

THE PSYCHOLOGICAL REVIEW.

PRESIDENT'S ADDRESS BEFORE THE NEW YORK MEETING OF THE AMERICAN PSYCHO- LOGICAL ASSOCIATION.*

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GENTLEMEN OF THE PSYCHOLOGICAL ASSOCIATION:

The time and manner of the organization of this Association seem to me significant of certain important truths which concern the science in whose behalf the organization has been effected. Without undue modesty we should perhaps speak of ourselves as the youngest—the most nearly embryonic—of all similar scientific bodies; and it is, of course, well known that many workmen in other lines of scientific endeavor, and even some of the most notable and helpful among ourselves, still deny that psychology is entitled to be called a ‘science.’ On the other hand, it is not unbecoming pride which leads us to maintain that no similar organization is more hopeful, more disposed to be creditably aggressive, than are we. For few, if any, of the most firmly established and highly accredited scientific associations can rely upon a more devoted and well-trained membership, or upon more interest—both popular and permanent—in the results of their researches and speculations, than can those formed for the cultivation, in the use of modern methods, of the science of psychology.

Such a position as that which we occupy has certain disadvantages and certain equally great advantages. It cannot, indeed, be truthfully claimed that psychology has at present

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the same settled and accepted principles of method as those which belong—for example—to the modern sciences of physics and chemistry. Possibly—though doubt is certainly permissible here—in respect of its possession of an accredited method, it is not even the peer of biology, or of a so-called ‘social science.’ Neither is it possible for psychology, at least as yet, to formulate its ascertained facts, and announce the discovery of universal ‘laws,’ with the precision which belongs to the more advanced physical sciences. On the other hand, I am bold enough (perhaps *rash* enough would seem the more appropriate word) to predict that some of the most widely accepted of these physical formulas are destined to be thoroughly shaken up, in the not far away future. But, however this may be, there is always a certain advantage in the plasticity, the superior mouldableness, of the origin of scientific products and their developments. And if psychology, as a science, must be considered embryonic in its present stage, there is on this account the more opportunity for a band of students and investigators, such as we aim to be, to contribute something important to its more stable and higher evolution.

Now it seems to me that the large and final success of an Association like this will depend very conspicuously upon the attitude which its members maintain toward the three following classes of inquiries. I say ‘classes’ of inquiries, because each of the questions which I am about to raise includes an indefinite number of subordinate questions. As to these subordinate questions, probably no two members of this Association could be found in perfect agreement. But as to the right general attitude toward each of the three classes of inquiries, it seems to me possible that we may start our special lines of work with something approaching a common consent. A detailed discussion of even such general questions, and a defence of the attitude which I think should be taken toward them, would be quite too much of a task for the present occasion. I shall limit myself to a brief statement, followed by some rather indefinite remarks upon what seems to me to be the right attitude toward each. I shall be content with gaining something in comprehensive-

ness of view, and in largeness and freedom of spirit, even if I lose much as respects precision and satisfactoriness of proof.

In other words, gentlemen, let us allow our eyes to wander with an æsthetical and ethical, rather than purely scientific, intent over our broad and fair domain, before we settle down, as a well-organized colony, to its minuter exploration and cultivation.

The three classes of inquiries to which reference was just made are the following: (1) What is the relation in which the statistical and experimental investigation of mental phenomena stands to the total science of psychology, in the larger meaning of the latter words? (2) What is the relation in which the science of psychology, thus understood, stands to that interpretation of the external world and of human life, in its yet larger and profounder experiences, which we are wont to call philosophy? (3) What is the relation in which the science of psychology stands to conduct and to the practical welfare of mankind? More briefly expressed: How shall we regard the science of mental life as related to the methods and conclusions of the most nearly allied physical sciences, to philosophy, and to human action and character?

Now, if I were to speak my mind at all fully in answer to either of these three questions, I should doubtless find the amount of assent which my words commanded varying for each of the three. As to the last of the three questions, it would probably be possible to receive the adherence of all my auditors; as to the second of the three (namely, the relation of psychology to philosophy), a pretty general agreement might perhaps be reached; but as to the nature of the science called psychology, and as to the use of laboratory and other allied methods for its cultivation, perhaps any one of our number, if addressing the Association, should be amply satisfied if he had succeeded in carrying the assent of a bare majority. This last remark is made in passing, partly as a matter of rhetorical policy; for the order of treatment which I have adopted compels me to speak of the most controverted subjects first.

First, then, as to the question of method, and of the possibility of rendering psychology more truly scientific, by use

of right method ; as well as of the value and limits of the more modern statistical and experimental researches. On all these matters I begin with an exhortation addressed not less to myself than to all my colleagues in the common work. Let us all always be just: nay, let us be something more than merely just; let us be generous. And let our generosity include all workmen of all times, with their works, from Aristotle's *De Anima* to the latest thesis by the youngest aspirant for the degree of Doctor of Philosophy,—even if months of painstaking experiment in some German or American laboratory have led him to merely 'negative' results. Let this same generosity also include all methods of dealing with mental phenomena; from experimenting with key and chronometer, through thousands of trials in reaction-time and elaborate mathematical discussion of general averages, to the introspective seizure of some rare happening in individual consciousness, with the felicitous guess which genius makes as to the meaning of the fact thus surprised; or to the reflective study of that artistic delineation of soul-life in which the best novels, poems, and dramas are so wonderfully successful.

Nor can I approve of the proposal to restrict the use of the words 'science' and 'scientific'; or of the denial that psychology *is* a science, or of the refusal to accept as *scientific* other contributions than those of the physiological or psychophysical laboratory. Apropos of the correct and courteous use of these terms, I recall a colleague of my younger days, a young professor of physics; this ardent 'scientist' boldly denied the right of any other branch of human knowledge to the term 'science'; with him, there was only one *science*,—namely, physics. But, on the other hand, I shall not soon forget the reply, made by one of the most distinguished investigators and writers on this subject, to my question (half jestingly put), whether he considered meteorology a science. Said the veteran: "Meteorology is *just as much* of a science as geology is."

Now no fixed line can ever be drawn between science and ordinary knowledge; and science begins whenever and wherever facts begin to be carefully observed and classified, and attempts at explanation, by way of stating the customary

forms of the occurrence of the facts in relation, are made. To affirm that psychology is not a science, whether reference be had to the study of mental phenomena by the so-called introspective or by the so-called experimental method, seems to me both philologically and historically indefensible. While to postpone the gift of the title until some law, like that of gravitation in physics or of chemical æquivalency in chemistry, has been discovered, is to assume, unwarrantably, that some *such* law is actually followed by the phenomena. Such an assumption is, itself, at least premature and unscientific; even if we are not justified in saying that the very nature of psychical facts, and of their origin and sequence, is such as to render it forever unrealizable. In brief, there is every reason why we should be both just and generous in our use of terminology. This Association is formed for the advancement of a *science* already existing, and, indeed, like all the other principal sciences, some centuries old. We of to-day have entered into the inheritance of past ages; and it is becoming for us to do so with generous acknowledgment of what the past has done for us. And yet, although we are children of the ages, we are pre-eminently children of the present age. For a certain way of studying the phenomena of mental life is comparatively modern; and the hopes which are entertained respecting results from this method are by no means altogether misleading.

This last remark introduces certain considerations respecting the relation of introspection and the use of statistics and experimentation in psychology. I need not speak in detail of the burning and strife which have too often accompanied the mere mention—not to say, the discussion—of this subject. I venture to hope that I speak for the great majority of this Association when I say that this feeling is to be deprecated; and, except so far as all controversy, however conducted, helps in a measure to elicit truth at last, it is to be distinctly avoided. Whoever takes a wide historical and philosophical view of the evolution of science in general—I do not say simply of psychology, in particular—can sympathize fully with neither of the two extreme views. He will neither, on the one hand, quake with fear lest the foundations of the

world's stock of truths in ethics and philosophy are to be undermined by the discovery of the function of Broca's convolution, or of the laws of reaction-time where apparent choice is concerned; nor, on the other hand, will he undertake to deny the verity of æsthetical, ethical, and religious consciousness, or pride himself on his ability to dispense with introspective psychology and philosophy, because of some new device in mechanism to aid the solution of certain subordinate psycho-physical problems.

The question how far laboratory and other methods akin to those of the most advanced physical sciences can be used in the development of a scientific psychology will answer itself only in the course of history. It is always a venturesome thing to lay down limits that anticipate the requisite experience. That can be which will be; and what will be cannot always be precisely predicted by means of what now is. Yet certain observations occur to me which seem more or less certain of realization. That no method can be developed in psychology which will enable us to dispense with introspection, or which will cease to be very largely dependent, for its own value, upon the value of the introspection which accompanies it, is too obvious to require discussion. Of course, the proposal wholly to get rid of self-consciousness as the medium of knowledge of the phenomena of consciousness is absurd. And however we may seem compelled to interpret the language of any advocate of experimentation and 'objective' observation *in the stead of* introspection, we can scarcely believe that his proposal is to be seriously and intelligently understood. The results of any 'series' of experiments, the generalizations from any 'pile' of statistics, become material for psychology only when they are interpreted in terms of consciousness. For scientific psychology *is* the science of the phenomena of consciousness, *as such*. And no interpretation of consciousness is possible in any terms whatever without self-consciousness. Every intelligent and sincere worker by laboratory methods knows that there is nothing of more doubtful scientific value than are the results obtained when the man behind the key is reacting in the interests, as it were, of his own self-consciously or unconsciously adopted theory;

unless, indeed, it be the interpretation of results obtained from an unprejudiced reacting agent by some prejudiced theorizer. Twist the matter as we may, we cannot get rid of the fact: skill in introspective observation and analysis sits at one end of the series of experiments as witness being examined, and at the other end as judge pronouncing after, or even before, the examination of the witness. It is plainly worth while to remark in passing that the same thing is true, though in far less degree, in all the physical sciences. The history of biology, of geology, and even of astronomy is full of examples of failure to arrive at truth objective and universal through lack of skill in self-knowledge. Hence the safe conclusion that a scientific psychology is the handmaid of all the sciences.

Furthermore, any attempt to separate introspection from experimentation and the more objective estimate of statistical material is as impolitic as it is plainly impossible. In past time the science of psychology has been advanced far more by those guesses at the truth based upon *my* truth,—those leaps from what is self-consciously discerned as *in me* to what belongs to all men, to human nature as such,—which characterize the “born psychologist,” than by long series of trial experiments or by vast collections of “data” so called. Nor am I sure that this will not always continue to be so. Here again, however, the method of psychology is not so wholly unlike that by which the physical sciences have grown. They, too, have made their great advances chiefly through the intuitive flashes of that genius which sees the general and the universal as it manifests itself in the particular. In psychology, as in these physical sciences, the truth which Aristotle recognized, of course, always holds: there can be no *science* of that which is individual merely. But in psychology more, by far, than in the physical sciences, the observation and skilled interpretation of the facts of individual experience are likely to lead directly to what is true and valuable for the entire species.

Once more, it seems to me that there are certain factors and aspects of all, even the commonest mental life, which will never readily lend themselves to refined methods of experimental analysis and interpretation; which will never yield to

the attempts, however persistent, of the collectors of 'data.' I am well aware that my opinion here will by no means command universal assent. It will probably seem to some that I am violating my own caution, not to limit in lofty *a priori* fashion the possibilities of triumph which lie before the new methods of solving psychological problems.

In illustration of my meaning, however, let me call attention to the following facts. We have had of late many considerable volumes on psychology; as, indeed, voluminous works abound on all the modern sciences. But perhaps we do not often enough consider how exceedingly meagre, as compared with the wealth and complexity of actual mental life, are the most voluminous of these treatises. Let the plain man read carefully through the biggest of all these books; and the astonishing thing is that so large a part of his daily experience is, not simply left unexplained to his satisfaction; it is not even treated at all. This is, of course, no sure proof that psychology is still in a lamentably backward condition. It is an illustration of the general truth that all human science is but patches of a shallow, superficial stratum, dimly lit through occasional rifts in the clouds, over the fathomless depths of the ocean of reality. For example, how absolutely dumb is all our most advanced evolutionary biology, when the common gardener asks for an explanation of the changes through which pass the phylloxera that are destroying the roots of his vines, or the moths that feed upon the leaves of his fruit-trees!

In further illustration of my meaning let me—though with a protest looking toward its definitive and final rejection—adopt for the moment the customary division of mental phenomena into knowledge, feeling, and will. It is simple matter of fact that, thus far in the development of laboratory and statistical methods for dealing with mental phenomena, it is the ever-present sensation-content of all these aspects of mental life which has chiefly, and almost exclusively, been the subject of treatment. This is, in part, perhaps the reason why some who are most nobly impatient of the limitations which have hitherto surrounded the use of experimental methods are so strongly inclined to identify feeling with quality of sensation, 'pleasure-

pain'-wise, and volition with dominant stress of sensation. But let us place the plain man in the presence of any common thing, and let him attain what he calls a 'knowledge' of that thing, and then summon the psychologist who is most expert in laboratory methods, and most learned in the results of such methods, to explain his *knowledge* of the 'Thing,' and—pardon the uncouth word—the *thinghood* of that which is known; and how far, pray, will the explanation go in reliance on the conclusions of a strictly inductive and experimental psychology? The expert will have to stop short when he has enumerated certain principles that have respect to the quality, quantity, time-rate, and combination of the sensation-factors whose synthesis is the sensation-content of knowledge. But in doing this he has not explained, he has not even described with any approach to completeness, that state of consciousness which we call an act of knowledge. And here I am not asking of the psychologist a system of metaphysics or a theory of knowledge, to incorporate into his experimental resultant. But I am simply asking that he shall describe and explain, *as such*, that common enough state of consciousness which everybody calls 'the knowledge of a thing.' Nor does it seem to me at all likely that our physiological and psycho-physical laboratories will ever be able to handle certain factors and aspects of this psychological problem of knowledge. For example, how shall we experiment or collect statistics to elucidate the 'belief' in reality which different writers have assigned, now to intellection, and now to feeling, and now to will, but without which no knowledge of anything can take place? For my part, I am just as firm in my opinion as the most old-fashioned psychologist, while in admiration for the new psychology I yield to none, that self-consciousness envisages a self-activity, and a conviction of extra-mental reality, in all knowledge, which experimental data are quite powerless either to deny or to explain.

Nor do I look forward with much confidence to the elucidation of our so-called 'higher' æsthetical, ethical or religious sentiments, by experimental analysis or by collection of statistics. Something worth while will doubtless be done in the region of the simpler and more fundamental feelings, by labo-

ratory methods; and what is done in this region will help us the better to understand what happens in the higher regions of affective phenomena. But I suspect that the limitations of the successful use of these methods are likely to be pretty quickly reached; and that we shall have to go to art and to literature, as interpreted through our own best self-conscious feeling, for the clearer understanding of all such phenomena.

With respect to choice and free will so called, as elucidated by the modern experimental methods, my hopes are very moderate, and my fears are—*nil*. In this line of investigation it is quite too often forgotten what it is, taken in its depth and entirety, which needs to be described and explained. You may seat your reacting agent, tabulate and arrange your results, and conclude—we will suppose, for the sake of illustration—that theoretical determinism has received an experimental demonstration. But suppose that I, in common with the great majority of men in all ages, doubt the truthfulness of your conclusion; and that to your conclusion I oppose a certain conviction that sometimes, somehow, I determine instead of being determined,—a conviction which I also share with the great majority of mankind. Now this doubt and this conviction are themselves psychological facts; they are of no small import and of almost universal occurrence. But how are you going to investigate them experimentally; how describe, explain, or explain away, the doubt and the conviction, by psycho-physical methods? To be sure, you may tell me that, if a stone, which flies through the air to its predetermined spot on the ground, had a *plus* of consciousness added to its motion, it would be conscious of self-directed motion, in the absence of any knowledge of the laws of gravitation, pressure from atmospheric currents, etc. But here again suppose that I doubt; and perhaps revive the time-worn conviction. For I do not see why consciousness + motion should equal anything more than consciousness *of* motion; or why consciousness *of* motion + ignorance should develop doubt of determinism and conviction of freedom. But, since it is in no respect my intention to argue this ancient problem, I will conclude this point by returning to my main thought: I do not see how the hypothetical instance of a conscious machine enables us the better

to handle the aforesaid doubt and the aforesaid conviction, by the methods of the psycho-physical laboratory.

It is high time, however, to turn our attention to the other side of the relation we are discussing. A mere glance at this other side is sufficient; because I suppose there is not a member of this Association who does not approve of the study of mental phenomena by experimental and statistical methods. This country, following Germany and in marked contrast to Great Britain, has eagerly and—on the whole I am sure very intelligently and safely—adopted this method. Our larger universities have already equipped, or are rapidly equipping, themselves with psycho-physical laboratories; our smaller institutions even are demanding of their teachers some acquaintance, at least, with modern ways, and modern results, in the study of psychological science. All this is very stimulating, very hopeful. The expectation is not unwarranted that the United States will soon become the coworker, on equal terms, of the best European laboratories. It is not for purposes of flattery, but rather of warning, that I venture to say: The fate of this movement in this country will depend very largely upon the action, individually and in corporate fashion, of the members of this Association. For myself, within limits which I have already roughly and inaccurately sketched, I look for a large development of the science of psychology, in the near future; and I am certain that this development will not be without influence upon the current philosophy and theology, as well as upon the practical welfare of the people. This confidence has its principal reasons in the necessarily close relations that exist among all the subordinate departments of the science of psychology, and the especially intimate relations in which the science stands to philosophy and to the life of conduct and the development of character. This last remark brings me to the second of the three points which it is my purpose to consider.

Philosophy is on the whole much older and more interesting to the human mind than is the science of psychology. Indeed, philosophy is older than any science, whether of mind or of matter. Various definitions setting forth different conceptions of philosophy have been put forth at different

epochs in its development. Perhaps the chief characteristic of the modern conception has reference to the relation in which philosophy stands to the various concrete or particular sciences. A passing glance at the way in which the present more cordial understanding of the two has come about may fitly be given; for here, as everywhere, the history of the evolution of human knowledge is full of instructive lessons. We go no farther back than to recall how the most stupendous systems of speculative thinking were built on ground which had been apparently swept quite bare by the criticism of Kant. This 'astounding' thinker, as Schopenhauer has called him, supposed that the negative result of his labors would be to remove forever the pretence of ontological *knowledge*, while 'making room'—to use his own phrase—for faith in the verity of certain postulates respecting ethical and religious entities. Much has been written concerning the failures and successes of the Kantian criticism, and concerning the causes of both. In my judgment—although I speak somewhat diffidently, because I am not aware that any of the most distinguished critical students of Kant have put the matter in just this light—the chief cause of the failures of this greatest of all modern thinkers lay in his imperfect and wrong conceptions of a psychological sort. Kant did not understand in a scientific way the common consciousness of the race. Especially defective and erroneous is his conception of *knowledge*; I do not now mean his theory of knowledge, but his descriptive history and implied analysis of that state of consciousness which all men recognize as entitled to be called 'knowledge.' But without proving this charge, and not to be drawn too far aside from the main current of my intention,—the issue showed that men would not be warned off by a critical theory of cognition from the 'pretence' of ontological and systematic knowledge. And, indeed, how could they be; since there is no such thing as knowledge that is not ontological? 'Ordinary' *knowledge* and 'scientific' *knowledge* are as full of unverifiable postulates as were the old-fashioned rational psychology or the rational theology; the only net, valuable result of no end of criticism being to discover what postulates, or fundamental faiths, enter into

all knowledge, and how they may be so understood and expressed as best to hang together.

Now, contemporaneously with the strong reaction against the negative conclusions of the Kantian criticism, in philosophical circles, there went on a mighty forward movement of the physical sciences as pursued by the more strictly inductive method, with the determination to prove all speculative hypotheses by experimental tests, and to express such of them as stood the testing in the intelligible and accurate terms of mathematical formulas. It was inevitable that these two movements should have a somewhat varied and sometimes painful experience in the effort to adjust relations with each other. In my opinion, if we set aside the theologians, the students of philosophy have on the whole behaved far better than the 'scientists' so called. I am not aware that even Hegel anywhere manifests a contempt for facts, as such, or flouts at the conclusions of his contemporaries in physical science, so far as he understood them to be scientifically derived. He undoubtedly everywhere manifests an overweening confidence in his ability to give an ultimate explanation of all these facts in accordance with the method and principles of the dialectical philosophy. But Mr. Herbert Spencer has not half as much expressed horror for the merely abstract, or manifest eagerness to get at the heart of the concrete and the real; and perhaps Hegel, when he steps over too far upon the domain of the positive sciences, is not—making allowance for the condition of things in his day—any more ridiculous than some of the modern disciples of science have been when they have transgressed the limits of their specialties (for example, Mr. Huxley in the arena of biblical criticism).

For an entire generation, which now seems happily drawing to a close, the relation of philosophy to the positive sciences, or rather of these sciences to it, was one of open antagonism or half-concealed contempt. 'Metaphysics'—for so all branches of philosophy were often sneeringly called—was a tabooed subject for the student of physics. And yet what was actually going on all this time? Why, within the domains of physics, chemistry, and biology, a system of 'meta-

physics' was being evolved which, although it does not know itself by that name and rarely arrives at an adult stage of self-consciousness, is quite as wonderful and stupendous in respect of its postulates as were any of the philosophical systems which followed the criticism of Kant. Nor will it do to maintain that this underlying and interpenetrating ontology can be removed and the modern system of the physical sciences remain, as sciences, in the same condition as before. The rather is it true that the complete removal of this metaphysical system would reduce the sciences from the condition of knowledge to the mere pretence of knowledge; from the claim to be systematized truth about real things and real events to mere *Schein*, as it were. Indeed, if it were in the line of my present pursuit to do this, I think it could be shown that the only result of the consistent carrying-out of this negative criticism and the resulting agnosticism is the falling in one common ruin of the rational foundations of daily conduct, of the natural and physical sciences, of ethics, and of theology—of the whole temple of human *knowledge*.

Of late and for some time, however, there have been plain signs that the age of opposition and conflict between science and philosophy is being replaced by an age of 'reconciliation.' Indeed, 'reconcilers' of science and religion, of science and philosophy, of philosophy and religion, are everywhere, thicker than bees in the blossoming-time of a Southern spring. Plainly, it is reconciliation which is in the air; and he is an 'old foggy' in spirit, however youthful he may be in age or appearance, who continues to talk with Haeckel about "strangled snakes lying around the cradle of the young Hercules"—namely, modern science—and other high-sounding but ill-timed phrases to the same effect. Better and wiser, by far, and at once more philosophical and more scientific, to hold out the hand, with Helmholtz and Du Bois-Reymond, or with Lotze and Herbert Spencer, towards the other party, to whichever of the two one happens to belong. For my own part, I have no great confidence in the permanency of the actual reconciliations thus far effected; and this both because they have been made for the most part by men of only second-rate quality, and also because they have been quite too super-

ficial in the selection of subjects on which to make the attempt at reconciliation. But the spirit is admirable; and good results cannot fail to follow in the near future.

For science and philosophy will always exist; neither can expel the other from the region of human interests and human endeavor; indeed, no rigid demarcation can ever permanently divide them; each will flourish only in dependence upon the other. Moreover, minds whose interest is chiefly in facts and whose skill discovers itself chiefly in collection of, and lower generalizations from, facts, will always exist; nor will the race of other minds cease whose interest leaps forward toward the places from which to survey the more ultimate meanings of the facts, and whose greatest skill shows itself in the wider speculative treatment of them. And occasionally great minds will be vouchsafed to the race, who will combine the ability to acquire a large amount of scientific data of various kinds with skill in philosophical analysis and a genius for philosophical synthesis; and these minds will be among the greatest benefactors of mankind with respect to the development of both science and philosophy. For philosophy is but wild and mischievous speculation, unless it build itself upon the concrete and particular sciences; and science is but the unsatisfying husk of knowledge, is without rational self-consciousness and highest import and divinest interest, unless it intelligently lend itself to help, and to be helped by, philosophy.

But of all the particular sciences it is psychology which stands in the most intimate relation to philosophy. We are in this day making an attempt, both valiant and in large measure wise, to separate between the science of mental phenomena and those metaphysical assumptions which have hitherto so largely overlaid and suppressed the growth of the science. In the interest of this separation we are told that a mixture of metaphysics and psychology as 'a natural science' spoils both ingredients, and, as a mixture, is apt to please neither of the two classes of patients for whom it may be supposed to be prepared and prescribed. This is true; although the truth depends chiefly upon the proportion of the ingredients which enter into the mixture.

Yet there is another side to all this which we cannot afford

to lose out of our total account. We have seen that it is difficult to pursue any form of a so-called 'natural science' without being called to consider, philosophically, its principles, their import, and their relation to the principles of other more or less closely allied sciences. The moment we begin to strive for a knowledge of principles, however, we come perilously near to the border-line—all invisible as it is—between science and philosophy. But, however this may be in the case of the physical sciences, there can be little doubt that the relations between psychology and philosophy are much more intimate. They are *so* intimate, indeed, that many of the most profound students of both, approaching them from varying points of view, have declared it to be impossible to separate between the two. It is well known that Herbart—to whom, in spite of his many errors, the modern science of psychology owes an enormous debt—declared: "The whole series of the forms of experience must be investigated twice over, once metaphysically and then again psychologically;" although he adds that these investigations must lie "side by side" and be compared so that we may never again confuse them. His most distinguished disciple, Volkmann von Volkmar, whose work on psychology, although I differ *in toto* from many of its conclusions, seems to me the most mature and magnificent of modern times, declares it to be impossible to separate between psychology as a science of mental phenomena and rational psychology, or the philosophy of mind. While Wundt, who differs very widely in method and conclusions from the Herbartians, affirms that the relation of psychology to philosophy is so close and peculiar that the partition of sovereignty between the two is an abstract scheme which, in the presence of actuality, must always appear unsatisfactory.

It is both significant and amusing to notice the actual behavior of many who theoretically deny that any such intimate relation must be acknowledged. For example, Höffding, in his most interesting and excellent treatise on psychology, after formally announcing that he proposes to treat the subject solely in a scientific way, almost immediately, and without waiting to marshal his facts, declares philosophical monism to be the only tenable view of the relations of mind

and body. And it is not long since I read in a magazine article, designed to set forth results in experimental psychology, the astonishing statement that no truly 'scientific' (*sic*) psychologist in these days held any other view on this question than the monistic; it would seem, then, that all dissenters on philosophical grounds from the modern Spinozism are to be read out of the ranks of science by this ardent young brother.

Now I do not mention these two classes of opinions for either confirmation, denial, or debate. That a worker in psychology may conduct an elaborate series of experiments, or discuss some important psychological principle, without once raising the questions in discussion between monism and dualism, materialism and spiritism, there can be no doubt. But surely psychology has as much right as has physics to its speculative hypotheses and supreme generalizations, if only these are kept in their place of close dependence on observed facts and sound reasoning. Much more than this is, in my judgment, however, true. For the relation of psychology, as a science, to the philosophy of mind, and through it to all philosophy, is so intimate and binding that not one of the larger psychological problems can be thoroughly discussed without leading up to some great debate in the field of philosophy. As long as psychology is naturally propædæutic to philosophy every one must be puzzled to tell just when he has crossed over the line and left the plain paths of science behind in order to get lost in the jungles of metaphysics.

If time permitted, this general statement might be enforced with almost indefinite detail. Thus it is exceedingly difficult, if not impossible, to give a thorough psychological discussion to the phenomena of perception by the senses without taking some position—at least an implied one—respecting the philosophical questions in debate between Realism and Idealism. Who would willingly undertake to separate strictly between the psychology as 'natural science' and the psychology as philosophy that are involved in the Empiricism of Wundt and Helmholtz, and in the Nativism of Dr. Ward or of the exceptionally admirable treatise of our own Professor James? This relation of well-nigh inseparable intimacy must continue to exist, and it will survive all warnings and all ex-

hortations ; because it is not, in the last and supreme and most difficult effort, some account simply of the intensity and content and time-rate of sensations which psychological science has to render ; it is rather of the faiths and fears and opinions and knowledges of mankind about things. And as the late Professor Croom Robertson said : " We *may* view knowledge as mere subjective function" (that is, psychologically) ; " but it has its full meaning only as it is taken to represent what we may call objective fact, or is such as is named (in different circumstances) real, valid, true." But he goes on to say : " Philosophy, on the other hand, is the theory of *knowledge* (as that which is known)." Yet again, we agree further with Professor Seth when he says : " It is evident, then, that philosophy as theory of knowledge must have for its complement philosophy as metaphysics or ontology." Putting all these declarations together, what can be made to follow besides the obvious proposition that a full-orbed science of psychology is propædæutic to and implicative of both epistemology and ontology ?

This Association is formed in the interests of a science of psychology ; it cannot therefore be expected to occupy its time and energies largely in the discussion of philosophical problems. Its members, however, would be something either more or less than completely human if they took no interest in any of these problems. The preceding remarks have been designed to introduce the exhortation that, since, from the very nature of our science, we shall scarcely always be able to avoid all seeming of entanglements more or less epistemological and ontological (and perhaps even ethical and theological), we should, first, add the philosophical spirit to our scientific intent ; and, second, be not only wise and cautious, but also tolerant and generous toward the various possible expressions of philosophical views.

A few words will suffice for suggestions on the third of my three points ; since—as has already been said—no considerable divergence of opinion is to be anticipated here. It is reasonable now to be very enthusiastic concerning the contributions which a scientific psychology may be expected to make toward the practical welfare of mankind. This fact seems to

me to place a certain weight of responsibility, which is of a quasi-ethical sort, upon such an Association as ours. It is sometimes supposed that the truly *scientific* spirit and attitude require a man to be interested in science solely for science's sake; or—to put the case in a yet more captivating way—in scientific truth for this truth's sake. Now I should not willingly be inferior to any one in devotion to the truth for 'its own sake' (as we are wont to say); and I trust that I have a sufficient admiration for the scientific spirit and for the splendid triumphs of modern science so called. At the same time my observations lead me to admit that not a few who cry most loudly in the name of 'science' show quite too plainly that it is chiefly for their own sakes; nor do I find that it has been the thing of smallest import with the truly great men in science that their pursuits enabled them to be, in no small measure, benefactors of mankind. And while they have been more unwilling than ordinary men to swerve a hair's breadth consciously from the strictest truth, and have had a generous confidence in that blessing which adherence to the truth brings, they have also recognized that the highest and truest truth which it is given us men to know, somehow seeks and finds an embodiment in conduct and character.

For example, astronomy, being originally devised in the interests of humanity as astrology, and then becoming truly scientific, has returned far more than all its costs as navigation, meteorology, natural theology so called, etc.

A fortiori is the obligation to be of practical benefit heavily laid upon psychology. The more I study and teach this science, the deeper does the impression become that it is able and destined to contribute greatly to the welfare of mankind. I shall now close these remarks with a brief enumeration of some of the well-known directions in which we all hope to see this impression realized.

First: the science of psychology may be expected to make large contributions toward the improvement of the art and practice of teaching. Pedagogics so called is already a considerable 'fad' in this country. It is, however, I assure you, something far different from the contempt born of professional pride which leads me to say that, with comparatively few

exceptions, the written and oral work on this important subject, in America, is shallow and misleading to an almost incredible degree. Meantime, an enormous waste—amounting to some three or four years in the ten or twelve of our public-school life, on the average, for each one of the millions of our school-children—is ceaselessly going on. Several causes combine to bring about this deplorable result; the most complete cure possible can, of course, be effected only by dealing with all these causes. But one of the most important helps to improvement must come through the instruction of the teachers of these children in the principles of a truly scientific psychology. And such instruction must emanate from the highest expert sources, and penetrate to the lowest strata and the remotest regions in the public-school system. It can never come in the form of half-baked treatises put forth by writers who, however seemingly successful they may have been in practice, have no scientific understanding of the principles on which even their own—too often merely apparent—success has been based.

Again, the science of psychology may be expected to contribute much to the science and practice of medicine,—especially, of course, in the department of neurology. Even modern surgery has already been guided by the help which physiological psychology has rendered in the discoveries, since 1870, in the localization of cerebral function. Looked at from a truly rational point of view, what can be more amazing than the fact that thousands of doctors are to-day treating patients suffering from 'mental' disease, who themselves never made the slightest study of mental phenomena, sane or abnormal, in any scientific way? With so many quacks, on the one side, medicating the mind with drugs, is it greatly to be wondered at that there are so many cranks on the other side who are advocating the treatment of all disease with 'mind-cure' or 'faith-cure'? In my opinion the time will come when no reputable medical school will think of giving a diploma to a student who has not made a thorough study of psychology, at least as far as its elements may be pursued from the physiological and experimental points of view.

In the diagnosis and treatment of the insane, the incorrigible, the idiotic, etc., scientific psychology is surely destined

to exert a growing influence. In time it will come to appear that the student of anthropology, of criminology, or of sociology, who has failed thoroughly to lay his foundations in the modern psychology has been guilty of an oversight or neglect fatal to his highest success. Nor will certain forms of jurisprudence long continue to disregard their natural relation to the scientific study of mental phenomena. As civilized nations come to distinguish between the man who is fit to be a 'keeper' of the insane or the criminal, and the man who is fit to give expert testimony to distinguish between the insane and the sane criminal, the advantages of prolonged psychological investigation for the improvement of jurisprudence will be more clearly discerned.

But there is no need to specialize further. In general, why should we not expect to see our science contributing to the improved conduct and character of men, in the school, in the court-room, the prison, and the asylum? Nay, I am not without hope and expectation that even the sacred offices of the religious teacher, as well as the no less sacred offices of the teacher of ethics by parental influence—of the mother whose breasts with their stores of nourishment, and face-to-face intercourse with the infant according to principles which regulate the earliest sensory-motor and imitative functions, fix the lines of behavior and of destiny—may all be helped and blessed in no small degree by the recent rapid advances of human psychology. And this is the chief reason why I close, as I began, with words of cheering reminder that this Association should enter upon its career with a sufficiently generous estimate of its privileges and of its responsibility.