cannot become one. It would be vain for it to attempt to duplicate the outfit of a modern university.

Its mission and its opportunity is *to utilize the existing mechanism* of the scientific departments *of all the different American universities.* In some sense also it may coordinate them and unite them.

At present, at least, there seems to be no place for a National University at Washington, certainly not in the sense that another university should be added to those that now exist in the country, like them or only a little better than any one of them.

By coordinating and uniting what now exists, the Smithsonian Institution may well furnish, at least in reference to the aggressive scientific work of the country, the beginnings of such a National University as is really needed.

I think it would be practically possible to make a beginning in this direction in the following way:

1. Establish and recognize a certain number of scientific departments, say fifteen at the start. Let all these be recognized as constitutive parts of the Institution.

2. Appoint, by careful selection, a committee of three men, the most eminent in their lines to be found in the country, to represent each department. (This the least essential part of my suggestions.)

3. Make one man the chairman and assign him a salary appropriate to the work expected of him.

4. Let these men, the chairmen, remain, if so already, professors in active service in the universities where they belong. Secure for them, from these universities, the right to spend a certain portion of each year at Washington, say six to ten weeks, in some cases perhaps much less. Let their salaries be additional to their university salaries, in case their universities consent to allow them the time as a vacation; otherwise make these salaries a portion of their university salaries. The latter course may be necessary in cases where a man is regularly absent from his university work as much as one-third of the university year. This plan would be of advantage to the men, because of the opportunity and the prestige; to their universities, because of the advantage it would be to the men themselves; to the Institution, because of the work they would do, better and larger than the Institution could secure from men whose entire services it would be able to obtain.

5. Each man put in charge of a department would do such work in upbuilding and helping his department as he, in consultation with his committee, found practical and advantageous to do. Some could devote themselves to the collections; some would lecture or arrange courses of lectures; some would organize, stimulate and assist work in their departments going on in different parts of the country. Some would use the opportunity to interest the National Government in enterprise akin to their work, and to influence the conduct of those already undertaken.

This is a suggestion of a way to begin what would, I believe, develop into something of great use to the country, and would furnish a true and fit utilization of the existence of the Institution in its present habitat and with its present conditions.

Sincerely yours,

Benj. Ide Wheeler.

SCIENTIFIC LITERATURE.

Outlines of Psychology. By Wilhelm Wundt. Translated by Charles Hubbard Judd. Leipzig, Wilhelm Engelmann. 1897. 8vo, pp. 342.

An Outline of Psychology. By Edward Bradford Titchener. New York, The Macmillan Company. 1897. 8vo, pp. 352.

The fundamental aim and interest in both these treatises is the instructional one; while by no means limited to this phase of utility, the volumes are primary text-books and may be judged by their fitness to increase the efficiency and attractiveness of the teaching of psychology. Such a verdict would be much easier to reach were there a more complete agreement as to the content or the methods, the order of exposition or the perspective of importance, of the several trends of investigation that lend diversity as well as frequent confusion to psychological discussions. But the 'psychologies' are unmistakably converging both in matter and manner, and it is becoming less

hazardous to predict the general nature of the contents of a volume upon the basis of the occurrence of the word 'Psychology' on its title-page.

The two works are, moreover, quite similar in size and scope; they are equally methodical and systematic; they reflect in each case the well defined convictions of the author, and the author in each case is an experimentalist thoroughly in touch with a rigid scientific conception of the methods and problems of mental investigation. A still further note of agreement is to be found in the strong insistence upon the specifically psychological aspect of the questions considered; physiological considerations are reduced to a minimum, and philosophical speculations are, in almost all instances, avoided, except when they seem to be required to furnish a basis for psychological interpretations. The reader never loses sight of the fact that the subject under discussion, whether sensation or perception, whether attention or movement, whether the sentiment or reasoning, is always treated as a strictly and exclusively psychological problem, as a description, classification, interpretation, analysis and explanation of a mental process or product. This trait gives a very impressive sense of consistency, order and completeness to the expositions. It arouses the agreeable feeling that, in spite of all the discussions and controversies, in spite of all schools and attitudes, there really is a science of psychology; that psychology is not merely a shapeless region as yet unoccupied by the adjoining domains of the sciences and upon which these sciences may encroach at pleasure, but a definitely organized country with distinctly recognizable boundary lines. Of course, this agreeable feeling is apt to be disturbed when we turn to other phases of modern psychological literature; but it is a welcome resource, and particularly so for the student to have such an exposition to fall back upon. This end is gained at a considerable saccrifice of suggestiveness and attractiveness; but it is obviously the deliberate plan of both authors, and in both cases the plan is well carried out.

As between the two—for the odium of comparison does not obtain, when the two things compared are really comparable—the preference of American teachers and readers will be for Professor Titchener's work. The American student seems to require not merely a road-map and sign-posts, but a personal guide, or at least an illustrated and attractive guide-book; he needs not merely an opportunity to go right, but an incentive to keep going, as well as frequent corrections of tendencies to pursue misleading and aimless side paths. Such direction he is much more likely to find in Professor Titchener's pages than in those of Professor Wundt; he is not likely in either case, however, to find as attractive a path as he had hoped for, and will find many regions through which the path is difficult to follow and by no means easy when found. Psychology has a very unfortunate reputation in the minds of the college student, as a study peculiarly difficult, to be pursued by methods unusual and intricate. A perfect text-book would minimize the grounds for such a reputation by constantly assimilating the unfamiliar by the aid of the familiar. Many a student who enters upon the study of that section of psychologic optics dealing with the perceptive powers of the outlying parts of the retina fails to obtain the proper results, because of his difficulty in fixing his gaze at one point and his attention at another, or because he allows his eyes to roam about when they should be rigidly fixed. The usual and useful method of seeing is to focus the gaze and the attention together and to allow the eyes freely to move about and explore the field of view, but for the study of the analysis of space perception it is necessary to overcome this tendency and to acquire an unusual mode of vision. Such, in some measure, is the relation between the daily mental experience by means of which every one acquires a real acquaintance with mental processes and results and the technical study of psychology. But the contrast between these two attitudes should not be allowed to interfere with the easy and attractive transition from one to the other, nor with the correct appreciation of the function and place of each. The student should not be tempted to observe the world by indirect vision, but he should be led to acquire the tendency to observe unapparent details and to gain an insight into the significance of what is common and obvious. It is

just here that a strictly systematic, rigidly methodical and abstractly analytical text-book of psychology will fail as a pedagogical instrument. If it be a sound psychological doctrine that assimilation demands attention and attention is fed by interest, then the creation and maintenance of an interest is an essential of every text-book, as it is of every teacher. It may be well urged that for this purpose an ounce of teacher is worth a pound of text-book, but even the teacher is better equipped to inspire if he preaches from an inspiring text.

It remains to indicate very briefly the distinctive features and contents of the two books. Following an introductory chapter upon the nature of psychological problems, Professor Titchener devotes three chapters to the simplest element of consciousness, sensation, treating it in its qualitative and quantitative aspects and dwelling as well upon the methods of studying sensation. The affective side of mental life is considered in three somewhat widely separated chapters, first as simple affection, then as feeling and emotion, and again as sentiment. Similarly the will, the active side of psychic phenomena, is considered, first as conation and attention, then as voluntary movement, and (in connection with other processes) in the reaction synthesis. The elaborations of sensation, the complexes to which they lead, are treated under the usual headings—perception, ideas, recognition, memory, imagination, self-consciousness and reasoning. It is thus apparent that the method and order of exposition begins with the simplest elements of consciousness—the last results of analysis—and then considers in turn the compounds and elaborations into which these elements are built up.

Professor Wundt's scheme involves a more elaborate systematization. He devotes considerable space to the general methods and problems of psychology by way of introduction, and then discusses the processes of mental life; first, as psychical elements (sensation and simple feelings); second, as psychical compounds (ideas of intensity, space, time, location, etc., as also composite feelings, emotions and volitional processes); third, as interconnection of psychical compounds (consciousness, attention, association, memory, apperception, etc.); fourth, as psychical developments (the mind of animals, of the child, of society and the race); and finally concludes by the discussion, under the title 'Psychical Causalty and its Laws,' of a problem which belongs quite as much to philosophy as to psychology.

As a translation inherently difficult the result is creditable; but it hardly reaches the ideal criterion of the art that conceals art, for the book seems un-English on every page. The type, the binding, the manner of construction, are all unmistakably German and, together with the foreign terminology and mode of presentation, detract considerably from the possible attractiveness of the volume to the English reader.

Viewed as independent contributions to psychology, both works present a considerable measure of originality. The student of Wundt will naturally turn to his other writings for a more complete exposition of his interpretations of psychological problems, but will find in the 'Outlines' (for instance, in the discussion of psychological methods and classification) many pages that form an essential contribution to his published work. Similarly in Professor Titchener's volume one recognizes many a doctrine and exposition that reflects the outcome of special and original investigation, as well as a position resulting from recent research. Viewed both as text-books and as contributions to psychological discussion, the volumes may unhesitatingly be pronounced welcome and interesting; the further proof of their utility must await the test of time and use.

JOSEPH JASTROW.

UNIVERSITY OF WISCONSIN.

GEOLOGIC ATLAS OF THE UNITED STATES.

Folio 23, Nomini, Maryland-Virginia, 1896.

This folio consists of four pages of text signed by H. N. Darton, geologist, a topographic map of the district, a map showing the areal geology, and a map showing the distribution of underground waters and artesian wells. The scale of these maps is 1:125,000.

The area represented in this folio is about 938 square miles, which lies partly in Virginia and partly in Maryland. In Virginia it comprises nearly all of Westmoreland county, with parts of Essex, Northumberland and Richmond,