythmiques," "La mémoire animale," and "La mémoire humaine." The three chapters of the first book set forth the vegetable rhythms, the animal rhythms, and the organic rhythms of the superior animals as they are brought about by the changes in the environment. The author rejects the theory that these rhythms are due to heredity and thinks to show that they are of individual acquisition. "The hereditary persistence is far from the rule . . . while the facts of individual acquisition, the examples of memory, are extremely clear, extremely numerous, having a profound and remarkable identity from the top to the bottom of the scale of beings. . . . Between the elementary form of rhythm and the superior form of the image many intermediaries find place which bind in a continuous fashion the extreme terms."

There is gathered together in the second book all of the experimental work in animal behavior that bears upon the problem of the persistence of past states upon the present reactions of the organism. The author successively treats such questions as the methods of research, the experimental study of the memory by the phenomena of adaptation, the acquisition of habits, the experimental study of sensorial memory, and the sensorial memory in the phenomena of orientation. In each field the data are given in order from the lower to the higher species of animals. There is an evident desire to substantiate the evolutionary thesis and to show an essential similarity among the most diverse facts. The author speaks of "the profound identity of the mnemonic phenomena in man and diverse species of animals" and holds that "the similarity of the processes of the acquisition of habits in man and animal may therefore be interpreted as revealing not only the same organic processes, but also the same mental processes." Cole's contention regarding visual images is accepted and full credence is given the recent work in imitation. The author, however, is not free with the facts, and, being an experimentalist himself, maintains the experimenter's caution in all his interpretation.

The same sanity of method characterizes the treatment of the human memory in the third book. The steps of memory, its variation, and its utilization are each treated in turn, and always with a careful regard for

the experimental facts. The author rightly insists that it is practically impossible to furnish verifiable data of the recapitulation theory and that at present the facts of ontogenesis must be studied as interesting in themselves. Finally, memory is not to be considered the goal of intelligence, but the tendency of actual past states to persist gives way to the schematization of language, a state in which the mnemonic acquisitions become useless because the past finds itself completely synthesized in the present. Individual memory becomes further useless as the acquisitions of one generation are handed on to the next in the form of tradition.

In summary two good things should be said about the book. First, it brings together a large number of widely scattered facts under a single rubric, and secondly, by so doing it suggests a number of problems for experimental solution.

M. E. HAGGERTY.

UNIVERSITY OF INDIANA.

JOURNALS AND NEW BOOKS

ARCHIV FÜR GESCHICHTE DER PHILOSOPHIE. Band XVI., Heft 4. July, 1910. *Die Rechtsphilosophie der Epicureer*, II. (pp. 433-447): R. PHILIPPSON. - Epicurus rather sought to explain how laws may be understood, and so obeyed in tranquillity, than to design a rational constitution for a state, for his philosophy had no room, and no need for a state. *A Recent View of Matter and Form in Aristotle* (pp. 447-471): I. HUSIK. - Apparent annihilation for Neumark's theory that Aristotle in his physics adopts a theory opposed to that in his metaphysics as to the cause of motion. *La doctrine stoïcienne du monde, du destin et de la providence d'après Chrysippe* (pp. 472-511): G. L. DUPRAT. - Freedom meant to Chrysippus action altogether predetermined, but of which the contrary was possible, and to which the individual spontaneously assented. Assent meant not an act of deliberate choice, necessarily, but just as well instinctive response. Leibnitz followed closely the stoic thought in these matters. *Platonismus* (pp. 512-517): W. M. FRANKL. - *Platons Ideen als Einheiten* (pp. 518-531): K. B. R. AARS. - Plato got no further than insisting that the oneness of the many in the genus must be actual; as to the nature of the existence of the ideas he really has nothing to say; they are for him mere abstractions. *Die Kausalitäts-Apriorität in Schopenhauers Schrift über den Satz vom zureichenden Grunde* (pp. 532-536): S. HAMBURGER. - *Die 'Αποφαισεις des Simon Magus. Nachtrag* (pp. 537-548): A. REDLICH. - Mythological analogies with the Pythagorean speculations of the Gnostics. *Jahresbericht. Descartes bis Kant* (pp. 551-554): K. JUNGSMANN. *Zur Geschichte der Japanischen Philosophie* (pp. 555-559): M. FUNKE. - We are introduced briefly to the principles ri, ki, in, yo, do, etc. *Die neuesten Erscheinungen. Historische Abhandlungen. Eingegangene Bücher.*

THE JOURNAL OF ABNORMAL PSYCHOLOGY. June-July, 1910. *The Relative Value of the Affective and the Intellectual Processes in the Genesis of the Psychosis Called Traumatic Neurasthenia* (pp. 47-56): TOM A. WILLIAMS.—The diagnosis in neurasthenia, constitutional or acquired psychasthenia, general paralysis, the dementing psychosis of adolescence, and the maniacal phase of the cyclothymic individual "is determined by the fact that only a few of the phenomena, and those unessential, are influenced by the mechanism of suggestion, which we have found to be the essential and indeed sole determinant of the psychosis known as traumatic neurasthenia." *The Anxiety Neuroses* (pp. 56-68): A. A. BRILL.—An interesting clinical case in which Freud's method was successfully employed and his hypothesis of dreams and emotion fortified. *The Nature and Cause of the Galvanic Phenomenon* (pp. 69-74): BORIS SIDIS.—An advance report of a series of experiments on frogs and rabbits proving "incontestably that the galvanic phenomenon is due to an electromotive force which is muscular in origin." They refute Tarchonov and Féré. *Abstracts*: C. v. Monakow, *New Points of View in the Question of Cerebral Localization*: E. W. TAYLOR. W. v. Bechterew, *Hallucinatory Memories*: CHARLES RICKSHER. Milt Oeconomakis, *The Hysteria Problem*: CHARLES RICKSHER. *Reviews*: Wm. McDougall, *An Introduction to Social Psychology*: HENRY RUTGERS MARSHALL. *Jahrbuch für Psycho-Analytische und für Psycho-Pathologische Forschungen*: ERNEST JONES. *Proceedings of the American Psychopathological Association*.

Bosner, Frederick G. *The Reasoning Ability of Children of the Fourth, Fifth, and Sixth School Grades*. Contributions to Education, No. 37. New York: Teachers College, Columbia University. 1910. Pp. viii + 133. \$1.50.

Huygens, Christian. *Oeuvres complètes*. Publiées par la Société Hollandaise des Sciences. Tome douzième, Travaux de Mathématiques pures 1652-1656. La Haye: Martinus Nijhoff. 1910. Pp. vi + 296.

Kleinschrod, Franz. *The Inherent Law of Life: A New Theory of Life and of Disease*. Translated from the German and edited by Louise C. Appel. London: G. Bell & Sons. 1910. Pp. vii + 214. 3s 6d.

Proceedings of the Aristotelian Society. Vol. X, New Series. Containing the papers read before the society during the Thirty-First Session. 1909-1910. London: Williams and Norgate. Pp. 300. 10s 6d.

Podmore, Frank. *The Newer Spiritism*. London: T. Fisher Unwin. 1910. Pp. 320. 8s 6d.

NOTES AND NEWS

FROM a notice of Haeckel's "Evolution of Man" in *Science* for November 4, signed V. L. K., we take the following: "Since 1876 some things have been discovered about the evolution of man, and many things have

been said about Haeckel's conception and treatment of the subject. In addition, two more German editions of Haeckel's book, the fourth and fifth, have been published. Of these the fifth is a very thorough revision, involving some enlargement and bringing the matter of the book into line with present-day knowledge. Perhaps this last sentence is not a very happy one. Haeckel's particular evolutionary interpretation of present-day knowledge of human structure, physiology and development may not be held by all biologists to be a true bringing of this knowledge into line. 'Der Haeckelismus in der Zoologie' is a subject that will not down wherever biologists come together. And its discussion usually leads to a going apart. Biologists are likely to be of two minds concerning the advisability of putting Haeckel's 'Evolution of Man' into the hands of the lay reader as a guide and counselor on this most important of evolution subjects. Haeckel is such a proselytizer, such a scoffer and fighter of those who differ with him, that plain, unadorned statement of facts and description of things as they are can not be looked for in his books. Or, if looked for can not be found. But this very eagerness to convince; this hoisting of a thesis, this fight for Haeckelian phylogeny and Haeckelian monism all make for interest and life in his writings."

Science for November 11 prints the following notice: "In the 'School of Higher Studies' of the National University of Mexico, recently founded, professors are being engaged to give courses lasting each three months. Such an appointee has the title professor and is to reside at Mexico City each year for three months during his term of office. Among those already appointed on these terms are Professor Richet (Paris, physiology), Capitan (Paris, ethnology), Boas (New York, anthropology), Rowe (Philadelphia, political science), Reiche (Germany, botany), Baldwin (Baltimore, philosophy and social science). Professor Baldwin opened the series with a course entitled 'The Individual and Society,' which is to continue until January, 1911, and to be followed by a 'seminary' course in 1911-12. Professor Boas begins in November, 1910, Professor Richet in January, 1911, etc. The qualifications for enrolment are graduation from a university school (college) and high honors in subjects related to that to be pursued. The first course given under these restrictions had an enrolment of fifty-five. It is expected that these professors will devote their courses to research as well as to instruction.

As previously announced, the tenth annual meeting of the American Philosophical Association will be held at Princeton, December 27-29, beginning on the morning of the twenty-seventh. The sessions will begin on Tuesday morning and the program will probably be continued into Thursday morning. Members are requested to send to the Secretary, Professor Edward G. Spaulding, Princeton University, not later than December 1, the titles of papers which they intend to read.

THE JOURNAL OF PHILOSOPHY

PSYCHOLOGY AND SCIENTIFIC METHODS

ON THE ASSOCIATION FUNCTIONS OF THE CEREBRUM

THE relation of the brain to mental processes or, more broadly, that of mind and body, is a topic of perpetual interest. Numerous explanations of this relation have been suggested and discussed, and much has been written by the monist and by the dualist, by the interactionist and by the parallelist. When taken from his scholastic environment and off his philosophic guard, even the idealist will, at times, admit that, as a working, every-day hypothesis, we may say that the brain is closely associated with mental states or with consciousness. It is with this topic the present paper deals, but with the intention, and, in fact, with the explicit avowal, not to review the different hypotheses or to discuss the subject from a philosopher's standpoint. It is in a less general way that the subject will be approached, viz., by recording certain facts regarding the activities of the cerebrum and certain facts of a mental order, and by deductions from these facts.¹

Our present knowledge regarding the functions of the cerebrum may be briefly summarized as follows: (*a*) the relation of muscles or of movements of bodily segments to certain areas of the cerebral cortex is well recognized; (*b*) we know something of the relations of sensations to other cortical areas, or, to speak more exactly, we know something of the relation of injuries of these areas to disturbances of certain sensational processes; (*c*) little is known of the relation of perceptual and associational mental states to any part of the cerebrum, and none of the hypotheses regarding this relation is in conformity with the known facts and none is widely accepted. Before taking up the special topic of the present paper, the formulation of an hypothesis regarding the functions of the so-called association areas, it will be well to epitomize the generally accepted facts regarding cerebral localization. Some of these facts are of special value for the understanding of the hypothesis that is to be presented.

¹ In this connection it may be stated that the description of events will be observed to be rather interactionist, but it is to be noted that this is done without epistemological implications, and solely for convenience of expression.

Anatomical Divisions of the Cerebral Cortex.—The fissures of the cerebrum are so well marked, and many of them so constant in location, that gross anatomical divisions of the brain into frontal, parietal, etc., lobes were made with these as bounding lines. It was thought that these areas were quite distinct and that the division had a functional as well as an anatomical value. During the past few years, however, numerous histological studies of the structure of the cortex have shown the crudeness of the divisions by sulci, and a finer differentiation into areas according to cell and fiber lamination has been made. Some of the results of these studies are shown in the accompanying figure in which are marked the divisions on the lateral

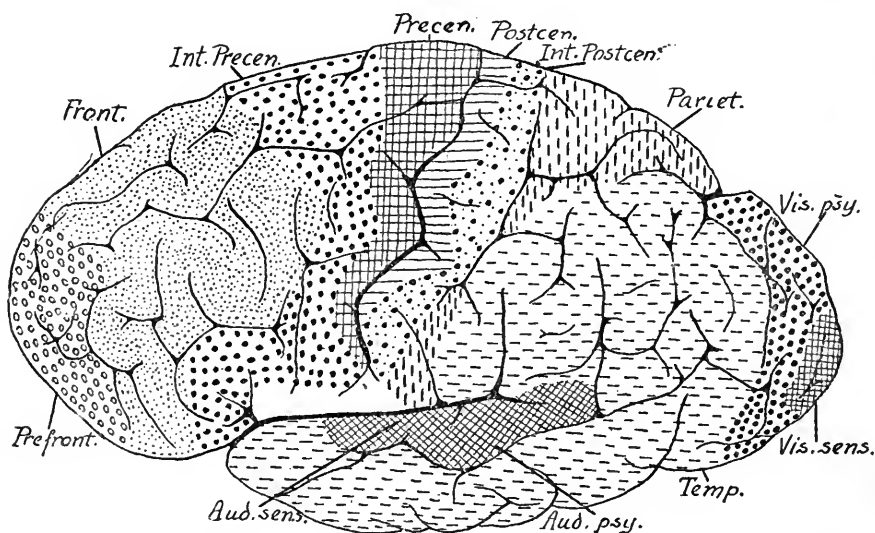


FIG. 1. Cortical areas, differentiated by cyto- and myelo-architectonic.
Adapted from Campbell.

aspect of the left hemisphere.² It will be seen that the frontal lobe (anterior to the fissure of Rolando) is divided into four areas not differentiated by lines of sulci; the parietal, temporal, and occipital

²From A. W. Campbell: "Histological Studies on the Localization of Cerebral Functions." Cambridge, 1905. Campbell's results are, in the main, similar to those of other investigators, although it should be stated that in certain details they have been criticized. For the technicalities and for finer differentiation the reader is referred to the following publications. K. Brodmann: various articles in *Journal für Psychologie und Neurologie*, 1902-1909, and "Vergleichende Lokalisationslehre der Grosshirnrinde in ihren Principien dargestellt auf Grund des Zellenbaues," 1909. J. S. Bolton: *Philosophical Transactions*, CXCI. 1900; *Journal Mental Science*, 1905-1908; Recent Researches on Cortical Localization, in L. Hill's "Further Advances in Physiology," 1909.

areas are divided into eight distinct zones, some of which are, and some of which are not, bounded by constant fissural lines. These cortical areas are supposed to have different functions, but the comparison of clinical and physiological data with the structural studies is not yet satisfactory in regard to all areas. We shall need, therefore, to take for consideration at one time several areas and attempt to show the functions so far as they are known.

Frontal and Prefrontal Areas.—Of definite functions of this large area we have comparatively little knowledge.³ Ferrier found movements of the head and eyes to follow stimulation of the frontal lobes, but it is not certain that these results were due to the stimulation of an area other than the intermediate precentral region, experiments on which are mentioned below. Respiratory and heart rhythm changes have been found to accompany stimulation of the frontal regions (Langelaan and Beyerman), and these results have been taken as indications of an "attention" function of this area. Spinal reflexes are inhibited or their latent periods prolonged when the frontals are concomitantly stimulated and the latent periods are shortened after extirpation of the frontals. An inhibition function has, therefore, been assumed to have its seat here. Intellectual defects are said to follow injury to or destruction of the frontal lobes, and there is much clinical and physiological evidence in support of this (Phelps, Mills, et al.). The frontals are underdeveloped in cases of mental deficiency and they undergo atrophy in cases of dementia (Bolton), which facts have led to the statement that this "region is concerned with attention and the general orderly coordination of psychic processes." Following the extirpation of the frontals in cats and monkeys I have found no definite motor inabilities, but there were distinct losses of associations (habits). Finally, we may mention that centers for motor speech associations have been located in the left frontal, one for writing and the other for verbal speech.⁴ The verbal speech area is included in the intermediate precentral

³I have considered in some detail the facts regarding the functions of the frontal and prefrontal regions in a monograph ("On the Functions of the Cerebrum: The Frontal Lobes," *Archives of Psychology*, 1907) and the present account is a brief presentation of these facts.

⁴At this time we shall not need to consider the current controversy regarding aphasic conditions and the brain localization of speech functions. In this article I take the generally accepted views. I am aware that some doubt has been cast upon the value of the older conclusions drawn from the available aphasia data, but on the other hand we have a number of facts that can well be understood only upon the older basis. Marie's contribution appears to be valuable in a negative or critical way in that he calls attention to loose methods of clinical and pathological examination, but the positive value of his deductions appears slight.

area by Campbell, but Brodmann and Elliott Smith note distinct differences in structure between this and the intermediate precentral.

Precentral and Intermediate Precentral Areas—From early times a connection between voluntary movement ability and the cerebrum was suspected. Head injuries were noticed to be followed at times by paralyses and at times by convulsive movements that could not be voluntarily controlled. When autopsies were performed, definite lesions were found associated with these movement disturbances. These observations were supplemented by stimulation experiments by which it was found that the excitation of certain cortical areas in the dog was accompanied by movements of the head, trunk, or limbs. The original observations of Hitzig have been confirmed and supplemented by numerous investigators. The later work, by refinement of methods and especially by the use of the brains of monkeys and man, has given us an accurate map of the areal distribution of motor function. On the brain of the chimpanzee, which in this respect closely resembles that of man, Sherrington and Gruenbaum found

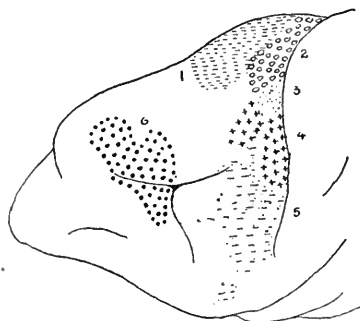


FIG. 2. Cortical motor areas in the monkey. Adapted from Vogt. 1, tail and vertebral column; 2, foot, leg, and thigh; 3, trunk; 4, arm and hand; 5, face, neck, tongue, jaw, ear, and eyelid; 6, eyes and lids.

the motor area to be anterior to the fissure of Rolando. These results have been confirmed by the Vogts, who not only stimulated many points, but who have recorded the location of each stimulus and the character of each resultant movement. The combined results of the Vogts showing the relation of the pre-Rolandic cortex to movements are represented in Fig. 2. On careful stimulation of the cortex, both the English and the German investigators found coordinated, but rather simple, types of movement of different parts of the body.

These results have been partly confirmed on man by a similar method of stimulation, and the results of clinico-pathological examinations are in accord with them. Indeed, so much has already been accomplished in this direction that we are justified in concluding

that there are similar arrangements of the cortical motor areas in man and in the higher apes. The movements produced by stimulation of the precentral cortex, as has been mentioned above, are simple, but coordinated, and similar to those of a simple reaction. In addition to the areas producing this simple type of movement, Sherrington and Gruenbaum and the Vogts found a second area in the frontal cortex, the stimulation of which was accompanied by movements of a more complex character. In the diagram this area is marked 6. Stimulation of this region produced associated movements of the eyes, conjugate in character, movements of the eyelids, and, at times, combined movements of these parts and of the head. These movements and this area are probably the same as the movements and area found by Ferrier and mentioned in connection with the frontal regions. Both are doubtless the intermediate precentral area.

Postcentral and Intermediate Postcentral Areas.—Both the pre- and post-central gyri were formerly thought to have a motor or a combined motor and sensory function. The experiments on the precentral areas have, however, established the true limits of the motor area, and it is almost universally admitted that the postcentral cortex has not a direct, but only a remote, connection with the initiation of motor impulses. Observations on man have definitely settled that the postcentral convolutions are concerned with certain sensational processes, the receptor organs for which lie in the skin and in the underlying tissues. The most interesting and the most conclusive evidence of the association of this area with the skin sensations has been obtained by Cushing, who stimulated this area in a conscious individual whose brain had been exposed preparatory to an operation. At the time of the stimulation, the subject reported peculiar sensations from the arm which were obviously not due to an external stimulus. It is also to be noted that certain hypesthesias and anesthasias in man have been associated with tumors, hemorrhages, and other lesions of this part of the cortex. Lesions of the neighboring area, the intermediate postcentral (possibly also of the neighboring association area), produce the condition known as astereognosis. Stereognosis, it will be remembered, is the name given to the ability to recognize objects from the sensations received from the skin and motor apparatus. Although in clinical works this is called a sensation, we know it is a complex of sensations and is allied to the associations of speech.

Auditosensory and Auditopsychic Areas.—This part of the temporal lobe is associated with the sense of hearing. By means of the training-extirpation method extensively used by me, Kalischer was able to show that when this area was extirpated, animals failed to respond to tones to which they had previously learned to respond.

er investigators had noted the failure of animals to respond to sounds after destruction of the temporal lobes, and, although their methods are more open to criticism than those of Kalischer, the facts warrant the conclusion of a close connection between this part of the cerebral cortex and hearing. Nothing more of a definite character is known of the functions of the so-called audiotpsychic region, unless we are to assume that Campbell intends to include therein part or all of the area for sensory (auditory) speech. In addition to the apparent auditory function of this area, it has been found that stimulation is followed by movements of the ears (Schäfer). The movements are similar to those produced by stimulation of the precentral (probably more like those from the stimulation of the intermediate precentral) area. They have, however, a longer latent period, and this fact indicates that the movements are not directly initiated from this area.

Visuosensory and Visuopsychic Areas.—Of the cortical sensory functions, that for vision is the most accurately marked out. Many observations on the relation of vision to the cortex have been made, and Henschen in particular has given us the results of clinical and pathological studies that show an almost accurate representation on the cortex of the different parts of the retina. Extirpation or destruction of this area on one side is followed by an hemianopia; extirpation of both, by complete blindness. The neural pathways from the eyes to the occipital cortex have been carefully investigated, and there seems little reason to doubt a close relation between the occipital lobes and visual sensations. Reference to Fig. 1 will indicate that in the occipital region at least two areas are supposed to be connected with the visual apparatus. To these areas Campbell gives the names visuosensory and visuopsychic, respectively. The visuosensory area has been referred to above as physiologically and clinically well understood, but it should be stated that there is little evidence for a functional differentiation of this area from the so-called visuopsychic. Some observers have located in the visuopsychic region an area which is supposed by them to be concerned with color vision, but this localization is not widely accepted. In the same area a center for visual speech has also been located by some, but it is certain from recent work that the speech center must be localized, if at all, within the adjacent association area. From stimulation of this visual area Schäfer obtained coordinated movements, and found, as in the case of the temporal lobes, a longer latent period than for the movements produced by stimulation of the precentral cortex.

Parietal and Temporal, or the So-called Posterior Association Areas.—Of this large portion of the cerebral cortex the functional relations are not understood as well as those of the frontal association

area. In connection with the consideration of the temporal (auditory and auditopsychic) region, mention was made of a possible relation of this area to speech function; in connection with the occipital (visuosensory and visuopsychic) area a similar functional relation was mentioned as a possibility; and in connection with the intermediate postcentral convolutions stereognosis was considered. On account of the inaccuracy of the cerebral examinations it is not sure that these functions belong to the areas mentioned, and, in fact, it is likely that part or all of these functions are subserved through the cells in the posterior association area. Following extirpations in animals, I have found losses of associations similar to those resulting from extirpation of the frontal lobes, and this fact would indicate the use of this area in the formation of habits. Although not much weight can be placed upon it at the present time on account of the small amount of material that has been examined, it may be mentioned as an additional fact that in certain types of intellectual men the posterior association area has been found to be more highly convoluted (supposedly better developed and extensively used) than the frontal portion of the cerebrum.

Although the consideration of the known functions of the cortical areas has been necessarily brief, sufficient indication has been given that the motor and the sensory (hearing, touch, vision) cortical mechanisms are understood and localized. Opposed to this definiteness there is a vagueness in regard to the functions of the association areas. Some few facts are known, but there appears to be more or less haze about the subject, and writers tend to avoid it. Following is a summary of the known facts regarding the two large association areas: (a) in the frontal association area are located centers of motor speech and writing; (b) in the posterior association area are centers for what clinicians call the understanding of auditory and visual speech; (c) the frontal regions are clearly associated with the production of movements, especially those of a complex character; (d) in the posterior association area (or in the closely associated intermediate postcentral cortex) is an area for the understanding, through the medium of the skin and motor sensations, of the character of objects; (e) the results of my work on monkeys and cats indicate that both the frontal and the posterior association areas are concerned in the formation of simple sensorimotor habits.

These facts give the clue for the understanding of the relation of these association areas and of their functions. All the physiological and all the clinical data point to the use of the frontal lobes for the initiation of complex motor processes. All the physiological and all the clinical data point to the use of the posterior association areas for the combination or the association of sensory processes.

The results that have been mentioned and the two conclusions that have been drawn from the results, led to the formulation of the following scheme or hypothesis regarding the cerebral processes that take place in these areas, and which result in the so-called higher intellectual processes, or, as we may call them, associations.⁵ Fig. 3 indicates the conception of the cerebral connections. It is generally admitted that we have cerebral areas which receive impulses through the afferent sensory neurones and areas (*M*) which give rise to or initiate impulses which go by way of the efferent neurones to the muscles and glands of the body. The direct connections and activities of this kind of neurones in the spinal cord give rise to reflexes, and it is probable that similar reflexes occur through the activity of the cerebral neurones, although this matter is not settled. It is most likely that in the cerebrum at least two, and per-

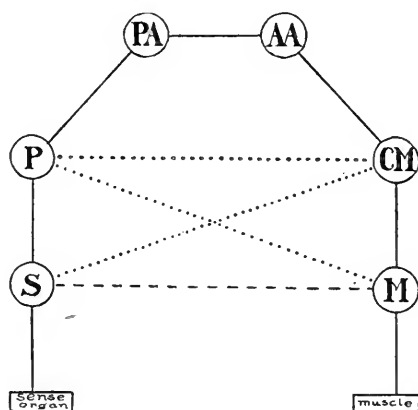


FIG. 3. Scheme of cerebral connections associated with mental processes. *S*, sensory area; *P*, perceptual area; *PA*, posterior association area; *AA*, anterior association area; *CM*, area for coordination of movements; *M*, simple motor area.

haps four, other neurones must function to produce a cortical reaction accompanied by conscious assimilation and conscious effort.

In the formation of an association many, perhaps thousands, of cells in different areas of the cortex are active. An associational connection between the sensory and the motor ends is, I believe, always mediated through at least six neurones or sets of neurones. To take a visuomotor association as an example, it is conceived that the following cortical areas are successively set in activity: visuo-sensory, visuopsychic, posterior association, anterior association,

⁵ The view here expressed has been briefly given in the *Psychological Bulletin*, Vol. V., 1908, p. 219, note.

intermediate precentral, precentral. The activities of the visuo-sensory and the visuopsychic give us perceptions, the activities of the intermediate precentral and the precentral give us reactions, and the two association areas are connecting links between the sensory and motor ends, and between the two hemispheres.

That both association areas are used in associations (physiologically and psychologically) is established by the phenomena of aphasia and apraxia. That both are utilized in the formation of definite modes of reaction is shown by the loss of associations by animals when either is destroyed. The anatomical connections of these areas with each other and their connections with other cortical cells have been sufficiently well studied to show a close relation of the areas to each other and to the projection spheres. That both are important, not silent and useless, parts is proven by the occurrence of mental defects with disease or destruction of either.

Evidence is at hand to show that the frontal areas have a more direct connection with the motor areas than do the posterior. The variations of reflex movements concomitantly with variations in frontal lobe activity have been mentioned. That the frontals have a more direct relation to motor processes, and are for motor associations, is a reasonable deduction from the apraxia studies of Liepmann and others. The older cortical localizations of vocal speech and writing, although they may need some modification to conform to recent findings, also support this view; and, finally, we may mention that the frontal region degenerates more than other portions when there is an inability of adjustment (dementia), and that it is underdeveloped when there is a condition of imbecility.

It is by a continual process of adjustment that man has attained his place in the world, and the variety of activities so characteristic of him is made possible through the frontal regions. The direct motor responses of an animal need no large amount of association elements, but the indirect reactions of man require an amount of coordination that is supplied by the association cells. There is the increased use of the hands, of tools, of the legs, and of other mechanisms for propulsion, requiring new adjustments and new associations; and the impulses to act are paralleled by a similar number of impulses to check activity, or tending to check the primary, reflex-like impulses.

The posterior areas are, from the accounts given above, clearly more closely allied with the sensory spheres. The large size of this region in intellectual men is only one indication of this, but the sensory aphasias and other similar processes that are located here by clinicians confirm this view.

We may now return to the scheme of cerebral connections that

has been suggested (Fig. 3). Here are represented all the kinds of cerebral connections that clinical and physiological studies have indicated. The centers *M* and *S* are to be conceived to be multiple, and to include all the so-called subsidiary centers, *e. g.*, those in the basal ganglia and in the spinal cord. The direct functional connection of these centers results in reflexes of different kinds. But as the stimulus reaches the organism at certain times and under certain conditions, the impulses are transmitted toward the centers *P*, which are located in different parts of the cortex depending upon the stimulated end organ. In turn the posterior association area is stimulated (*PA*), and thence the coordinating motor area (*AA*), and then a second, but less extensively general, coordinating center (*CM*), and finally the center (*M*) from which the impulses arise that go by way of the spinal neurons to the muscles and glands of the body. This sixfold association process appears complex, but it is doubtless simpler than the actual physiological processes. None of the centers noted on the diagram represents one cerebral neuron; most of them must represent many, perhaps thousands, of neurones which act together to produce the required effect of a reaction following a definite stimulus. Nor must it be understood that all cerebral activities take the long path. From the studies on animals of the relation of the association areas to the learning and retention of habits, it is plain that after an association (habit) is formed, the upper (*AA* and *PA*) areas may be dispensed with, and the reaction obtained through the lower centers (*P* and *CA*; or *S* and *M*). It is likely that most men use the association areas less than once during a thousand stimulations of a sense organ. It is certain that some men use the association areas even less than this, and those of defective development, such as idiots, have probably none of their frontal or posterior association cells active throughout the day.

The hypothesis of cerebral mechanics that has been advanced, helps to understand the various conflicting views of aphasia: the diaschisis of von Monakow, the Broca localization, the dementia view of Marie. From this point of view we may also understand the localization of attention and inhibition centers in the frontal lobes, and at the same time we appreciate why there have been ardent advocates and opponents of "intellectual centers" in the frontal and the posterior association areas. In believing in localization, we need not accept the crude views of Gall and Spurzheim; in fact, localization studies of recent years prevent this. Nor do we need to accept the views of Brodmann who believes that each of his thirty-eight anatomical areas represents a different physiological or mental function. At the present time, it is premature to speculate regarding all the distinct anatomical areas, but we have sufficient anatomical,

physiological, and psychological evidence to warrant the conclusions that have been drawn regarding distinct functions for the hitherto little understood association areas.

SHEPHERD IVORY FRANZ.

GOVERNMENT HOSPITAL FOR THE INSANE, WASHINGTON, D. C.

THE PLACE OF THE TIME PROBLEM IN CONTEMPORARY PHILOSOPHY¹

THIS paper is designed first of all to present a strategic analysis of the main situation in contemporary Anglo-American philosophy: an analysis which shall to some extent break up current systems into the discriminable tendencies or separate dialectical motives that have gone to the formation of them, which shall draw out the lines of opposition or congruency between the several elements of current opinion, shall ascertain upon what points there is most nearly general agreement, and shall discover by what lines of argument those who conceive it important to refute a given doctrine may proceed against the enemy with a maximum of directness, with a minimum waste of ratiocination, and with the strongest supporting columns. Just how all this bears upon the special topic assigned for this discussion will appear in the sequel.

I

Ignoring minor excursions and alarums, the situation—the exceedingly interesting and live situation—which we are concerned to analyze may be said to be something like this: Upon one side, but a little in the background—still influential, yet, whether deservedly or otherwise, assuredly of diminishing influence—stand the lately dominant neo-Kantian types of systematic philosophy, of which the most essential elements may be called, for short, rationalism in epistemology; “eternalism” in the conception of the meaning of truth and the nature of “ultimate” reality; idealism; and “this-worldliness,” or a belief in the necessity of giving a positive place, value, and significance in reality to the concrete, finite, temporal existences of ordinary experience. (This use of tags and labels, in place of explicit statements of the propositions asserted is, I know, odious and, with inexpert audiences, usually befogging; but on this occasion I hope it may be permitted, in the interest of brevity, especially since the “-isms” in question are for the most part presently to be

¹ A paper read as part of a prearranged discussion of the topic, before the American Philosophical Association, at its meeting at Yale University, December, 1909.

defined.) Against this once official and comfortably established doctrine, there now aggressively press forward, sometimes singly, sometimes in diverse combinations, several new tendencies—or older tendencies revived. The four which here most concern us are “anti-intellectualism”; pragmatic nominalism, or radical empiricism; realism; and temporalism in metaphysics and epistemology. These are at one in their opposition to eternalistic idealism, whether that be of the monistic or the pluralistic sort. All this is well known to everybody. But I now come to the five points which I primarily desire to make.

First: The four newer tendencies in question are severally not equally opposed to all four of the elements or logical motives which enter into the epistemology and metaphysics of contemporary idealism. The logic of the new realism is, to be sure, hostile to idealism; and what I have called temporalism is obviously the antithesis of “eternalism”; but it is not, on the face of it, clear that temporalism may not form as congenial an alliance with idealism (as such) as with realism. It is not clear that realism is or need be anti-intellectualistic. And it is far from clear that a truly radical empiricism or pragmatic nominalism may not lean rather to idealism than to realism. In any case, moreover, *none* of the new tendencies has in it any hostility towards what I have called the this-worldliness of all genuinely modern idealism, its unwillingness to define reality in terms that are but the blank negation of all the characters of concrete, empirical existence.

Secondly: The spokesmen of the newer tendencies are not agreed among themselves as to the combinations or groupings in which those tendencies may properly be joined together. It is rarely safe in philosophy to assume that any of us really understands what another means—and we all of us have a curious shamefastness about being classified; yet I suppose I may say (if I refrain from mentioning any names) that there exist realists, or near-realists, who are not pragmatic nominalists, pragmatists who are not realists, rationalists who are not idealists, and perhaps temporalists who are neither pragmatic nominalists nor realists. Yet,

Thirdly: It is important to note that in the combinations nowadays made up out of two or more of the tendencies mentioned, there is nearly always one constant (though the presence of that constant is not always emphasized nor made very explicit), namely, some sort of temporalism. You may find *mere* temporalists, or realists who are temporalists, or idealists who are temporalists, or radical empiricists who are temporalists. And though you may doubtless also find combinations in which this factor is lacking, it seems to be the one that appears more often than any other in the systems of doc-

trine now most growing in vogue and influence—to be the point about which there is the nearest approach to agreement among our philosophical innovators.

Fourthly: This implies that the element in the idealistic systems against which there is the most general and most direct opposition is not its “concreteness” or “this-worldliness,” against which, by itself, there is no opposition at all; nor yet its rationalism; nor its idealism as such, against which the opposition is thus far by no means universal; but its epistemological and metaphysical eternalism. Here, then, is the situation thus far: a rather common antagonism to one of the four elements in modern idealism; a rather general sympathy with another of its elements, namely, its real respect for concrete particulars of experience. Now,

Fifthly: There is especial reason to consider that these two elements—the second and the fourth, the eternalism and the “this-worldliness”—of the idealistic systems are essentially incongruous *inter se*; that if one is to be taken, the other must be left; that unless the temporal or successive character of experience, and the reference to temporal situations, and to truly pending issues, of the judging process, be regarded as merely senseless and illusory appearance, there can be neither any such thing as an absolute and eternal and completed truth, nor any such thing as an absolute and eternal and perfect reality or concrete existence.²

Now, if these five points are duly reflected upon, the strategy of profitable discussion seems to become pretty plain. The opponents of eternalistic idealism find common ground upon which they can join forces in the opinion that truth can be interpreted only as relevant to and colored by a temporal process, and that reality is known or conceivable only as implicated in temporal process. And this ground lies just opposite the point of greatest internal weakness in the present-day idealistic systems, namely, the obligation which they have accepted to refrain from merely denying or ignoring the empirical characters of reality as it primarily presents itself—which characters include that of temporal succession; the obligation to find in the eternal and absolute room and meaning and pertinency

²If I were attempting a complete enumeration of the important newer proclivities of contemporary philosophy it would be necessary to mention at least two others: “instrumentalism” in the theory of knowledge, and what I have elsewhere called “radical evolutionism”—the doctrine that, in the words of E. D. Fawcett, “Nature is continuous creation; it is not only remade from moment to moment, but its history will teem with incessantly *novel fact*” (“The Individual and Reality,” p. 280). Both these doctrines are special, though significantly enriched, phases of temporalism; their inclusion would not, I think, vitiate the generalizations made in the text. To the former some reference is made later in this paper.

for the changing and relative and finite. Into this part of the lines of the modern idealists the whole army of temporalists may enter unopposed, since at this point idealism itself has already been penetrated by temporalistic concessions. This point once entered and possessed, temporalists may then conceivably turn its guns against the eternalism which forms the other extreme of the idealistic position. That done, something definite will have been settled; though much, doubtless, will still remain for settlement, namely, the fate of the remaining factors, rationalism, and idealism itself. But even these remaining issues can then, I think, be attacked in an especially direct and effective manner. We shall have to ask, next, simply these two questions: First, does the recognition of the ultimate "realness" of temporal becoming best harmonize with realism or with idealism? Second, does it permit of that confidence in the commensurability of reality and conceptual thought which is called by its critics "intellectualism"?

Such, in highly formal outline, I would suggest, is the way in which the logical forces available in this discussion are at the outset disposed. From this military map it appears that the key to the whole position of neo-Kantian idealism—and especially of that idealistic monism which Professor Royce has for many years so brilliantly defended—may be considered to lie in the point where the eternalism of that doctrine is united with a species of concrete temporalism. It is equally the case that the key to the positions, alike of all the new anti-absolutist epistemologies and of the new realism, lies in their temporalism. If the eternal entities of absolute idealism can be shown to be incompatible with the "concreteness" of the universal being that is the highest metaphysical conception of that doctrine, then *that* alliance of philosophical tendencies is once for all broken up in confusion. But on the other hand, if the eternalist can show that any recognition of the distinction between truth and error, and even any explanation of the possibilities of temporal experience itself, implies the existence of an eternal truth and an eternal knower, then (for reasons which it would here be superfluous to point out) with the triumph of the arguments for eternalism, idealism and "rationalism" would triumph also, and all four of our newer tendencies would be put to rout at once.

II

The relative positions and the strategic significance of the several issues being thus indicated, and the key—or at least, one key—to the situation being thus determined, it now becomes possible to begin an examination of the nature and force of the arguments at the dis-

posals of the two contending parties at the point where combat is joined—that is, in the controversy between eternalism and temporalism. What precisely is meant by the affirmation of the “eternity” of truth and of “ultimate” reality, and upon what grounds is that affirmation based? And what, on the other hand, are the reasons for the contention that truth is wholly an affair of the world of temporal experience, and that all reality belongs within the temporal order and is subject to lapse, change, and evolution? And, finally, how far do the reasons—and not merely the conclusions—on the one side meet and fairly oppose the reasons on the other side? Is it, as it sometimes seems to be, a situation in which each is irresistible in attack, but powerless when upon the defensive?

Manifestly, these questions can not be fully and convincingly answered in this paper. Yet I shall try to indicate what seem to me the two or three most important dialectical considerations on either side, to examine their more obvious relations, and to express at least a dogmatic opinion of their relative potency.

The notion of an eternal being arises, perhaps, most naturally and plausibly when men reflect a little upon what they seem to mean by the trueness of a judgment. In this matter we must, I think, ascribe to the average man a *mens naturaliter platonica*. When the question is raised at all, most people, so far as I can ascertain, tend to think of the mere truth of any proposition as somehow subsisting in a realm where all questions of date are irrelevant. Through the windows of a passing moment of temporal experience a man may, when he believes he has arrived at a true judgment, seem to himself to be looking out upon a world of timeless validities. Platonistic philosophy, even in its earlier modern forms, has been prone to conceive of this “eternity of truth” as holding only of the so-called eternal truths—of the relations of implication between the fundamental abstract concepts, the unalterable “simple natures” of things. But this is surely an inadequate philosophical transcription of the naïve eternalism, the deep-rooted anti-pragmatism, of the epistemology of common sense. If the argument holds at all it holds of *all* valid judgments. If the judgment be true, it should seem, to those so minded, to have been true before any temporal mind be-thought itself of that truth—it would have been true if no such mind had ever chanced to think of it—it will be true when all such minds have forgotten it—and so on, *in sæculā sæculorum*. That Socrates would drink the hemlock did not become true first at the moment of his drinking it; that the event had a date does not (to most men) imply that the trueness of all propositions relating to that event likewise has a date. To the natural man, I am sure, the idea of a

judgment's becoming true seems a wild paradox. Now, this way of thinking is none the better for being natural to the unchastened mind. But it is at all events to be remembered that the so-called "rationalist" in epistemology is in this matter probably on the side of naïve common sense, rather than the humanist or the pragmatist. Eternalistic idealism is the technical interpretation and elaboration of the vague eternalism of the average man's apprehension of the category of trueness. The eternalism of common sense, however, is after all only a phase of the general tendency of the undisciplined intellect to hypostatize, to take its concepts absolutely and unrelatedly; this unreflective disposition to think of truth as somehow dateless would, if left to itself, work out into a sort of nebulous Platonic realism, such as you may often detect in rustic philosophers who have perhaps never heard of Plato. But eternalistic idealism is idealism as well as eternalism; and here, it appears to me, is where it parts company both with the epistemology of the average man and with the principle of contradiction. "Truth" as a mere abstraction, the modern idealist feels—as John Norris already in the seventeenth century felt—can not be eternal all by itself, primarily because it can not, *as an abstraction*, be said to *be* at all. It is, moreover, a predicate that is meaningless except as related to a judgment; and a judgment is an activity of a concrete conscious mind. So much of the dialectic of humanism does latter-day idealism accept. Truth as a predicate of a judgment must, therefore, after all, have its subsistence in a conscious mind and be a specific quality or mode of relation in the actual experience of such a mind—must even, as Professor Royce tells us, be relative to the purposes and practical meanings of that mind. Only, since truth must be eternal, the mind that possesses it must also be eternal. And if the truth known by this mind is to have any pertinency to the truths we strive after and fancy we attain, that mind must be consubstantial with ours, its eternal judgments the fulfilment of our judgments, its timeless experience inclusive of our temporal experience. Thus concrete experience itself gets caught up into that eternity which was originally a peculiarity of "truth," when truth figured as a foil and contrast to the shifting stream of consciousness upon whose troubled surface it is now and then brokenly reflected.

Now, how eternalism is incompatible with the concrete idealism into which it historically develops when it seeks to make itself both coherent and pertinent to life, I have recently elsewhere endeavored to make plain; I shall not, therefore, repeat that argument. But, whether or not these two be incongruous, it must be noted that there is (among several others) one further argument for the doctrine of an eternal being which is at the same time an argument for idealism.

This is the argument—an interesting hybrid of dialectic and analytical psychology—which finds its finest expression in the second volume of Professor Royce's "The World and the Individual," but has its chief origins, I suppose, in Kant's painful reasonings about the "Synthetic Unity of Self-Consciousness"³ as the prime condition of the possibility of experience *überhaupt*. If the argument already outlined is the Platonistic, this may be regarded as the peculiarly Kantian element in eternalistic idealism. It is worth recalling, as a matter of history, that Kant's problem concerning the conditions of the possibility of experience presented itself to him most acutely, perhaps, in the special form of the question: How is the experience of succession possible? To this question—which is assigned no special prominence in his favorite schematic analyses of his own system, but which none the less had a peculiarly important place in his reflection—Kant gives, if my arithmetic is right, not less than half a dozen different answers in different places in the two editions of the "Transcendental Analytic." The argument as presented by Kant is characteristically wavering and confused, and does not altogether unequivocally imply the reality of a strictly supratemporal ego. But as modernized and clarified, it runs substantially thus: The experience of succession can not be identified with *mere* succession. In order that succession may be known, the several successive moments must be present at once in consciousness, *i. e.*, non-successively, though with due recognition of the one-directional serial relation which their successiveness involves. This is true of any finite experience of the simplest case of temporal change; that experience both contains succession and yet transcends it, because the constituents of the succession, if it is to make up an experience, can not be mere *partes extra* or *ante partes*, as are the elements of a series merely as such, but must be synthetized in a single moment of consciousness. Every-day experience of time thus affords not only, within its own limits, a sort of sample of supratemporal being, but actually shows the necessity of holding every succession, so far as it is regarded as empirically real at all, to be presented in a single moment's consciousness that is not itself subject to succession. Thus the empirical reality of all time is rendered conceivable only if you posit a universal, supratemporal synthetic ego, which makes time possible by transcending it.

Now, this argument, if cogent, destroys, as I have said, *both*

³ It is to be hoped that the practise of rendering the German *Apperception*, in Kantian usage, by "apperception" will soon come to an end. *Apperception* is, of course, the common term of German eighteenth-century psychology for "self-consciousness"—which is not at all the ordinary import of the same syllables in English.

metaphysical realism (new or old) and metaphysical temporalism. For to the realist succession, change, motion, must have an extra-mental reality; the before- and after-relation must be a real relation between real terms. Indeed, the relational theory of consciousness, or rather of cognition, which is perhaps the only new thing about the "new" realism, makes especially abundant use of temporal distinctions in its explanation of the relation of perception to its object. But if there can be no temporal distinctions except within the unity of a simultaneous consciousness, realism is rendered inadmissible by the same Kantian argument which is supposed to have disposed also of all *mere* temporalism.

Here, then, roughly recalled to memory are (not the only, but) the two principal lines of approach to the doctrine that reality is in the last analysis an eternal or supratemporal being. One of them, here designated the Platonistic, has its most natural affinities with a kind of Platonic realism, but has historically been converted into an idealism through the force of considerations not involved in its own essence. The other—the Kantian—argument directly implies *both* eternalism and idealism. The upshot in either case is the typical neo-Kantian compound: a concrete (which in its most plausible formulation means a monistic) eternalistic idealism.

Let us turn now to the arguments on the side of temporalism. A complete enumeration can not here be attempted; but the three that to me seem most significant must be mentioned. The first two are epistemological in character; that is, they go to show that truth is relevant solely to temporal situations, and means—when ascribed to any given judgment—only a concrete quality or relation within finite experience, to which a date and serial position may be assigned. The first, which has been set forth by most "pragmatists," but is perhaps most associated with the name of Professor Dewey, has its roots in an observation in genetic and functional psychology. A judgment, it is observed, is a phenomenon arising in the temporal existence of a being whose primary business is not to know, but to live, to adjust successfully inner relations to outer relations, or to revise old adjustments so that they may satisfactorily provide for the new content that constantly emerges in experience. Judgments being thus, when genetically and functionally considered, nothing but plans of action for dealing with novel situations or disturbances of equilibrium, then "truth" must be interpreted in the light of this their genesis and function; and it therefore can not consist in a mere correspondence of the judgment with a system of timeless validities or with any fixed facts which get none of their meaning from the nature of the given situation. The second argument that I have in mind is the nominalistic part of Professor James's pragmatism. In

this doctrine it is taken as a maxim of philosophical and scientific method that any abstract term is only an abridged, usually a collective, name for some concrete particulars definitely to be pointed at in the experience of an actual finite mind. The abstract noun "truth" or "trueness," then, must have its meaning resolvable into such a qualitatively specific kind of item in somebody's experience—or at least into some immediately known experience of relatedness. Trueness is realized when there occurs in experience a certain kind of conscious reference or pointing *in* one moment of time *at* the experience of another moment of time. This attempt at the completion of nominalism by the reduction of the quality of "truth" itself to empirical definiteness and particularity seems to me a decidedly interesting enterprise of the pragmatist, the historic significance of which has not always been sufficiently remarked.

These two arguments for epistemological temporalism I mention only for the sake of insisting that they *are* arguments for temporalism—that is, for the doctrine that thinking is essentially pertinent to a transitive process and that the meaning of truth is wholly definable in terms of inter-temporal relations between the parts of our successive experience. The success of these two modes of reasoning I do not wish to discuss, though I may confess incidentally that neither of them seems to me, by itself, altogether cogent as an argument. My purpose is rather to distinguish from them a third way of arguing to a temporalistic conclusion which is essentially dialectical and not epistemological. Such an argument proceeds to show two things: first, that—leaving aside all direct inquiry into the meaning of "truth"—the notion of an existent, realized, eternal being as including or having any relations to finite and temporal existence is logically self-contradictory; second, that the second or more peculiarly Kantian kind of argument for an eternal knower is, as used, a way of showing the conditions of the possibility of the experience of succession which really implies the *impossibility* of such experience.

This third or dialectical attack upon eternalistic idealism thus employs two assaulting columns. The first of these, which consists in the proof of an inconsistency between two parts of the idealistic system, I shall, as I have said, not attempt to employ on this occasion. The other argument, however, must be briefly explained, especially since the first may appear inconclusive without it.

The proposed Kantian proof of the eternity of true reality betrays a deep-reaching confusion of conceptual time with the real time of our inner life—of *thinking about* a transition with the transition itself. At least in us higher animals, to be sure, all time-

experience has its conceptual aspect. We can *think* a succession only in so far as the elements of that succession are simultaneously present to thought. And to experience succession is, in part, to think succession; to be conscious that we are slipping from one moment into another is at *each* of those moments to have before us some image or symbol of them both, at least some pointing or cross-reference in the one by which it in some sense transcends itself and includes somewhat of the other also. But to experience succession is not *merely* to think succession; it is also to live through a succession, to have some of the content of experience lose that unique qualitative character which we call presence, while other content, previously potential only, loses the unique qualitative character of futurity and bare potentiality, and gains that of presence. The several moments of the succession may, then, require to be thought together at once; but they can not be lived through all together at once. And that is the difference between living and pure thinking. Thought can and must transcend the moment, overleap temporal limits. But in so doing it also always falsifies the moment, it loses the unique *quale* of temporal transition itself, it lets the ineffable biting flavor of real experience escape.

All this, of course, is most obviously and most vividly illustrated by those emotional or conative attitudes which peculiarly depend upon the experience of real temporal transition. Assuredly, if I am to-day to think with anxiety of some future difficulty, that future must to-day be in some sense also present—may, indeed, be very clearly and fully presented. Yet it is not present in the sense in which my anxiety about it is present. The cake that I want must be present to my thought before I can want it; but it is not, alas!—in spite of all the consolations of idealistic philosophy—it is not present cake. There are, in short (to put the point a little differently) in our temporal experience two distinct things—a perception of succession and a succession of perceptions. Professor Royce's subtle reasonings concerning the former leave the latter untouched; for they wholly fail to show that the two notions are equivalent. Transition, change and becoming, are not simply predicates of objects *in* experience; they are also predicates *of* experience. The distinction can not be denied or ignored by any idealist who has abjured the ancient error of supposing that directly known qualities of actual experience can be disposed of by simply calling them illusion. Given, then, the fact that we not only have thoughts of succession, but also a real succession of thoughts, it follows that the latter can not be contained in any *totum simul* of consciousness, whether of a finite or of an absolute knower. And thus, as it appears to me, the second or Kantian type of argument for eternalism is refuted, and the reality

of an absolutely and irreducibly and untranscendibly temporal mode of being is established.

But with the settlement of the issue between metaphysical eternalism and temporalism, two of the other issues enumerated earlier in this paper are affected also. Realism, though it may still have, and I suspect will have, other embarrassments, is at least delivered from the objection resulting from that Kantian argument which purported to establish both idealism and eternalism by a single consideration. And some restrictions upon the self-confidence of rationalism must, I am afraid, follow from a recognition of the reality and the peculiar character of the time of immediate experience. I may not take space to argue this point, but must be content to end with a dogmatic expression of the conviction that real time is an aspect of reality highly resistant to any attempt at thoroughgoing conceptual clarification and rationalization. The obscurities and paradoxes which arise when we try to "think through" the conceptual implications of the temporal continuum have been familiar since the time of Gotama the Buddha and that of Zeno of Elea. In the case of a sort of thing of whose reality we could have no evidence except through ratiocination, such conceptual difficulties would be a sufficiently good reason for doubting its reality. But since we have an intuitive or appreciative knowledge of the reality of temporal transition, these difficulties must be construed as proving, not the unreality of the entity, or aspect of existence, to which they attach, but rather the inability of the principles governing our processes of conceptual thinking quite to cover or exhaust the whole nature of reality.

ARTHUR O. LOVEJOY.

JOHNS HOPKINS UNIVERSITY.

REVIEWS AND ABSTRACTS OF LITERATURE

A First Book in Psychology. MARY WHITON CALKINS. New York: The Macmillan Company. 1910. Pp. xvi + 419.

The main text occupies only two thirds of the book; the remainder is devoted to an elaborate system of appendices. There are fifteen chapters, as follows: Introduction; Perception and Imagination; The Sensational Elements of Perception and Imagination; Perception and Imagination as Combination and Differentiation of Elements; The Bodily Reaction in Perception and Imagination; Attention; Productive Imagination, Memory, Successive Association; Recognition; Conception; Judgment and Reasoning; Emotion; Will; Faith and Belief; The Social Consciousness; and the Religious Consciousness. The appendix is divided into sections corresponding to these chapters and contains: "(1) Bibliograph-

ical lists and footnote references; (2) critical discussions of disputed problems in psychology, and supplementary notes upon topics briefly treated in the body of the book; (3) an account of the human body, in particular, of the nervous system and of the sense-organs, which amplifies the condensed statements of the preceding chapters; (4) a brief section on abnormal psychology; (5) a collection of questions, designed to test the student's first-hand understanding of the facts of psychology, and following the order of topics discussed in the successive chapters of the book." This sketch of contents reveals the two most striking features of the volume, namely, the standpoint of the self-psychology and the elaborate use of the appendix.

Professor Calkins, who is the foremost champion of the self-psychology, has here given us a clearly cut and forceful embodiment of her theory in a text-book. She recognizes the value of other points of view by pointing out that her earlier text-book, "An Introduction to Psychology," was written from two parallel standpoints, namely, the self and the structural (which she calls *idea-psychology*) and by aiming in the present book "to embody the important results of the so-called functional psychology."

Psychology is defined as "the science of the self as conscious." "This book has been written in the ever-strengthening conviction that psychology is most naturally, consistently, and effectively treated as a study of conscious selves."

Although the present author adheres more rigidly to the above definition of psychology than any other recent writer, it may well be asked if much of the richness of setting, numerous of the concrete descriptions and the most valuable interpretations, and the recognition of the results of purely objective experiments, are not introduced in violation of the definition. It does not seem to the reviewer that the self-psychology demands the restriction of scope imposed.

But the self-psychology is essentially a point of view in teaching. Is it advantageous? It has some advantage in that the study begins, and is, in large part, a study of immediate, concrete experience intact; it avoids confusion of the psychological and the physiological; it encourages introspection. On the other hand, there is danger of an aimless groping, for the object is not so specific and well set as by the structural method, or as logically precipitated as by the functional method; it does not in itself encourage systematic exhaustiveness; it probably appeals more to the person who has some knowledge of the subject than to the beginner. Introductory books now depend upon the teacher. This book can undoubtedly be used to advantage as a text, especially as the reviewer proposes to use it, parallel with text-books from other points of view.

The self of this psychology is the empirical self; the author is therefore not open to the charge of making any unwarranted metaphysical assumption in regard to the reality of the ego. The author is in good company in maintaining this definition. The view has the merit of giving us a descriptive and explanatory account in pure and undoubted psychological terms, in harmony with the doctrine that the conscious is co-extensive with the mental, and that (although it is not clear) the self is

to be regarded as a purely psychological rather than a psychophysical organism. But this leads to the omission or minimizing of much that is generally recognized as psychological. Thus, instinct is relegated to the appendix; habit is passed by with incidental mention; ideomotor action is treated lightly; the subliminal and automatic aspects of the sensory processes are neglected; the sense of equilibrium is ignored; the purely objective method of experiment is rejected; the concept of the subconscious is explained away; in general, the automatic aspects of the psychophysical organism are left out of account both in description and in interpretation.

The division of the book into a uniform text with a large amount of material in the appendix is a step in advance, although it has pedagogical disadvantage. It makes possible a uniformity of value, balance, and continuity in the text, and the introduction of desirable accessory, technical, and theoretical material in the appendix.

The self-psychology will have a fair trial in this book, which is lucid, systematic, and pithy in language and treatment and has a wholesome scientific, artistic, and philosophical setting.

C. E. SEASHORE.

UNIVERSITY OF IOWA.

A Study of Association in Insanity. GRACE HELEN KENT and A. J. ROSANOFF. *American Journal of Insanity*, Vol. LXVII., No. 1, pp. 37-96.

This study represents a determined and thoroughgoing effort to eliminate subjective sources of error in dealing with free association material.¹ The experiments described consist of a series of 100 stimulus words to which responses were obtained from 1,000 subjects, aggregating a considerably greater material than has previously been concentrated upon this topic. The 100 stimulus words are of varying degrees of familiarity, but, according to the writers, are selected rather for their unlikelihood of arousing special "personal experiences in ordinary subjects." However, the part played by special experience in the responses depends very much more upon the temperament of the subject than the actual character of the stimulus words. This temperamental tendency is, of course, precisely what the investigators wish to adapt the test to measure.

The authors raise the natural objections against the "logical" methods of classifying the responses, of which, indeed, save for special purposes, their frequency tables largely eliminate the need. These frequency tables occupy four fifths the space of the report. Each of the thousand responses to each of the hundred stimulus words is enumerated in alphabetical order, with the indication of its frequency. Thus to the stimulus word *table*, the response *article* occurs 3 times, *board* 14 times, *chair* 267 times. The greatest number of different response words was to *anger*, 280; the fewest to *needle*, 72. These tables thus constitute a dictionary of associations,

¹ This is the portion of the paper of greatest interest to normal psychology. The second portion of the report, dealing mainly with pathological cases, has since appeared in the *American Journal of Insanity*, Vol. LXVII., No. 2, p. 317.

by means of which the individuality of any response to the stimulus words of the series may be determined. It is this measure of the individuality of the response that forms the starting-point of the author's suggestions for application.

For some time back the varying individuality (*resp.* egocentricity) in the reactions of different individuals to the association test has been observed, and in a vague way it has been possible to see a certain pathological significance in extreme individuality of response. The "normal" train of thought reacts in a "normal" way, the abnormal train of thought in an abnormal way, but it is only through such investigations as are here reported that any certainty can be reached as to what are "normal" and what are "abnormal" ways of reacting.

Individuality of response must to some extent be favored by richness of intellectual experience, so that there is not unnaturally a somewhat higher average of individual responses among educated than among uneducated subjects, but the variabilities in either group are so great that the authors do not feel justified in saying that education shows any specific tendency to increase the number of individual responses. On the other hand, it seems that the individuality of response is much increased in various forms of mental disease, and that also the presence of somewhat less abnormal reaction types may be indicated in an unusual tendency to individual association. Ordinary experience would perhaps enable one to guess such a condition, but the given tables enable one to check and measure it in the objective and quantitative way.

Too much stress can not be laid upon the reduction of the association test by these frequency tables to the bases of a thoroughly empirical standard. It may of course be objected that the infrequency of a response is not a criterion of individuality, since a "common" response might still be the product of highly specialized experience. In single observations this factor might be more serious, but over a number of associations, the habitual tendency to react in an individual way can scarcely fail to lead to responses infrequent and non-existent in the tables, so that this difficulty proves more apparent than real.

For a knowledge of the practical results and applications of the method thus developed, it is necessary to await the continuation of the report. Meanwhile the frequency tables here published are a *thesaurus* of material in this experiment quite indispensable to the serious student of the subject.

FREDERIC LYMAN WELLS.

MCLEAN HOSPITAL, WAVERLEY, MASS.

A Critical Study of Current Theories of Moral Education. JOSEPH K. HART. University of Chicago Press. 1910. Pp. 47.

The author objects to most current systems and theories of moral education as being "external" and unrelated in any genuine way to a child's activities. These systems expect the child "to absorb ready-made ideas," *i. e.*, to become moral by being lectured to on morals. He finds the English ideal of "the corporate life of the school" more promising but contends that "no isolated concrete community, such as a school, can

fully represent the world of action to-day, and that, accordingly, the practise in social habits attained in such a community will not insure complete social functioning in the larger community of the world."

The concrete educational problem of to-day is stated as follows: "How shall we relate the various partial forms of educational activity of the present systems to the complete and concrete unity of the social process, so that these partial aspects of life shall be made to open out upon that world of complete human activity in which, alone, whether for education or for occupation, the individual can actually find the social support, coercion, and constructive criticism which give vitality and meaning to individual endeavor? How shall the implicit values of primitive education be restored in explicit form in the complicated world of the present?" The solution of this problem is indicated only in the most general way. From the standpoint of social psychology the aim of education is the development of the self. The following sentences seem to the reviewer the most significant part of the dissertation. "*The powers of the self have to be developed, through the development of a world calling for those powers.* The self reflects the world that it lives in, *i. e.*, that has risen into consciousness with it. Education has, accordingly, the problem of providing for such creative situations in the developing experience as shall insure the rise of the larger self, and the more inclusive world."

KATE GORDON.

MONTROSE, COLORADO.

JOURNALS AND NEW BOOKS

THE INTERNATIONAL JOURNAL OF ETHICS. July, 1910. *The Moral Ideal* (pp. 387-394): FELIX ADLER. - In consequence of the increased differentiation of society the moral ideal must be described as a perfect society instead of as a perfect individual. *Charity Organization and the Majority Report* (pp. 395-408): B. BOSANQUET. - A reply to the criticisms of the Majority Report by Professor Jones in the January issue of this JOURNAL. *The Classification of Ethical Theories* (pp. 408-424): JAY WILLIAM HUDSON. - A valid classification should exhibit (1) the fundamental problem of ethics, (2) the essential relations of historic systems to each other, (3) all logically possible systems. This fundamental problem is that of the ethical norm which is some form of ideal self. Hence a threefold classification according as the self is conceived in ideational, affective, or volitional terms. *Spencer as an Ethical Teacher* (pp. 424-437): H. S. SHELTON. - "Although, in the opinion of many, Spencer's additions to ethics will not rank so high as other parts of his philosophy, it would be difficult to find any modern thinker whose ethical work is more original, and more likely to be of permanent value." *Retribution and Deterrence in the Moral Judgments of Common Sense* (pp. 438-453): F. C. SHARP and M. C. OTTO. - A second paper giving the results of a study of the moral judgments of groups of students at the University of Wisconsin. No one consistently maintained standard was

found at the basis of these judgments. Most people will "demand retribution under one or another condition. But the majority do not demand it until the deed, including the attitude of the doer toward the deed, reaches a certain degree of repulsiveness." *The Moral Mission of the Public School* (pp. 454-470): CHARLES HUGHES JOHNSTON. — A discussion of the "Report on Moral Instruction and Training in Schools" edited by M. E. Sadler. The moral mission of the school is to induct the child "into social life by some sort of reproduced social activity. An understanding of modern complex social and industrial environment, with hygienic insight, idealized, will surely largely constitute our moral equipment." *Religion: a Luxury or a Duty* (pp. 470-481): NORMAN WILDE. — An analysis of the ethical implications of three types of religious theory: Pantheistic Realism, Theistic Realism, and Theistic Idealism. *Book Reviews*: A. W. Benn, *Revaluations: Historical and Ideal*: A. E. TAYLOR. Stanton Coit, *National Idealism and the Book of Common Prayer*: S. H. MELLONE. C. F. Dole, *The Ethics of Progress*: G. S. PATTON. Hans Driesch, *The Science and Philosophy of the Organism* (Vol. II.): M. LIGHTFOOT EASTWOOD. Benedetto Croce, *Esthetic as Science of Expression and General Linguistic*: F. MELIAN STAWELL. R. G. Bury, *The Symposium of Plato*: S. WATERLOW. Auguste Diès, *Le Cycle Mystique: La Divinité d'Origine et Fin des Existences Individuelles dans la Philosophie Antésocratique*: S. WATERLOW. Auguste Diès, *La Définition de l'être et la Nature des Idées dans le Sophiste de Platon*: S. WATERLOW. R. M. Wenley, *Modern Thought and the Crisis in Belief*: EDMUND H. HOLLANDS. Frank C. Doan, *Religion and the Modern Mind*. Bernard Pick, *Paralipomena: Remains of Gospels and Sayings of Christ*: NATHANIEL SCHMIDT. Henry S. Salt, *Tennyson as a Thinker*: W. J. ROBERTS.

- Claparède, Ed. VI^me Congrès International de Psychologie tenu à Genève du 2 au 7 Août, 1909. Rapports et Comptes Rendus. Genève: Librairie Kundig. 1910. Pp. vii + 877. 20 fr.
- Cunningham, Gustavus Watts. *Thought and Reality in Hegel's System*. Cornell Studies in Philosophy, No. 8. New York, London, Bombay, and Calcutta: Longmans, Green, and Company. 1910. Pp. v + 150.
- Ellwood, Charles A. *Sociology and Modern Social Problems*. New York: American Book Company. 1910. Pp. 331. \$1.
- Hobert, O. *La Religion de la Grèce antique*. Paris: P. Lethielleux. Pp. xxiii + 582. 4 fr.
- Kostyleff, N. *La crise de la Psychologie Expérimentale. Le présent. L'avenir*. Paris: Félix Alcan. 1911. Pp. 176. 2 fr. 50.
- Külpe, Oswald. *Erkenntnistheorie und Naturwissenschaft*. Leipzig: S. Hirzel. 1910. Pp. 47. 1 M. 25.
- Moore, Addison Webster. *Pragmatism and Its Critics*. Chicago: University of Chicago Press. 1910. Pp. xi + 283. \$1.20.
- Moore, Thomas Verner. *The Process of Abstraction. An Experimental Study*. University of California Publications in Psychology, Vol. I., No. 2. Berkeley, California: University Press. 1910. Pp. 73-197.

NOTES AND NEWS

T. WARD CLARKE contributes a suggestive note on the "Problem of Elemental Life" for *Science*, November 18. The note is inspired by the remarkable researches of Drs. Carrel and Burrows, of the Rockefeller Institute for Medical Research, into the growth of life tissues outside of the animal body. A preliminary notice of the results of these researches appeared in *The Journal of the American Medical Association* for October 15 and 29. We take the following from Dr. Clarke's account: "The experiments consisted in removing bits of tissue from mammals immediately after killing them, the most minute precaution being taken to procure asepsis, inoculating the tissue into a drop of plasmatic medium made from the same animal, sealing it in a hanging drop slide, placing it in a thermostat at 37° C., and observing the changes in the tissue by means of a microscope enclosed in a warm chamber kept at the same temperature. The results of the experiments were uniform. In every case after from one to three days, growth of the specimen was observed. After a period of quiescence, varying according to the nature of the tissue, granulations made their appearance at the margin of the tissue fragment, spindle and polygonal cells were formed and rapidly grew out into the surrounding lymph. The new tissue had many characteristics of the parent material; cartilage produced cartilage; spleen formed cells closely resembling splenic pulp; and, most striking of all, from the surface of bits of kidney grew cell tubules, replicæ of the normal kidney tubes. Once started, the growth went on with wild rapidity, the cells branching out in all directions, and the process continuing for days until the nutritive power of the plasmatic medium was exhausted, and then, when once stopped by inanition, immediately becoming reactivated upon reinoculation into fresh plasma. Furthermore, fragments of the newly formed tissue removed from the parent mass and placed in fresh media continued the same active prolific growth as before their separation, the second generation of cells closely resembling the first. The speed of growth of the tissues varied according to the nature of the material; cartilage began to grow after three days and progressed slowly; peritoneal endothelium and arterial sheath were also slow in starting and sluggish in progress; thyroid and spleen were more active, showing changes in from thirty-six to forty-eight hours; while in the case of kidney, proliferation was seen after twelve hours in the thermostat. Most interesting of all, however, was the behavior of tumor tissue. In their first article the authors report definite growth of a bit of chicken sarcoma after nine hours, and in the second publication a specimen of the same tumor had been actively growing two and one half hours after inoculation. Still another specimen of the same tumor, on being measured twenty-four hours after inoculation, was found to have increased in size fourteen fold, and after forty-eight hours twenty-two fold, the changes being plainly visible to the naked eye. It is impossible at the present time to esti-

mate the value of these observations. From the view point of the biologist the production of active manifest life—for where there is cell proliferation and growth there is manifested an active life process—is of infinite academic interest. From the philosophical standpoint a new factor is added to the great problem of life and death. To the mind of the experimental worker in medical science an entirely new field of possibility is thrown open for the study of cancer. Now that it is possible actually to see tumor cells grow and to study directly the various factors which stimulate or retard that growth, it is not extravagant to say that a gigantic stride has been taken toward the discovery of the cause of cancer and the ultimate goal of its prevention and cure.”

PROFESSOR CLAPARÈDE contributes a very appreciative account of Professor James to the September number of the *Archives de Psychologie*. The following tribute to the broad humanity of Professor James indicates how fully his personality was appreciated abroad: “En William James, ce n'est pas seulement un psychologue pénétrant, un profond philosophe que perd l'humanité, c'est un homme—un homme dans l'acception la plus haute, la plus intégrale de ce mot, un homme vivant, vivant dans la plénitude de son fonctionnement total, n'ayant abdiqué aucune des capacités ou facultés dont chaque homme a le libre usage, et cherchant même à réveiller, pour les mettre en valeur; les énergies potentielles sommeillant dans le tréfonds de notre être. Et cet homme, il est un de ceux qui l'a le mieux comprise, cette humanité, qui en a le plus profondément saisi, et surtout *sent* les aspects infinis, les formes multiples, les aspirations ardentes, quoique souvent secrètes. On ne saurait imaginer esprit plus large, plus tolérant, plus compréhensif, plus dégagé de toute pédanterie, de tout mesquin préjugé de classe ou d'école. Jamais l'opinion reçue n'est venue barrer son regard, voiler son horizon. Sa qualité dominante, d'où les autres découlaient tout naturellement, c'était son sens de la vie, de la réalité, et avant tout de cette réalité, qui est peut-être la seule, qui est du moins la seule à laquelle nous puissions atteindre, la réalité 'vécue,' la réalité humaine. Cette qualité, il l'a appliquée tour à tour à l'analyse psychologique et à sa conception de la vie, à l'étude de la pensée et à celle de l'action.”

THE Section of Anthropology and Psychology of the New York Academy of Sciences met on November 28 in conjunction with the New York branch of the American Psychological Association. There was an afternoon session held in the psychological laboratory of Columbia University, and an evening session at the American Museum of Natural History. The following papers were offered and discussed: “Practise Effects in Free Association,” F. Lyman Wells; “Drowsiness,” H. L. Hollingworth; “Mental Hygiene,” Clyde Furst; “Subjectifying the Objective,” D. S. Miller; “Secondary Qualities,” F. J. E. Woodbridge; “A Forgotten Pragmatist, Ludwig Feuerbach,” Robert H. Lowie.

THE JOURNAL OF PHILOSOPHY

PSYCHOLOGY AND SCIENTIFIC METHODS

REALISM A DEFENSIBLE DOCTRINE

THE realism I shall defend in this article is an epistemological doctrine. This doctrine concerns the relation which the object in knowledge sustains to our cognizing or judging consciousness; and this doctrine asserts that whenever we judge or acknowledge anything to be real, that object is not constituted and made real by our asserting or acknowledging consciousness; its realness is simply acknowledged, accepted, submitted to.

Now, obviously, it is indifferent to realism what may be the contents or whatness of that which is asserted to be real. This object may be psychical matter of fact, as the idealist holds, or it may be matter as the materialist maintains. Realism is as compatible with an idealistic theory of reality as it is with the opposing theory of materialism. Psychical beings are as real for the realist as are material beings, and real for the same reason. The mind of Robinson Crusoe, with its hopes and its fears, is as real as the rock on which this solitary man sat; and real for precisely the same reason, namely, this mind did not owe its existence and its character as real to any human mind which might have been thinking of him; and for that same reason was the rock real on which Robinson Crusoe sat. It would be no disproof of realism, could the idealist establish his ontological doctrine, that whatever is real is psychical matter of fact or experience. The sole issue between the realist and his opponent reduces itself to the question, Does that which is judged to be real depend upon the judging or the cognizing consciousness which thus knows it for its character as real? The realist answers this question in the negative; his opponent must maintain the affirmative. The matter at issue is the sort of relation which exists between a cognizing idea and its object. Does this object depend upon the idea for its character as real? The realist denies this sort of dependence; his opponent maintains it.

The only possible disproof of realism would be the establishment of the proposition, that whatever is real as object of thought and

knowledge, is real because it is made so by the mind which knows it. This disproof can be attempted in three ways.

The first of these attempts to disprove realism is made by Professor Royce in his truly great book, "The World and the Individual." This disproof is found in the third lecture in Vol. I. This lecture, as Professor Royce announces, is "devoted to a critical study of the realistic conception of what it is to be." Professor Royce's method of procedure is briefly the following: He first defines what he maintains must be the realist's meaning of reality, and then he so develops the necessary implications of this meaning, that the logical outcome is a conception of being which makes any intelligible relation of an idea to this being impossible. The realist is thereby reduced to absolute silence; he can intelligently say nothing about what he calls reality. Let us now see how this complete disproof of realism is effected; and, as far as possible in Professor Royce's own words. "Realism asserts that to be real means to be independent of ideas, which, while other than a given real being, still relates to that being." "Realism asserts that the mere knowledge of any being by any one who is not himself the being known, makes no difference whatever to that known being." It is this independence of being known which constitutes the realness of the being that is known. Now, according to Professor Royce, this independence is absolute; the object in the realist's doctrine of knowledge is in every respect indifferent to the knower; it sustains no conceivable relation to the idea that would know it; the two are a pair of absolutely unrelated, completely sundered beings. No change which might take place in either one of these beings can make any difference to the other being, save perhaps the difference between such a change being known or not being known.

Now, since the realist's cognitive idea is itself a being, as truly so as is the object of this idea, the realist must, if consistent, hold a pluralistic conception of the world, the necessary feature of which is that the many real beings exist in absolute indifference to each other; there being no relations which can conceivably exist between these beings, these individual beings can take absolutely no account of each other. Now, inasmuch as an idea or a cognitive process, if it be a fact at all, must be real just as the other beings are real, this idea or knowing process and its supposed object must be a pair of beings of which the same thing is true that is true of any two of the beings which compose this pluralistic universe. From which it inevitably follows that the realist's *idea* can take no account of that which is said to be its object; this idea can know nothing whatever. "The realistic theory, then, as we know, by its own explicit conse-

quences, and just because its real objects are totally independent of its ideas, has nothing to do with any independently real object; and has no relation to the independent external world that its own account defines." "No realist, as he himself now must consistently maintain, either knows any independent being, or has ever in idea found himself related to one, or has ever made any reference to such a being, or has ever formed or expressed an opinion regarding one, or in his own sense of the word real, really believes that there is one" (p. 136).

If this reasoning is sound, it must be admitted that it effectually disproves the doctrine of realism. The better to appreciate the seeming cogency and conclusiveness of this argument of Professor Royce, I will put it in the form of a syllogism; and as a syllogistic argument I shall then examine it. I can do so without any injustice to Professor Royce because it is his contention that he has *logically* disproved the realist's conception of being.

The syllogism will read as follows: The real beings of the realist are absolutely unrelated; no one of these beings can possess any knowledge of any other being. Now, the realist's cognitive idea and its object are a pair of such real beings: therefore this idea can not possibly have any knowledge of its pretended object. Now, of course, this syllogism is valid only if *both* its premises are valid. The propositions which form the premises of this syllogism should either be self-evident ones, or their truth should have been clearly and conclusively established. I shall show that this has not been done; Professor Royce has established neither of the propositions on which the validity of his argument against realism depends. His argument really commits the old fallacy of "*petitio principii*," paradoxical as this assertion may seem to my readers. Let us examine the major premise of this syllogism, in other words Professor Royce's conception of realism. When the realist says that the object in knowledge is independent of the idea which knows it, his meaning is that this object does not owe its existence and its character as real to the thought which knows it. The realist, rightly understood, denies only a certain sort of relation between the knower and the being that is known. The denial of this particular relation no more carries with it the denial of all other relations, than does the denial of a causal relation between two objects carry with it the complete unrelatedness of these objects; the relations of likeness, difference, time, space, means, and ends, may remain, if a causal relation is denied. The truth is, no realist who knows his own doctrine, maintains the sort of pluralism which Professor Royce assumes he must maintain. But even if the realist *did* hold such an ontology as Pro-

fessor Royce attributes to him, the consequence would not be what the argument of Professor Royce maintains, since the realist is not bound to accept the minor premise of this syllogism. What I maintain is, that the realist is not bound to accept either premise of this syllogism, and that if he does accept the major premise, he need not accept the minor; so that he can escape the fatal conclusion in any event. But, if our realist really knows his doctrine, he will accept neither of the premises of this syllogism. The many real beings in the pluralist's universe are not altogether unrelated, merely because they do not depend upon each other for their individual existence. *Why* can they *not* take account of each other, act upon each other, stand in all sorts of relations, the cognitive relation being one of them? What has Professor Royce done to establish the monstrous proposition, that the real beings of the pluralist are absolutely unrelated beings?

But, even supposing that this proposition *could* be established, there still remains the other proposition, the minor premise; and what has Professor Royce done toward proving this proposition? How has he shown that the realist's cognitive idea and its object are a pair of real beings in the same sense of the term in which any two beings in the pluralist's world are real? It seems to me this assertion is based upon an entire oversight or misapprehension of the nature of a cognitive idea and the character of the cognitive relation. Professor Royce appears to have confounded psychological existence with epistemological function. In its cognitive character or function, the relation between an idea and its object can with no propriety of speech be called a relation between two beings, such as may exist between two objects which this idea may know. The import of a cognitive idea is a judgment, a judging consciousness. Now, the relation between a judgment, a judging consciousness, and the object or matter with which that judgment deals, is not of the same sort as are the various relations which exist between real beings. A judgment, a judging function is not an entity, a being at all in the sense in which a pluralist regards his beings as real. This being the case, were it true that the beings in the pluralist's universe are absolutely unrelated, it would not follow that no relation can exist between the cognitive idea of the realist and the object of that idea.

I have said that Professor Royce has not offered any evidence which is competent to establish the minor premise of his argument; I should not, however, pass over his attempt to force upon the realist the fatal admission of this minor premise. Here is his reasoning: "I ask the realist: 'Is not your own idea itself a real being, or at least a part of one?' 'Come, let us reason together. If you, the realist, are a being independent of my idea of you, then are not

your own ideas a part of your own independent being?' " I am moved to ask, Can Professor Royce be really serious in this reasoning? He must be a dull-minded realist who is caught by such a sophism. As if the realist's ideas are a part of himself, as individual bricks are a part of the wall from which they are broken. Between a thinker and his thoughts there is not the same sort of relation as exists between a total object which this thinker may have in mind and a fragment or part of that object. The relation between a realist as a being and other beings can not be regarded as identical with the relation between this realist's ideas and these other beings; so to interpret the matter is, as I have shown, to misapprehend the character of the cognitive relation. My conclusion from this examination of Professor Royce's reasoning is that, so far as any argument he has produced goes, realism remains a tenable doctrine.

I turn next to the second attempt to disprove realism, which my readers will find in Taylor's "Elements of Metaphysics."

It is along two lines of reasoning that Professor Taylor seeks to disprove the doctrine of realism:

1. He attempts to show that the realist's doctrine is untrue because it contradicts the necessary character of what is real, and the necessary relation which reality sustains to cognitive consciousness.

2. The second line of reasoning aims to show that the realist's meaning of reality is self-contradictory, since he is compelled to define the unreal in the same terms in which he defines the real.

Taking up this first line of reasoning, I will first examine this alleged contradiction between the realist's object in knowledge and the necessary character of what is real. Professor Taylor maintains that the idealistic conception of reality which he thinks he has securely established in the sections of his book which precede the one which deals with realism, has itself disproved any such conception of reality as the realist is bound to maintain. Now, even granting that Professor Taylor has established his idealistic proposition, that whatever is real is psychical matter of fact, I do not see that he has disproved realism, which, as I have shown, is quite as compatible with an idealistic ontology as with the ontology which maintains that some reality at least is non-psychical in content. If Professor Taylor admits the reality of finite minds or finite consciousness, and that a cognitive relation exists between these finite real-beings, his idealism is in itself no disproof of realism. Professor Taylor would not say, because the minds of my human fellows are in their content psychical matters of fact, and as such are real, that they must in any sense depend upon my mind if I am to have knowledge of these minds. Surely they must be present in some way to my ex-

perience if they are to be my known realities; but *how present*—as depending upon my experience for their existence as real? Hardly so. Well, the realist denies no more dependence than would Professor Taylor in the case of knowing the minds of our human fellows. I think it still remains for Professor Taylor to clearly show that realism contradicts the idealistic conception of reality, even admitting the truth of that conception.

Nor is it at all apparent to me that Professor Taylor is more successful in his second line of reasoning, which attempts to involve the realist in fatal self-contradiction. This is his method in dealing with the realist: "Can you think of sheer unreality otherwise than as that of which no mind is ever aware, of which no purpose ever has need to take account as a condition of its fulfilment?" Having got, as he supposes, the only possible answer to this question, Professor Taylor proceeds to draw the fatal net about the unsuspecting realist in this wise: "To think of it (unreality) is to attribute to it as its definition precisely that independence in which the realist finds the mark of ultimate reality"; in other words, the realist is made to define *unreality* in precisely the same terms as those in which he is supposed to define *reality*; and this is fatal to his doctrine. Now, I can not think it should be difficult for a realist to escape a snare so openly spread before him. He has but to make *this* answer to this crucial question: "I do not judge that something is unreal *because* no one is or can be aware of it, and because no purpose can take account of it; I judge something to be unreal because it contradicts that which I have already accepted to be real, because it lacks the necessary qualities or marks of that which is real. What is unreal is not unreal because, as you appear to assume, no one is aware of it, and no purpose can take account of it; the truth is, rather, that no one is aware of this something, because it *is unreal*. I do not, therefore, define what is unreal and what is real in the same terms; and your effort to entangle me in self-contradiction is quite futile."

I can not see that Professor Taylor has been in the slightest degree successful in his attempt to disprove realism. So far from this being the case, it is not difficult to find in his own doctrine much that reads very like a substantial confession to the creed of realism. Let the reader who cares to do so, note the following passages, which I think, taken in their contexts, go far toward justifying my statement. I will ask attention to a few of these statements, which, I contend, can hardly be interpreted so as to avoid a distinctly realistic meaning.

On pages 54 and 55 we read as follows: "Presence in immediate experience is a universal character of all that is real, *because* [italics

are mine] it is only in so far as anything is thus presented in immediate unity with the concrete life of feeling that it *can be given as a condition or fact* of which an individual *interest must take account* on pain of not reaching accomplishment." Now, will Professor Taylor tell me in what other terms need a realist define his *object* in cognitive experience? Can that which is declared to be a given condition or fact, on the taking account of which depends the realization of a purpose, the satisfaction of an interest, be otherwise thought of than as something which does not owe its being, its *esse*, to the mind that thus takes account of it?

Again, on page 55, it reads: "To say that reality is essentially one with immediate feeling, is only another way of saying that the real is essentially that which is of significance for the attainment of purpose." And on page 56 we are told, that *that* is real on which we are "*constrained* to take account for the fulfilment of our purposes." Now, can we be constrained to take account of anything as an objective condition on the due taking account of which depends the accomplishment of our purposes, if at the same time it is true that this same constraining condition is itself constituted or determined to be what it is by the mind that is constrained to take account of it?

Once more, take the concrete case which is given on page 56: "Suppose that some purpose of more or less importance requires my immediate presence in the next town. Then the various routes by which I may reach that town become at once circumstances of which I have to take note, and *to which I must adapt my conduct*, if my important purpose is not to be frustrated." "For simplicity's sake we will consider the case in which there happens to be only one available way. This one available way is real to me as contrasted with the infinity of mathematically possible routes, precisely because the execution of my purpose restricts me to it and to no other." The various other routes, we are told, are possible routes—not real routes—because, "no purpose compels me to adapt myself to their peculiarities or fail of my end." Now, it would seem that whatever sustains this sort of relation to our experience or our consciousness, can not in any conceivable way owe its reality to that consciousness or purpose which it thus objectively determines.

I think it is a fair conclusion from these passages that Professor Taylor has himself, unwittingly of course, accepted the realist's doctrine. And if this inference is fair, the conclusion of the whole matter as regards Professor Taylor would appear to be, that he has done rather more toward confirming the doctrine of realism than toward its disproof.

This brings me to a brief examination of the third alleged disproof

of realism. This attempted disproof moves along strictly epistemological lines. In substance it is the following: Realism is not true, because it leads to scepticism or complete agnosticism. For, if the object be what the doctrine maintains, then knowledge must consist in getting somehow a copy of this object, by an idea to which this object is essentially alien or indifferent. Whether this relation be conceived as one of copy to an original, or as agreement or symbol, it comes to essentially the same thing; there is a separation between knowing idea and known object; they are so far different that no examination of the idea can make us certain that it knows its separated and alien object. Only a mind to which both our idea and its object could be really present could tell whether a given idea in our minds was true or untrue. But for us there is no such means of ascertaining whether or not any idea which seeks correspondence with reality does so correspond. Nor have we any indisputable criterion or test of truth in the case of any idea which seeks knowledge. The admission of this fact is the confession of doubt. Now, I frankly admit that the realist's doctrine of knowledge does logically issue in this sort of scepticism. If this doctrine is true, there is no absolute certainty of truth regarding any matters of fact which transcend immediate experience. But, is the situation really otherwise with the idealist's doctrine? I think not. Idealism, no more than realism, saves us from philosophic or theoretical doubt.

I have not space in this article fully to establish this proposition; I will only in outline state the argument which I think will establish it. For idealism as for realism, in the last analysis the essence of knowing or the cognitive process is essentially the same; it consists of the interpretation of experience, the experience being the given, the here and now indisputably real. Now, the essence of this interpretation is, first, to conceive the matters of fact, whatever they are, in a certain way; and secondly, to deduce from this conception the sort of experience which should be actual, if the conception is a true one; and thirdly, to verify this conception by the agreement between its deduced experience and actual experience—our own individual experience and the experience of all other minds. The only available test of the truth of a conception is that it works well, both in making the individual's experience coherent, harmonious, and satisfying within itself, and harmonious with the experience of other individuals. Now, while a high degree of probable truth is attainable—a probable truth that is practically satisfying, as good for practical purposes as complete theoretic certainty—it remains always possible that reality may be other than our thought conceives it. Only the absolute mind can be free from this possible doubt.

THE OBLIVESCENCE OF THE DISAGREEABLE

STUDENTS of language tell us that human speech has produced a much greater number of names for unpleasurable emotions than for pleasurable. Whether this is due to an actual superiority in the number of unpleasant forms of feeling or to the power of unpleasant experiences to attract a higher degree of attention we are not told. According to Wundt¹ a full explanation would probably involve both factors. However this may be, the fact itself suggests a principle of the life of feeling which seems to the writer to have received inadequate appreciation in attempts at a philosophy of conduct. Mark Antony's lines,

"The evil that men do lives after them;
The good is oft interred with their bones,"

have passed unchallenged in many a subsequent elegaic. Specific illustrations of the sentiment are no doubt abundant, but the lines are psychologically false. The true process, which we have here called the oblivescence of the disagreeable, is a far-reaching one, and is exemplified on every hand.

With respect to their quality in anticipation and in retrospect, pleasures and pains show certain radical differences, and upon these differences are based the tendency of much pedagogical practise and the character of many social institutions. In anticipation, it is clear, pleasures, as compared with pains, are relatively weak and colorless, while in retrospect the situation is completely reversed. Painful experiences, once survived, tend to dwindle into mere memory images, or may even undergo a transformation of feeling tone, becoming humorous or agreeable in retrospect. The discomforts of mountain travel "are almost always funny as you look back on them," says Stewart Edward White.² Mark Twain, in the concluding chapter of "Innocents Abroad," remarks the same tendency: "Nearly one year has flown since this notable pilgrimage was ended; and as I sit here at home in San Francisco thinking, I am moved to confess that day by day the mass of my memories of the excursion have grown more and more pleasant as the disagreeable incidents of travel which encumbered them flitted one by one out of my mind."

Every one has seen his own stage frights, social predicaments, and financial embarrassments turned into comic situations by the coming of "the morning after." Either of two things may be seen to occur here. Sometimes the whole experience, which had a dis-

¹ "Outlines of Psychology," p. 200.

² "The Cabin," *American Magazine*, June 10, 1910, p. 248.

agreeable affective tone while being lived through, becomes amusing when we objectify it and look back upon it from the point of view of a spectator. Or again, the disagreeable features become curiously faded out, and only such agreeable features as were originally present, but subordinated, survive vividly in memory. And this agreeable element, as is the habit of all pleasant experience, is intensified and vivified far beyond its original quality. The law is general; the disagreeable, once lived through, oblivesces; the agreeable becomes enriched, magnified, and embellished with tone and color that it did not originally possess. Mark Antony notwithstanding, the good that men do to us still lives after them. Their evil is unwittingly, but inevitably, buried.

The canonization of saints, the apotheosis of strenuous historic characters, the obituaries of our friends, the reminiscences of childhood, all testify to this natural and universal habit of forgetting the bad and exalting the good. "Distance lends enchantment" if the stretch is back through a region of memory, but for a cast into the future the maxim is a disappointment. The "moss-covered bucket" and "the house where I was born," the days on "the old homestead" "when father was a boy," the playthings of infancy, the sweethearts and small adventures of adolescence, the athletic feats of college days,—all owe their reminiscent glory to the operation of this law of oblivescence. And evil take that mechanical realist whose prosaic memory enables him to parody and reduce to comic situations our retrospective revels in "the days of auld lang syne"!

Only through unusual philosophic effort is a prospective Utopia ever portrayed. A writer in the *New York Sunday Times*³ once wrote trenchantly of this instinct: "Most hopelessly ineradicable is the belief that just behind us, not just before nor just about us, lies the Golden Age. Behind us are Adam and the Garden. Behind us are the saints. . . . Cheap politicians in Downing Street, trust tools and wild-eyed incendiaries in Washington, a self-advertiser on the German throne. Nothing much doing to-day. Ah, but look back of you, just back! You don't need to look more than fifty years; that is almost time for the gold-platers to get done their never-ending work, their many-thousand-years-old work; the work of making any age into a Golden Age, any man into a god." The only error in this anonymous paragraph is the implied note of censure. The tendency to idealize the past is a human instinct, not a current fad. An instinct depends upon a physiological mechanism, and this instinct is ineradicable just because it is a function of the nervous organization off all the forms of life that possess even the most rudimentary consciousness.

³ For June 12, 1910.

Colegrove⁴ studied by the questionnaire method the early memories of nearly two thousand men, women, and children of the white, black, and red races, ranging from three to eighty-five years of age. The results, when platted, form a series of interesting curves showing for all ages, sexes, and colors the great predominance of pleasant memories over unpleasant. With women the unpleasant recollections seemed to have a somewhat larger share than with men, and this fact correlates well with other rather distinct characteristics disclosed by studies of sex differences in mental traits. But the pleasant reminiscence, with both men and women, was still strikingly in the lead. Even in dream life the revived agreeable experience retains its superior vividness. The famous physiologist, Burdach, made the observation that joyful dreams waken the sleeper much more often than dreams of an opposite type. That which we have suffered ourselves "has no longer the same air of monstrous injustice and wanton cruelty that suffering wears when we see it in the case of others," wrote Stevenson⁵ in a letter to William Archer.

Names originate for objects of immediate perception, for experiences which can be socially shared, since the chief function of words is to facilitate communication. And since pains, which have such feeble memory images, possess, both in prospect and in immediate experience, a disproportionate vividness, the greater variety of names for unpleasant emotions is easily understood. If primitive communication dealt chiefly with objects of memory instead of with objects of immediate experience, the law of oblivescence would lead us to expect the reverse proportion.

In the early adaptation of the organism to new situations, in the training of animals, the teaching of children, and in the acquisition of any new act of motor skill, the principle of oblivescence is fundamental. In any process of learning, movements that miss the goal or result in dissatisfaction leave no trace in the nervous system, are forgotten, or are dissociated from the stimulus that once provoked them. But responses that result in success or that yield even a secondary satisfaction become, by virtue of that very ensuing glow of pleasure, reenforced or fixed in the nervous system, and are more likely to recur in the presence of the original stimulus. By utilizing this law the stupidest animal can be taught to perform feats that simulate intelligent behavior. Play upon the nervous mechanism with apples or bits of sugar, rewarding the desired movement with the sweetmeat, then this movement, once thus reenforced, tends to occur again and again in the accidental and random behavior of the animal, while unrewarded or punished responses are automatically eliminated and forgotten.

⁴"Memory," p. 255.

⁵"Letters," p. 438.

Or place the animal in a cage or maze from which he can escape only by manipulating a certain catch on the door or by performing a definite series of movements which leads him to the only open exit. Outside the prison, but well within the animal's vision, place food or some other article possessing the power to set up vigorous appropriative action. In experiment after experiment the same history is repeated. After much excited, random, and useless effort, the right movement *happens* to be made, and the captive liberates himself and secures his food. The next day random attempts are again indulged in, but many false movements have dropped out, and the successful one is hit upon much more quickly than before. So day after day the futile acts are gradually eliminated, dissociated from the stimulus, while the act which brings reward and pleasure is fixated and re-enforced. It is in much the same way that we learn to shave ourselves with safety. Thus we teach our pets to perform and our offspring to talk, to read, and to follow the path of virtue.

Summer after summer the watermelon patch serves as a positive stimulus to the predatory instincts of youth. The only controlling factors in a given temptation are the memories of escapades gone by. Last summer's expedition had two results, an immediate gustatory satisfaction after the successful raid, and a subsequent punishment administered at home when the theft was discovered. This summer all the parental whippings of a season fade into schematic memories before the joyful recollection of that one nocturnal feast. In the moment of experience, the pain may have been a hundredfold more intense than the pleasure, but, in retrospect, the law of oblivescence has completely reversed the order. Only the threat of another whipping which transforms a painful memory into a dreaded anticipation can serve to restore the moral value of the two incentives. The case could easily be developed to illustrate the superiority of reward over punishment as an instrument of correction. Anticipated pleasures and remembered pains both suffer underestimation.

The neural basis of this law is clear in its rougher outlines only. Disagreeable stimuli are those which reflexly provoke retractile, inhibitory, or interfering motor responses, and these mean suppressed nervous activity, restricted circulation, decreased muscular tonus. As a consequence nervous pathways open to incoming or outgoing impulses are blocked or have their resistance raised. A given stimulus will then make a relatively weak impression. Pleasurable stimuli, on the other hand, not only depend on, but in turn provoke, expansive motor responses, and this means increased cerebral activity, accelerated circulation, heightened tonus, and a lowered resistance of the synapses which constitute the brakes of the nervous mechanism. This resistance being lowered, not only will a given impulse effect

easier entrance to the higher levels, but, the appropriate brain centers once being set into activity, adjacent centers, already overflowing with aimless nervous energy, will all discharge into the path thus opened for them. The result will be not only a relative intensification of the stimulus, but a reenforcement of the path through which it came and of the central connection through which the sensory impulse became transformed into a response. This nervous process results, in terms of our accompanying consciousness, in the fundamental law of the oblivescence of the disagreeable, and in its correlate, the persistence of the pleasant. The act of learning is thus analyzed into a process of trial and error, and the acquisition of skill is due to the fixating power of the pleasure tone coming from more or less accidental success.

But the law of oblivescence extends far beyond these rudimentary educative performances. Only through its operation is rendered possible much of the satisfaction yielded by works of art, notably by painting, poetry, and descriptive literature. Why are we charmed by a scene on canvas which would scarcely attract attention, or might even repel us, if it should actually occur on the pavement? Obviously because the disagreeable features which a photographic realism would be compelled to include have escaped the artist and are neglected in our own interpretation. I recall a cold windy day on Broadway and a little episode that particularly suggested this law to me. Two hats had blown off in the crowd and one owner succeeded in recovering what he supposed to be his property. He was at once pursued for half a block by the other man and accused of appropriating the wrong head-dress. Rough words, argument, proof, and final chagrin ensued. Meanwhile the street boys were encouraging the leeward progress of the second hat by the most damaging methods, abetted by the grin of the traffic policeman. A promising subject this for the canvas of some American Jan Steen. The forgetability of the unpleasant would eliminate the sting of the wind, the bitter cold, the dust, the noise, the crowded street, the odors from the subway, leaving on the canvas only the comic and suggestive elements. But the event occurred on the pavement; the disagreeable afternoon's walk was too recent to be a memory, and I argued in vain with my companion that the scene contained artistic possibilities. "The Song of the Lark," "The Angelus," or any picture of peasants, of toil, of landscape, or of battle, without the aid of this transforming principle, would lose much of its unity and halo. Similarly, when Isaac Walton invites the traveler to sit with him "under the mulberry hedge until the shower passes," the reader's imagination conjures up a pleasing picture of verdure and the greensward, in utter disregard of the anthills, the mud, and the water trickling down the

traveler's neck. How often do I recall the "grassy meadows" of my boyhood or admire the cool green spots of them portrayed in water-color! But how much oftener have I sought throughout those cattle pastures for a patch where one with only temperate instincts of cleanliness could rest awhile in comfort!

Professor Freud^a has recently pointed out the far-reaching operation of the deeply rooted tendency to suppress or escape from ideas that can arouse painful feelings. As a result of this "elementares Abwehrstreben" the disagreeable not only oblivesces, but carries with it other ideas or experiences which may be associated with it in the most accidental or formal way, through similarity of word clang or contiguity in time. Working on the hypothesis of such associational suppression, Freud has been able to gain valuable insight into the mechanism of many a curious abnormality of daily life, such as errors or failures of memory, mis-speaking, awkwardness, false judgments, superstitions. The fundamental fact back of all this is that the disagreeable does oblivescence to a more striking degree than the pleasant. When this oblivescence is occasioned by voluntary, ethical, or pedagogical suppression it may lead to more or less grave disturbances of normal functions. When it is occasioned by the natural fading due to its own distastefulness the consequences are much more comfortable.

In art, in pedagogy, in penal procedure, in long-deferred criminal trials, and in daily life, the principle is everywhere apparent. Even in reasoning, the gratifying confirmatory instance sticks in the mind, while the negative cases all go glimmering into oblivescence. Human nature is intrinsically idealistic, hedonistic, indeed. So is all life, for that matter, and organisms are selected for survival on that basis. Reproductive imagination must so transform events that have passed that future action and effort will be stimulated rather than inhibited. The disagreeable must oblivescence if future good is to be realized, and those organisms survive in which the transfiguration most effectually takes place. The oblivescence of the disagreeable must ever remain a controlling law of conscious behavior, and its significance in the process of selection for individual and race survival could be emphasized in great detail. So long as affective tone is potent to determine the desirability of a stimulus or the appropriateness of a reaction, so long will this principle of the life of feeling remain an incentive to youth, a comforter to the senile, a guarantee of the worth of the future, and a constant exhortation to hope and renewed effort.

H. L. HOLLINGWORTH.

COLUMBIA UNIVERSITY.

^a"Zur Psychopathologie des Alltagslebens."

REVIEWS AND ABSTRACTS OF LITERATURE

The Duty of Altruism. RAY MADDING MCCONNELL. New York: The Macmillan Company. 1910. Pp. 255.

The task which this book undertakes is that of finding the ground of obligation for altruism. Various attempts which have been made by others are considered and rejected: the attempt of theology to find the basis of obligation in God's will; that of metaphysics to find it in *a priori* principles, such as "the categorical imperative" or "the absolute good"; the attempt to find it in the conceptions of law and custom; the attempt of logic to show that altruism is a rational deduction from the desirability of the welfare of the individual; and the attempts of physiology, psychology, and evolutionary theory to furnish a ground for altruism by showing how it has developed in the individual or the race. The first eight chapters of the book are concerned chiefly with the exposition and criticism of these rejected theories. The last three are devoted to the unfolding of the author's own doctrine, in which he acknowledges the influence of Schopenhauer, Paulsen, and Westermarck. Human obligation, he maintains, can have its source only in "the good for man"; this is "a good affirmed by man's nature, that is, by his own will." Reason can not issue commands to the will; it can only show us the best means of realizing the will. "My will is my nature; and I will live and must live according to my nature." This doctrine the author carries out in strict individualistic fashion. "Every person" has "an ideal of his own," and this "must be for him the final authority. Human natures differ, and their circumstances differ; and consequently their ideals differ" (pp. 202 f.). "Fullness of life" is the author's ideal; it is also, he thinks, that of most men and may thus be called the normal human ideal. But those who hold it have no right to criticize others for cherishing a different one. "Your ideal is as good for you as mine is for me. . . . An ideal means simply *what is willed*" (p. 208). And instead of asking what the individual *ought* to will, we should ask merely what he *does* will.

When we consider the problem of altruism from this point of view, we get the following result. We can not say that men *ought* to regard the welfare of their fellows, but we observe that many men *do* regard it. In fact, most men do not ordinarily distinguish between their own good and that of others. The normal ideal—"the will to live the largest life"—leads naturally to this result. The normal man, then, has what we may call "a good will." It is not true that evolution and education gradually convert egoism into altruism, but rather that the natural man loves his fellows. Egoist and altruist are alike abnormal: both distinguish between the interests of the individual and those of his fellows, the egoist preferring his own interests and the altruist those of others. Finally, the will and its ideal are incapable of changing. "The bad man is bad from birth" (p. 197). It is of no use to try to alter a bad will; all that we can do is to give naturally good, but obstructed, wills a chance to develop.

Dr. McConnell's book is interesting and valuable. His expositions of

other theories are clear and his criticisms keen and, in the main, sound. His own theory is presented attractively and persuasively, but the argument for it is not altogether convincing. He is, indeed, right in asserting that obligation has its source in the good, that *good*, rather than *duty*, is the fundamental concept. And his theory that both altruism and egoism are extremes, which are opposed to the normal tendency to identify one's own interests with those of one's fellows, contains a valuable suggestion. But when he makes the good merely the product of the individual will, many will hesitate to follow him. For the theory is at variance with the essential meaning of morality. The heart and soul of the moral consciousness is the conviction that the good is something deeper than the will of any individual. It is true that an ideal which arouses no response in my nature is powerless to influence my conduct. But in emphasizing this, Dr. McConnell overlooks the equally important fact that the ideal which does arouse such response is—often, at least—felt by me as something supra-individual. Apparently, what Dr. McConnell would have us believe is that, although as a matter of fact most persons *do* identify their own interests with those of others, it is *no better* to do this than to distinguish between the two sets of interests and invariably to prefer one's own. No one mode of conduct is intrinsically better than another; no end higher than another; no possible result of evolution more desirable than another. But to say this is to run counter to the fundamental moral convictions of men. Morality involves the assumption that some ends are, not simply preferred to others, but preferable. And this, as Aristotle showed long ago, leads to the assertion that there must be some end which is desirable in itself. We must, then, either say that the fundamental moral convictions of men are quite mistaken or must assume that there is a supreme end.

Another point which I should question is found in the author's contention that, since the will of each individual is intrinsically incapable of change, there is no meaning in saying that one ought to be different from what one is. In the first place, I should urge that if there is a supreme end, then—whatever you may think about the power of the individual to alter his nature—there is still a meaning left for the word *ought*; for we can still say that certain modes of conduct and certain types of character are better than others. In this sense, what under present conditions *can not* be, we might still say *ought* to be. And in the second place, we should be cautious about asserting the impossibility of change in the fundamental direction of the individual will. A curious kind of fatalism reveals itself in this tenet of the author. He seems to conceive of personality as having a central core of being which is utterly unchangeable from birth to death, impervious to influence of any sort. And this is, to say the least, a large assumption. Granted that "a bad man can not be reached and converted [solely] through the intellect," that "there is no hope" of persuading egoists "by [mere] appeals to reason" (p. 247), does it follow that the bad man, the egoist, can not be reached and converted in any way, that the will is incapable of responding to the appeal

of another will? If this be so, we ought not to say that, except in the case of moral perverts, there are any "bad wills." The man who seems to be an egoist of the egoists may, after all, have a good will which has not yet come to clear apprehension of its ideal. Dr. McConnell seems to distinguish between moral perverts and egoists and to say that both are incurable (pp. 245, 247). But in view of the fact that many apparent egoists have been "converted" he is hardly justified in saying that any "egoist" has a fundamentally bad will.

ELLEN BLISS TALBOT.

MOUNT HOLYOKE COLLEGE.

Anti-Pragmatism: Author's Translation from the French with Appendices. ALBERT SCHINZ. Boston: Small, Maynard, and Company. 1909. Pp. xx + 317.

This JOURNAL of May 27, 1909, contains my comments on the original edition of these essays. The translation has a brief introduction and a new appendix consisting of "Answers to Some Criticisms."

The author complains now of not having been taken seriously, and again of not having been taken at all. The first point in his "Answers" is that there has not been criticism enough; that there has been too much of "the argument of silence." However, he it said for the author's modesty that he does not charge this "silence" to his own unanswerable argument. He seems to think that his readers could "talk back" if they only would.

As for my own voluminous contribution to "the argument of silence," frankly I must confess that so foreign is the author's whole standpoint and world to, what seems to me, the universe in which we are now living that I am unable to take it very seriously or to deal with it systematically. Historically it is interesting as a specimen of a belated effort at consistent intellectualism. And the clear and vivacious style makes it good reading. But the result is what Professor James calls "a sociological romance." An attempt at general and systematic refutation would be as quixotic as a systematic critique of the *Civitate Dei* or the *Summa Theologia*.

How is it possible to take seriously, however seriously it may take itself, a book which teaches *in this day and part of the world* that "truth has nothing to do with life"; that "knowledge should be kept from the masses" (why so, "if truth has nothing to do with life"?); that "the masses have rights but no duties"; that "from the social point of view the false is preferable to the true" (how so, if "truth has nothing to do with life"?); which sanctions pragmatism as a conception of life but condemns it as philosophy; which believes that the scientific spirit "causes all the actions of men to be seen in a deterministic light; and is therefore capable of destroying the spirit of initiative and renders inconceivable the voice of conscience as it is commonly interpreted"? (p. 205). (Yet "truth has nothing to do with life"!)

How is it possible to deal systematically with writing which after a valorous defense of pure thought, pure truth, and pure science from the

attacks of moralists, social reformers, and pragmatists blandly states that nevertheless "truth is discouraging (though "truth has nothing to do with life") and it is from the outside, from religious revelation alone that comfort can be brought to us"? (This JOURNAL, Vol. IV., p. 435.) As if this revelation itself could be anything else than additional "truth," in the author's sense of truth; and as if such a statement were not a confession that this pure thought, pure truth, and pure science, whose banner has been so heroically defended, is not only "discouraging," but since it must be supplemented from the "outside" (outside of what?) by "religious revelation" is therefore fragmentary and not strictly pure after all; and as if, since truth *as such* is "deterministic," this supplementary truth revealed from the "outside" could be any less "deterministic" than that we already have; as if, indeed, as coming from the "outside" it must not be much more so.

In the next sentence the author finds comfort in reflecting that while he may be "naïve" (according to some of his readers) he is "at least in good Christian company." Some, however, may wonder how much comfort the company of Christians will take on discovering that one of their number teaches that in so far as their doctrines are "true" they are "deterministic" and "discouraging."

The source of these and any number of other variations of the same fundamental paradox is the total failure to see that the proposed cure for the alleged opposition of scientific truth and morality, namely, "revelation from the outside," is one of the chief causes, indeed a most aggravated form of the disease itself. A purely revealed truth, a science consisting of an accumulation of facts and laws rained down and collected as manna in the wilderness, is indeed "deterministic" and "renders inconceivable the voice of conscience." But how this is to be cured by more of the same thing, except on the homeopathic dogma of *similia similibus curantur*, is difficult to see.

And it would be in vain to protest that this point ignores the assumed essential distinction between scientific and revealed truth, since (1) there is nowhere any attempt at a statement of *what* this distinction is: and (2) in teaching that revelation is to supplement and make good the imperfections of "deterministic" and "discouraging" scientific truth the author himself abandons the distinction since this supplementation implies some sort of connection.

A. W. MOORE.

UNIVERSITY OF CHICAGO.

A Comparative Study of the Play Activities of Adult Savages and Civilized Children. L. ESTELLE APPLETON. University of Chicago Press, 1910. Pp. 83.

The author chooses for study five tribes, the Veddahs, Australians, Bushmen, Fuegians, and Eskimos, all low in culture but differing widely in race and environment. Their plays are classified in three ways. First as to somatic type, *i. e.*, as to whether the plays involve the use of the

large muscles of the body or whether they demand finer adjustments as of fingers or vocal chords. Secondly the plays are classified from the standpoint of organization, and thirdly from their psychological type, *i. e.*, as to whether their attractiveness depends on sensation, rhythm, mimicry, rivalry, etc. The general conclusion is reached that "the play of the savage tribes studied and the play of civilized children *do not run in parallel lines*. All the elements which appear in savage play reappear in that of civilized children, but in some respects the resemblances are very striking, while in others the differences are very great." The number and variety of games is greater among children; also "a new element disclosed itself in children's play, with the appearance of 'teams,' 'gangs,' and 'societies,' namely, organization of the group into *permanent relations* for purposes of play. We find nothing whatever of this in any of the five tribes studied."

The author next attempts to discover whether "the play of savages corresponds to any part of children's play, to any particular type, or to any particular period of ontogenetic development." She finds in the play of savages somatic activities and emotional intensity which characterize civilized children between the ages of six and twenty-three. The form of organization for savage play corresponds nearly to that found in the children's play in the period from six to twelve or thirteen, and the intellectual play is comparable to that of civilized children of six to eleven years.

The monograph presents interesting material and is well written. It concludes with a discussion of the theory of play.

KATE GORDON.

MONTROSE, COLORADO.

JOURNALS AND NEW BOOKS

REVUE DE PHILOSOPHIE. July, 1910. *La connaissance de dieu chez saint Bonaventure* (pp. 5-19): G. MENNESSON. - We come to knowledge of God through three steps: (1) perception of the world of nature, since the cause is seen in its effect, and the wisdom of the creator in his creation; (2) contemplation of the image of God which he has placed in our souls; (3) final mystic elevation towards him who from on high rules throughout eternity the universe of bodies and souls. *L'absolu, étude historique* (pp. 20-45): C. HURR. - In the philosophy of Comte the absolute, although not recognized as existent, is found in the eternity of nature and the necessity of her laws; in the thought of Hamilton the absolute is not only non-existent, but unthinkable; for Mill the absolute is cause; for Spencer the absolute is the unknowable; in the thought of Renouvier likewise the absolute is the unknown and unknowable. *L'éducation de la responsabilité* (pp. 46-61): G. BERTIER. - It is necessary that early in the life of the child we develop in him the consciousness of responsibility. *Revue critique d'histoire de la philosophie antique (deuxième article)* (pp. 62-84): A. DIÈS. - Reviews of ST. GEORGES STOCK'S *The Eutyphro of Plato* and *The Ion of Plato*; RITTER'S *Platons Staat*

and Platon. *Sein Leben, seine Schriften, seine Lehre*; GOEDECKEMEYER'S *Die Reihenfolge der Platonischen Schriften*; STÜBE'S *Plato als politisch-pädagogischer Denker*; JENSEN'S *Demokrit und Platon. Les cours et conférences de la revue de philosophie* (pp. 85-89). Cour de M. PEILLAUBE sur *La Vie personnelle de l'esprit*. In his opening lecture M. Peillaube showed the necessity for philosophical studies on the part of Roman Catholics. Succeeding lectures pointed out that the spiritual life is essentially a spiritual life. *Analyses et comptes rendus*: J. Walker, *Theories of Knowledge*: F. CHOYET. Drs. P. Mennier et R. Masselon, *Les rêves et leur interprétation*: R. VAN DER ELST-GAUME. N. Ach, *Ueber den Willensakt und das Temperament*: J. BRUNEL. A. Fouillée, *Le socialisme et la sociologie réformiste*. L. H. G. Greenwood, *Aristotle: Vicomachean Ethics. Book Six*: P. D'HÉROUVILLE. *Recension des revues et chronique*.

Mumford, Edith E. Read. *The Dawn of Character. A Study of Child Life*. London, New York, Bombay, and Calcutta: Longmans, Green, and Company. 1910. Pp. xi + 225.

Schiller, F. C. S. *Riddles of the Sphinx. A Study in the Philosophy of Humanism*. New and Revised Edition. London: Swan Sonnenschein & Co.; New York: The Macmillan Company. 1910. Pp. xxvii + 478. 10 s.

Sewall, Frank. *Swedenborg and the "Sapientia Angelica."* New York: Dodge Publishing Co. Pp. 331. \$1.

Sissons, Edward O. *The Essentials of Character*. New York: The Macmillan Company. 1910. Pp. x + 214. \$1.

Vaschide, N., et Meunier, Raymond. *La psychologie de l'attention*. Paris: Bloud & Cie. 1910. Pp. 198. 3 fr.

NOTES AND NEWS

At the meeting on November 7 of the Aristotelian Society, the president, Mr. S. Alexander, gave his address on "Self as Subject and as Person." The object of the paper was to distinguish the different senses of the self. In the "person" two elements are present, one the subject-self, the other the bodily self. The subject is consciousness, and it is distinguished from external things, of which the body is one, as something which is "enjoyed" while they are "contemplated." This is a distinction of a purely experiential character. But consciousness and the body are not merely conjoined in the person; for an examination of acts of consciousness proves them to have not only time-characters, but also spatial ones. Consciousness is experienced in the same place with the body, and its acts are continued outwardly in the form of movements. The unity of consciousness and a certain part of the body is established by experience, but it becomes more definitely understood, on the ground of our knowledge of the brain, as being a character of the neutral activities (a restatement,

it is suggested, of the Aristotelian view of the soul). The enjoyed consciousness or subject and the contemplated body are therefore not merely aggregated, but the one is continuous with the other. The subject being thus an enjoyed thing, and not a contemplated one, it is necessary to explain in what sense it can be said to be known, and this was the topic of the remainder of the address.—*The Athenæum*.

DURING the current month, Professor Dewey delivered three lectures at the University of Pennsylvania, on the George Leib Harrison foundation, on "The Problem of Truth." The subjects of the several lectures were "Why Truth is a Philosophical Problem," "Correspondence, Coherence, and Consequences as Marks of Truth," and "Truth as an Objective." Professor Royce will lecture on the same foundation in February on the topic, "The Nature and Accessibility of Absolute Truth." The subjects of the three lectures are "The Nature and Use of Absolute Truth," "Theoretical Truth and Practical Truth," and "The Ideal and the Accessible."

THE Cambridge University Press has undertaken the publication of a work entitled "*Principia Mathematica*," by Dr. A. N. Whitehead, F.R.S., and the Hon. B. Russell, F.R.S.; the aim of the work is to show the dependence of mathematics upon logic by deducing from purely logical premises the elementary propositions of various branches of mathematics. The first volume, on mathematical logic and prolegomena to cardinal arithmetic, will be published very shortly. The second volume, concerning the principles of arithmetic, is in the press. In the third volume the authors have dealt with measurement and the principles of geometry.—*Nature*.

ONE of the chapters in the latest volume of "The Cambridge Modern History" (published on December 8), dealing with "The Scientific Age," is written by Mr. W. C. D. Whetham, F.R.S., who has undertaken the important and difficult task of surveying the trend of modern science in all its various departments. In this chapter will be found considerations of the Darwinian hypothesis, of evolution and religion, of electrical invention, of bacteriological treatment of disease, and other phases of modern scientific progress.—*Nature*.

THE *Nation* of November 3 notices: "'A Guide to Reading in Social Ethics and Allied Subjects' is the title of a unique bibliography which has been prepared through the cooperation of more than twenty teachers in Harvard University. Each instructor has contributed a list of the more noteworthy books in his special field, and in almost every case has added a brief criticism or analysis. The book will be published by the university early in November."

DR. F. LYMAN WELLS, formerly assistant in pathological psychology in the McLean Hospital, has entered upon the duties of assistant in experimental psychology in the Psychiatric Institute of the New York State Hospitals, and lecturer in psychology in Columbia University.

INDEX

NAMES OF CONTRIBUTORS ARE PRINTED IN SMALL CAPITALS

- A propos d'un article de Mr. Walter B. Pitkin intitulé: James and Bergson.—H. BERGSON, 385.
- Aims of an Introductory Course in Philosophy, The.—EDGAR L. HINMAN, 561.
- ALEXANDER, ARCHIBALD B. D.—Jones's Idealism as a Practical Creed, 300.
- Paradox of Voluntary Attention, 291.
- Altruism, Egoism, Catholicism. A Note on Ethical Terminology.—EDWARD O. SISSONS, 158.
- American Philosophical Association, Ninth Annual Meeting of.—WALTER B. PITKIN, 38.
- Psychological Association, Eighteenth Annual Meeting of the.—M. E. HAGGERTY, 185.
- Analogy and Scientific Method in Philosophy.—WILLIAM ERNEST HOCKING, 161.
- Analysis of Mathematical Intelligence, Note on a Quantitative.—WILLIAM BROWN, 526.
- ANGIER, ROSWELL P.—Pillsbury's Attention, 45.
- Anti-Intellectualism, Some Implications of.—JOHN DEWEY, 477.
- Appleton's A Comparative Study of the Play Activities of Adult Savages and Civilized Children.—KATE GORDON, 718.
- ARNOLD, FELIX.—Myers's A Text-book of Experimental Psychology, 640.
- Arnold's Attention and Interest.—FREDERICK E. BOLTON, 474.
- Text-book of School and Class Management: Theory and Practise.—JOHN ANGUS MACVANNEL, 106.
- Arps' Ueber den Austieg der Druckempfindung.—HELEN D. COOK, 275.
- Art and Nature.—H. HEATH BAWDEN, 521.
- and Science.—H. HEATH BAWDEN, 602.
- Association Functions of the Cerebrum, On the.—SHEPHERD IVORY FRANZ, 673.
- of Ideas, To Reconsider the.—MAX EASTMAN, 155.
- Attention as Sensory Clearness.—E. B. TITCHENER, 180.
- The Duration of, Reversible Perspectives, and the Refractory Phase of the Reflex Arc.—J. E. WALLACE WALLIN, 33.
- The Paradox of Voluntary.—ARCHIBALD B. D. ALEXANDER, 291.
- Bacon's The Founding of the Church.—JOSEPH LOUIS PERRIER, 248.
- BAWDEN, H. HEATH.—Art and Nature, 521.
- Art and Science, 602.
- BERGSON, H.—A propos d'un article de Mr. Walter B. Pitkin intitulé: James and Bergson, 385.
- Bergson, James, and Mr. Pitkin.—H. M. KALLEN, 353.
- James and: or, Who is against Intellect? WALTER B. PITKIN, 225.
- or Bradley?—WILLIAM JAMES, 29.
- Biology, Psychology in its Relations to.—ROBERT M. YERKES, 113.
- Bode's An Outline of Logic.—W. H. SHELDON, 635.
- BOLTON, FREDERICK E.—Arnold's Attention and Interest, 474.
- BOODIN, J. E.—Truth and Its Object, 508.
- Book's Psychology of Skill.—M. GERTRUDE RAND, 80.
- BOSANQUET, B.—Cause and Ground, 438.
- Bowne, Borden Parker.—GEORGE A. COE, 281.
- BRADLEY, F. H.—A Disclaimer, 183.
- Bradley or Bergson?—WILLIAM JAMES, 29.
- BREITWIESER, J. V.—Sidis's Nature and Causation of the Galvanic Phenomenon, 416.
- BROWN, HAROLD CHAPMAN.—If the Blind Lead the Blind. A Comment on Logical Form in Professor Perry's Realistic Platform, 491.
- Note Concerning The Program and First Platform of Six Realists, 628.
- Stein's Le sens de l'existence, 473.
- BROWN, WILLIAM.—Educational Psychology in the Secondary Schools, 14.
- Note on a Quantitative Analysis of Mathematical Intelligence, 526.
- Brown, Dr., A Reply to.—RALPH BARTON PERRY, 626.
- BUCHNER, EDWARD FRANKLIN.—The Fifth Annual Meeting of the Southern Society for Philosophy and Psychology, 298.
- Calkins's A First Book in Psychology.—C. E. SEASHORE, 693.
- Category of Science, Chance as a.—ARTHUR DEWING, 70.
- Catholicism, Egoism, Altruism. A Note on Ethical Terminology.—EDWARD O. SISSONS, 158.

- Cause and Ground.—B. BOSANQUET, 438.
- Central Tendency of Judgment, The.—H. L. HOLLINGWORTH, 461.
- Cerebrum, On the Association Functions of the.—SHEPHERD IVORY FRANZ, 673.
- Chance as a Category of Science.—ARTHUR DEWING, 70.
- Claparède's *Psychologie de l'enfant et de pédagogie expérimentale*.—IRVING KING, 269.
- Clearness, Attention as Sensory.—E. B. TITCHENER, 180.
- COE, GEORGE A.—Borden Parker Bowne, 281.
- Jones's *Studies in Mystical Religion*, 667.
- COHEN, MORRIS R.—The Conception of Philosophy in Recent Discussion, 401.
- Collier's *Clavis Universalis*.—A. O. LOVEJOY, 77.
- Colvin's *Studies from the Psychological Laboratory of the University of Illinois*.—ABRAM LIPSKY, 274.
- Conception of Philosophy in Recent Discussion, The.—MORRIS R. COHEN, 401.
- Contingency in an Infinite World.—WILLIAM FORBES COOLEY, 267.
- Phase of the Problem of.—W. H. KILPATRICK, 65.
- Continuity and Discreteness, On.—J. A. LEIGHTON, 231.
- COOK, HELEN D.—Arps' *Ueber den Austieg der Druckempfindung*, 275.
- Cook's *Die Taktile Schätzung von ausgefüllten und leeren Strecken*.—H. L. HOLLINGWORTH, 442.
- COOLEY, WILLIAM FORBES.—Contingency in an Infinite World, 267.
- Faucett's *The Individual and Reality*, 469.
- Cooley's *Social Organization: A Study of the Larger Mind*.—WILL S. MUNROE, 50.
- Correction, A.—WILLIAM JAMES, 183.
- Course in Philosophy, The Aims of an Introductory.—EDGAR L. HINMAN, 561.
- Crawley's *The Idea of the Soul*.—HUTTON WEBSTER, 305.
- Croce's *Esthetic as Science of Expression and General Linguistic*.—ADAM LEROY JONES, 496.
- Davies's *The Moral Life, a Study in Genetic Ethics*.—FRANK CHAPMAN SHARP, 638.
- DEARBORN, GEORGE V. N.—Notes on the Discernment of Likeness and of Unlikeness, 57.
- DEWEY, JOHN.—James, William, 505.
- Some Implications of Anti-intellectualism, 477.
- Short-cut to Realism Examined, 553.
- Valid Knowledge and the Subjectivity of Experience, 169.
- Dewey's *The Influence of Darwin on Philosophy and Other Essays in Contemporary Thought*.—HENRY STURT, 557.
- DEWING, ARTHUR.—Chance as a Category of Science, 70.
- Dewing's *Life as Reality*.—JAY WILLIAM HUDSON, 528.
- Diès' *La définition de l'être et de la nature des idées dans le Sophiste de Platon*.—W. A. HEIDEL, 105.
- Disagreeable, The Oblivescence of the.—H. L. HOLLINGWORTH, 709.
- Discernment of Likeness and of Unlikeness, Notes on the.—GEORGE V. N. DEARBORN, 57.
- Disclaimer, A.—F. H. BRADLEY, 183.
- Discreteness, On Continuity and.—J. A. LEIGHTON, 231.
- Doan's *Religion and the Modern Mind*.—F. C. FRENCH, 133.
- Dugage's *Théorie des principes de l'absolu*.—SAVILLA A. ELKUS, 472.
- Duration of Attention, Reversible Perspectives, and the Refractory Phase of the Reflex Arc.—J. E. WALLACE WALLIN, 33.
- EASTMAN, MAX.—To Reconsider the Association of Ideas, 155.
- Educational Psychology in the Secondary Schools.—WILLIAM BROWN, 14.
- Psychology, The Problem and Content of.—IRVING KING, 428.
- Ego-centric Predicament, The.—RALPH BARTON PERRY, 5.
- Egoism, Altruism, Catholicism. A Note on Ethical Terminology.—EDWARD O. SISSONS, 158.
- ELKUS, SAVILLA A.—Dugage's *Théorie des principes de l'absolu*, 472.
- Leenhardt's *L'évolution, doctrine de liberté*, 470.
- Philosophical Platform from Another Standpoint, 19.
- Epiphenomenalism, Huxley's: A Criticism and an Appreciation.—EVANDER BRADLEY MCGILVARY, 449.
- Ether, Record of an Experience while under the Influence of.—HARRY WALKER, 437.
- EWER, BERNARD C.—Tenth Annual Meeting of the Western Philosophical Association, 421.
- Experience, The Subjectivity of, and Valid Knowledge.—JOHN DEWEY, 169.
- Explanation, An.—W. P. MONTAGUE, 184.
- Farnsworth's *Education through Music*.—DANIEL GREGORY MASON, 51.
- Faucett's *The Individual and Reality*.—WILLIAM FORBES COOLEY, 469.

- FITE, WARNER.—O'Sullivan's Old Criticism and New Pragmatism, 499.
- FITZGERALD, J. G.—Münsterberg's Psychotherapy, 246.
- FRANZ, SHEPHERD IVORY.—On the Association Functions of the Cerebrum, 673.
- FRENCH, F. C.—Doan's Religion and the Modern Mind, 133.
- Garman's Lectures, Letters, and Addresses of Charles Edward Garman.—H. A. OVERSTREET, 582.
- Garrigou-Lagrange's *Le sens commun, la philosophie de l'être et les formules dogmatiques*.—JOSEPH LOUIS PERRIER, 612.
- GODDARD, HAROLD C.—Literature and the New Philosophy, 124.
- GORDON, KATE.—Appleton's A Comparative Study of the Play Activities of Adult Savages and Civilized Children, 718.
- Hart's A Critical Study of Current Theories of Moral Education, 696.
- Gordon's *Esthetics*.—WALTER B. PITKIN, 191.
- HAGGERTY, M. E.—Eighteenth Annual Meeting of the American Psychological Association, 185.
- Pieron's *L'évolution de la mémoire*, 668.
- Haggerty's *Imitation in Monkeys*.—JOHN B. WATSON, 357.
- Hart's A Critical Study of Current Theories of Moral Education.—KATE GORDON, 696.
- HAYNES, ROWLAND.—Münsterberg's *The Eternal Values*, 241.
- HEIDEL, W. A.—*Diès' La définition de l'être et de la nature des idées dans le Sophiste de Platon*, 105.
- HENDERSON, E. N.—Miller's *The Psychology of Thinking*, 389.
- Herrick's *Metaphysics of a Naturalist*.—DEWITT H. PARKER, 665.
- HINMAN, EDGAR L.—The Aims of an Introductory Course in Philosophy, 561.
- HOCKING, WILLIAM ERNEST.—Analogy and Scientific Method in Philosophy, 161.
- HOLLINGWORTH, H. L.—Central Tendency of Judgment, 461.
- Cook's *Rie Taktile Schätzung von ausgefüllten und leeren Strecken*, 442.
- Oblivescence of the Disagreeable, 709.
- HOLT, EDWIN B.—The Program and First Platform of Six Realists, 393.
- How Ideas Work.—A. W. MOORE, 617.
- HUDSON, JAY WILLIAM.—Dewey's *Life as Reality*, 528.
- Introduction to Philosophy through the Philosophy in History, 569.
- Huxley's Epiphenomenalism: A Criticism and an Appreciation.—EVANDER BRADLEY MCGILVARY, 449.
- Hyde's Sin and its Forgiveness.—JOSEPH LOUIS PERRIER, 248.
- Idealism, Irrationalism and Absolute.—JARED S. MOORE, 215.
- Ideas, To Reconsider the Association of.—MAX EASTMAN, 155.
- Work, How.—A. W. MOORE, 617.
- If the Blind Lead the Blind. A Comment on Logical Form in Professor Perry's Realistic Platform.—HAROLD CHAPMAN BROWN, 491.
- Implications of Anti-intellectualism, Some.—JOHN DEWEY, 477.
- Index, 722.
- Infinite World, Contingency in an.—WILLIAM FORBES COOLEY, 267.
- Intelligence, Mathematical, Note on a Quantitative Analysis of.—WILLIAM BROWN, 526.
- Introduction to Philosophy through the Philosophy in History.—JAY WILLIAM HUDSON, 569.
- Introductory Course in Philosophy, The Aims of an.—EDGAR L. HINMAN, 561.
- Irrationalism, A Pluralistic Universe and the Logic of.—W. P. MONTAGUE, 141.
- and Absolute Idealism.—JARED S. MOORE, 215.
- JACOBSON, EDMUND.—The Relational Account of Truth, 253.
- JAMES, WILLIAM.—A Correction, 183.
- Bradley or Bergson? 29.
- Suggestion about Mysticism, 85.
- James and Bergson, A propos d'un article de Mr. Walter B. Pitkin intitulé.—H. BERGSON, 385.
- and Bergson: or, Who is against Intellect?—WALTER B. PITKIN, 225.
- Bergson and Mr. Pitkin.—H. M. KALLEN, 353.
- William.—JOHN DEWEY, 505.
- James's The Meaning of Truth.—JOHN E. RUSSELL, 22.
- Work, Some of the Tendencies of Professor.—D. S. MILLER, 645.
- JASTROW, JOSEPH.—The Physiological Support of the Perceptive Processes, 380.
- Johnson's Proclus's Metaphysical Elements.—ARTHUR O. LOVEJOY, 220.
- JOHNSTON, CHARLES HUGHES.—Münsterberg's Psychology and the Teacher, 73.
- Nakashima's Contributions to Study of Affective Processes, Time Relations of the Affective Processes, 270.
- Ribot's *La mémoire et l'expérimentation*, 273.

- Rowe's Habit-formation and the Science of Teaching, 163.
- JONES, ADAM LEROY.—Croce's Esthetic as Science of Expression and General Linguistic, 496.
- Jones's Idealism as a Practical Creed.—ARCHIBALD B. D. ALEXANDER, 300.
- Studies in Mystical Religion.—GEORGE A. COE, 667.
- Journals and New Books, 25, 52, 81, 107, 138, 165, 194, 221, 251, 277, 307, 333, 361, 391, 417, 444, 475, 501, 530, 559, 585, 614, 641, 670, 697, 719.
- Judgment, The Central Tendency of.—H. L. HOLLINGWORTH, 461.
- KALLEN, H. M.—James, Bergson, and Mr. Pitkin, 353.
- The Lyric Philosopher, 589.
- Kant, The Pragmatism of.—A. C. MCGIFFERT, 197.
- Kent's and Rosanoff's A Study of Association in Insanity.—FREDERIC LYMAN WELLS, 695.
- KILPATRICK, W. H.—A Phase of the Problem of Contingency, 65.
- KING, IRVING.—Claparède's Psychologie de l'enfant et pédagogie expérimentale, 269.
- Problem and Content of Educational Psychology, 428.
- King's The Development of Religion.—JOHN R. SWANTON, 631.
- Knowledge and Volition.—DEWITT H. PARKER, 594.
- Valid, and the Subjectivity of Experience.—JOHN DEWEX, 169.
- Knox's The Gospel of Jesus the Son of God.—JOSEPH LOUIS PERRIER, 248.
- Ladd's Knowledge, Life, and Reality.—C. H. RIEBER, 218.
- Leenhardt's L'évolution, doctrine de liberté.—SAVILLA A. ELKUS, 470.
- LEIGHTON, J. A.—On Continuity and Discreteness, 231.
- Likeness and of Unlikeness, Notes on the Discernment of.—GEORGE V. N. DEARBORN, 57.
- LIPSKY, ABRAM.—Colvin's Studies from the Psychological Laboratory of the University of Illinois, 274.
- Wellesley College Studies in Psychology, 135.
- Literature and the New Philosophy.—HAROLD C. GODDARD, 124.
- LLOYD, ALFRED H.—The Passing of the Supernatural, 533.
- Logic of Irrationalism, A Pluralistic Universe and the.—W. P. MONTAGUE, 141.
- Treatment of Opposition in Formal.—A. O. LOVEJOY, 101.
- LOVEJOY, ARTHUR O.—Collier's Clavis Universalis, 77.
- Johnson's Proclus's Metaphysical Elements, 220.
- Note, 133.
- Place of the Time Problem in Contemporary Philosophy, 683.
- Treatment of Opposition in Formal Logic, 101.
- Lyric Philosopher, The.—H. M. KALLEN, 589.
- MACVANNEL, JOHN ANGUS.—Arnold's Text-book of School and Class Management: Theory and Practice, 106.
- Marshall's Consciousness.—A. H. PIERCE, 608.
- MARVIN, WALTER T.—The Program and First Platform of Six Realists, 393.
- MASON, DANIEL GREGORY.—Farnsworth's Education through Music, 51.
- Mathematical Intelligence, Note on a Quantitative Analysis of.—WILLIAM BROWN, 526.
- Mathematics, On Secular Cooling as an Illustration of the Methods of Applied.—H. S. SHELTON, 481.
- McConnell's The Duty of Altruism.—ELLEN BLISS TALBOT, 715.
- MCGIFFERT, A. C.—The Pragmatism of Kant, 197.
- MCGILVARY, EVANDER BRADLEY.—Huxley's Epiphenomenalism: A Criticism and an Appreciation, 449.
- MEAD, GEORGE H.—What Social Objects must Psychology Presuppose? 174.
- Method, Analogy and Scientific, in Philosophy.—WILLIAM ERNEST HOCKING, 161.
- Methodology, On Methods and.—H. S. SHELTON, 261.
- Methods and Methodology, On.—H. S. SHELTON, 261.
- of Applied Mathematics, On Secular Cooling as an Illustration of the.—H. S. SHELTON, 481.
- MILLER, D. S.—Some of the Tendencies of Professor James's Work, 645.
- Miller's The Psychology of Thinking.—E. N. HENDERSON, 389.
- Modern Religious Problems.—J. L. PERRIER, 248.
- MONTAGUE, W. P.—An Explanation, 184.
- Pluralistic Universe and the Logic of Irrationalism, 141.
- Program and First Platform of Six Realists, 393.
- MOORE, A. W.—How Ideas Work, 617.
- Schinz's Anti-Pragmatism: Author's Translation from the French with Appendices, 717.
- MOORE, JARED S.—Irrationalism and Absolute Idealism, 215.
- System of Values, 282.

- MUNROE, WILL S.—Cooley's Social Organization: A Study of the Larger Mind, 50.
- Münsterberg's The Eternal Values.—ROWLAND HAYNES, 241.
- Psychology and the Teacher.—CHARLES HUGHES JOHNSTON, 73.
- Psychotherapy.—J. G. FITZGERALD, 246.
- Myers's A Text-book of Experimental Psychology.—FELIX ARNOLD, 640.
- Mysticism, A Suggestion about.—WILLIAM JAMES, 85.
- Nakashima's Contributions to Study of the Affective Processes, Time-relations of the Affective Processes.—CHARLES HUGHES JOHNSTON, 270.
- Nature, Art and.—H. HEATH BAWDEN, 521.
- New York Academy of Sciences, Section of Anthropology and Psychology.—R. S. WOODWORTH, 216, 238.
- Note, A.—ARTHUR O. LOVEJOY, 133.
- Concerning The Program and First Platform of Six Realists.—HAROLD CHAPMAN BROWN, 628.
- on a Quantitative Analysis of Mathematical Intelligence.—WILLIAM BROWN, 526.
- Notes and News, 26, 55, 83, 110, 139, 167, 195, 222, 251, 279, 308, 334, 364, 392, 420, 447, 476, 504, 532, 560, 588, 615, 643, 671, 699, 720.
- on the Discernment of Likeness and of Unlikeness.—GEORGE V. N. DEARBORN, 57.
- Oblivescence of the Disagreeable.—H. L. HOLLINGWORTH, 709.
- Opposition in Formal Logic, The Treatment of.—A. O. LOVEJOY, 101.
- Organism, The Science and Philosophy of.—FRANCIS B. SUMNER, 309.
- O'Sullivan's Old Criticism and New Pragmatism.—WARNER FITE, 499.
- OVERSTREET, H. A.—Garman's Lectures, Letters, and Addresses of Charles H. Garman, 582.
- Quantitative Analysis of Mathematical Intelligence, Note on a.—WILLIAM BROWN, 526.
- Paradox of Voluntary Attention, The.—ARCHIBALD B. D. ALEXANDER, 291.
- Paradoxes of Visual Space, Some Neglected.—WALTER B. PITKIN, 92, 204.
- PARKER, DEWITT H.—Herrick's Metaphysics of a Naturalist, 665.
- Knowledge and Volition, 594.
- Passing of the Supernatural, The.—ALFRED H. LLOYD, 533.
- Perceptive Processes, The Physiological Support of the.—JOSEPH JASTROW, 380.
- PERRIER, JOSEPH LOUIS.—Garrigou-Lagrange's *Le sens commun, la philosophie de l'être et les formules dogmatiques*, 612.
- Modern Religious Problems, 248.
- PERRY, RALPH BARTON.—The Ego-centric Predicament, 5.
- Program and First Platform of Six Realists, 393.
- Realism as a Polemic and Program of Reform, 337, 365.
- Reply to Dr. Brown, 626.
- Phase of the Problem of Contingency, A.—W. H. KILPATRICK, 65.
- Philosopher, The Lyric.—H. M. KALLEN, 589.
- Philosophical Platform from Another Standpoint, A.—SAVILLA A. ELKUS, 19.
- Philosophy, Analogy and Scientific Method in.—WILLIAM ERNEST HOCKING, 161.
- in Recent Discussion, The Conception of.—MORRIS R. COHEN, 401.
- Literature and the New.—HAROLD C. GODDARD, 124.
- of the Organism; The Science and.—FRANCIS B. SUMNER, 309.
- Place of the Time Problem in Contemporary.—ARTHUR O. LOVEJOY, 683.
- Problem of Time in Modern.—FREDERICK J. E. WOODBRIDGE, 410.
- through the Philosophy in History, An Introduction to.—JAY WILLIAM HUDSON, 569.
- Physiological Support of the Perceptive Processes, The.—JOSEPH JASTROW, 380.
- PIERCE, A. H.—Marshall's Consciousness, 608.
- Pieron's *L'évolution de la mémoire*.—M. E. HAGGERTY, 668.
- Pillsbury's Attention.—ROSSELL P. ANGER, 45.
- PITKIN, WALTER B.—Gordon's *Esthetics*, 191.
- James and Bergson: or, Who is against Intellect? 225.
- Ninth Annual Meeting of the American Philosophical Association, 38.
- Program and First Platform of Six Realists, 393.
- Rhodes's *The Philosophy of Change*, 20.
- Some Neglected Paradoxes of Visual Space, 92, 204.
- Pitkin, A propos d'un article de Mr. Walter B., intitulé: James and Bergson.—H. BERGSON, 385.
- James, Bergson and Mr.—H. M. KALLEN, 353.
- Place of the Time Problem in Contemporary Philosophy, The.—ARTHUR O. LOVEJOY, 683.

- Platform of Six Realists, Program and First.—EDWIN B. HOLT, WALTER T. MARVIN, W. P. MONTAGUE, RALPH BARTON PERRY, WALTER B. PITKIN, EDWARD GLEASON SPAULDING, 393.
- Note Concerning.—HAROLD CHAPMAN BROWN, 628.
- Realistic, A Comment on Logical Form in Professor Perry's.—HAROLD CHAPMAN BROWN, 491.
- Philosophical, from Another Standpoint.—SAVILLA A. ELKUS, 19.
- Pluralistic Universe and the Logic of Irrationalism, A.—W. P. MONTAGUE, 141.
- Pragmatism of Kant, The.—A. C. McGIFFERT, 197.
- Pritchard's Kant's Theory of Knowledge.—EDWARD E. RICHARDSON, 359.
- Problem and Content of Educational Psychology, The.—IRVING KING, 428.
- of Time in modern Philosophy.—FREDERICK J. E. WOODBRIDGE, 410.
- Program and First Platform of Six Realists, The.—EDWIN B. HOLT, WALTER T. MARVIN, W. P. MONTAGUE, RALPH BARTON PERRY, WALTER B. PITKIN, EDWARD GLEASON SPAULDING, 393.
- A Note Concerning.—HAROLD CHAPMAN BROWN, 628.
- of Reform, Realism as a Polemic and.—RALPH BARTON PERRY, 337, 365.
- Psychology, Educational, In the Secondary Schools.—WILLIAM BROWN, 14.
- in its Relations to Biology.—ROBERT M. YERKES, 113.
- Problem and Content of Educational.—IRVING KING, 428.
- What Social Objects must, Presuppose?—GEORGE H. MEAD, 174.
- RAND, M. GERTRUDE.—Book's Psychology of Skill, 80.
- Rand's Classical Moralists.—NORMAN WILDE, 161.
- Realism a Defensible Doctrine.—JOHN E. RUSSELL, 701.
- as a Polemic and Program of Reform.—RALPH BARTON PERRY, 337, 365.
- Short-cut to, Examined.—JOHN DEWEY, 553.
- Realistic Platform, A Comment on Logical Form in Professor Perry's.—HAROLD CHAPMAN BROWN, 491.
- Realists, Program and First Platform of Six.—EDWIN B. HOLT, WALTER T. MARVIN, W. P. MONTAGUE, RALPH BARTON PERRY, WALTER B. PITKIN, EDWARD GLEASON SPAULDING, 393.
- Note Concerning.—HAROLD CHAPMAN BROWN, 628.
- Record of an Experience while under the Influence of Ether.—HARRY WALKER, 437.
- Reflex Arc, the Refractory Phase of the, The Duration of Attention, Reversible Perspectives, and.—J. E. WALLACE WALLIN, 33.
- Relational Account of Truth, The.—EDMOND JACOBSON, 253.
- Reply to Dr. Brown, A.—RALPH BARTON PERRY, 626.
- Rhodes's The Philosophy of Change.—WALTER B. PITKIN, 20.
- Ribot's *La mémoire et l'expérimentation*.—CHARLES HUGHES JOHNSTON, 273.
- RICHARDSON, EDWARD E.—Pritchard's Kant's Theory of Knowledge, 359.
- RIEBER, C. H.—Ladd's Knowledge, Life, and Reality, 218.
- Rosanoff's and Kent's A Study of Association in Insanity.—FREDERIC LYMAN WELLS, 695.
- Rowe's Habit-formation and the Science of Teaching.—CHARLES HUGHES JOHNSTON, 163.
- Rowland's Right to Believe.—E. STETT-HEIMER, 330.
- RUSSELL, JOHN E.—James's The Meaning of Truth, 22.
- Realism a Defensible Doctrine, 701.
- SALVADORI, GUGLIELMO.—Tocco's Studi Kantiani, 574.
- Schinz's Anti-Pragmatism: Author's Translation.—A. W. MOORE, 717.
- Science and Philosophy of the Organism, The.—FRANCIS B. SUMNER, 309.
- Art and.—H. HEATH BAWDEN, 602.
- Scientific Method in Philosophy, Analogy and.—WILLIAM ERNEST HOCKING, 161.
- Scott's The Historical and Religious Value of the Fourth Gospel.—JOSEPH LOUIS PERRIER, 248.
- SEASHORE, C. E.—Calkins's A First Book in Psychology, 693.
- Secular Cooling as an Illustration of Applied Mathematics, On.—H. S. SHELTON, 481.
- Sensory Clearness, Attention as.—E. B. TITCHENER, 180.
- SHARP, FRANK CHAPMAN.—Davies's The Moral Life, a Study in Genetic Ethics, 638.
- SHELDON, W. H.—Bode's An Outline of Logic, 635.
- SHELTON, H. S.—On Secular Cooling as an Illustration of the Methods of Applied Mathematics, 481.
- On Methods and Methodology, 261.
- Short-cut to Realism Examined, The.—JOHN DEWEY, 553.
- Sidis's Nature and Causation of the

- Galvanic Phenomenon.—J. V. BREITWIESER, 416.
- SISSONS, EDWARD O.—Egoism, Altruism, Catholicism. A Note on Ethical Terminology, 158.
- Social Objects, What must Psychology Presuppose?—GEORGE H. MEAD, 174.
- Societies: Eighteenth Annual Meeting of the American Psychological Association.—M. E. HAGGERTY, 185.
- Fifth Annual Meeting of the Southern Society for Philosophy and Psychology.—EDWARD FRANKLIN BUCHNER, 298.
- Ninth Annual Meeting of the American Philosophical Association.—WALTER B. PITKIN, 38.
- Section of Anthropology and Psychology of the New York Academy of Sciences.—R. S. WOODWORTH, 216, 238.
- Tenth Annual Meeting of the Western Philosophical Association.—BERNARD C. EWER, 421.
- Southern Society for Philosophy and Psychology, The Fifth Annual Meeting of the.—EDWARD FRANKLIN BUCHNER, 298.
- SPAULDING, EDWARD GLEASON.—The Program and First Platform of Six Realists, 393.
- Stein's *Le sens de l'existence*.—HAROLD CHAPMAN BROWN, 473.
- STETTHEIMER, E.—Rowland's Right to Believe, 330.
- STURT, HENRY.—Dewey's The Influence of Darwin on Philosophy, and Other Essays in Contemporary Thought, 557.
- Subjectivity of Experience, Valid Knowledge and the.—JOHN DEWEY, 169.
- Suggestion about Mysticism, A.—WILLIAM JAMES, 85.
- SUMNER, FRANCIS B.—The Science and Philosophy of the Organism, 309.
- Supernatural, The Passing of the.—ALFRED H. LLOYD, 533.
- SWANTON, JOHN R.—King's The Development of Religion, 631.
- System of Values, The.—J. S. MOORE, 282.
- TALBOT, ELLEN BLISS.—McConnell's The Duty of Altruism, 715.
- Tendencies of Professor James's Work, Some of the.—D. S. MILLER, 645.
- Time Problem in Contemporary Philosophy, The Place of the.—ARTHUR O. LOVEJOY, 683.
- Problem of, in Modern Philosophy.—FREDERICK J. E. WOODBRIDGE, 410.
- TITCHENER, E. B.—Attention as Sensory Clearness, 180.
- To Reconsider the Association of Ideas.—MAX EASTMAN, 155.
- Tocco's *Studi Kantiani*.—GUGLIELMO SALVADORI, 574.
- TOWER, CARL VERNON.—Unold's *Der Monismus und Seine Ideale*, 578.
- Treatment of Opposition in Formal Logic, The.—A. O. LOVEJOY, 101.
- Truth and Its Object.—J. E. BOODIN, 508.
- Relational Account of.—EDWARD JACOBSON, 253.
- Unold's *Aufgaben und Ziele des Menschenlebens*.—HELEN THOMPSON WOOLLEY, 192.
- Der *Monismus und Seine Ideale*.—CARL VERNON TOWER, 578.
- Valid Knowledge and the Subjectivity of Experience.—JOHN DEWEY, 169.
- Values, The System of.—J. S. MOORE, 282.
- Visual Space, Some Neglected Paradoxes of.—WALTER B. PITKIN, 92, 204.
- Volition, Knowledge and.—DEWITT H. PARKER, 594.
- Voluntary Attention, The Paradox of.—ARCHIBALD B. D. ALEXANDER, 291.
- WALKER, HARRY.—Record of an Experience while under the Influence of Ether, 437.
- WALLIN, J. E. WALLACE.—The Duration of Attention, Reversible Perspectives, and the Refractory Phase of the Reflex Arc, 33.
- WATSON, JOHN B.—Haggerty's Imitation in Monkeys, 357.
- WEBSTER, HUTTON.—Crawley's The Idea of the Soul, 305.
- Wellesley College Studies in Psychology.—ABRAM LIPSKY, 135.
- WELLS, FREDERIC LYMAN.—Kent's and Rosanoff's A Study of Association in Insanity, 695.
- Western Philosophical Association, The Tenth Annual Meeting of the.—BERNARD C. EWER, 421.
- What Social Objects must Psychology Presuppose?—GEORGE H. MEAD, 174.
- WILDE, NORMAN.—Rand's Classical Moralists, 161.
- WOODBRIDGE, FREDERICK J. E.—The Problem of Time in Modern Philosophy, 410.
- WOODWORTH, R. S.—Section of Anthropology and Psychology of the New York Academy of Sciences, 216, 238.
- WOOLLEY, HELEN THOMPSON.—Unold's *Aufgaben und Ziele des Menschenlebens*, 192.
- YERKES, ROBERT M.—Psychology in its Relations to Biology, 113.



853

V77

169

B
1
J6
v.7

The Journal of Philosophy

**PLEASE DO NOT REMOVE
SLIPS FROM THIS POCKET**

**UNIVERSITY OF TORONTO
LIBRARY**
