negative result, even after exposure to the oxonized air for twenty minutes at a time on four successive days. In another experiment several test organisms (Bacillus anthracis, Bacillus pneumoniæ of Friedlander, Staphylococcus pyogenes aureus, Staphylococcus pyogenes albus, Bacillus muriseptiicus, Bacillus crassus sputigenus) were exposed on silk threads for twenty-four hours in an atmosphere containing 4.1 milligrammes of ozone to the litre of air (0.19 volumes per cent.). The result was entirely negative. When the amount was increased to 13.53 milligrammes per litre the anthrax bacillus and Staphylococcus pyogenes albus failed to grow after twenty-four hours' exposure. The conclusion reached by Nissen, from his own experiments and a careful consideration of those previously made by others, is that ozone is of no practical value as a germicide in therapeutics or disinfection."

From a practical point of view the use of the X-ray in the practice of the Chicago doctor, to whom the above quoted explanation of its therapeutic action is attributed, appears to have been quite successful. He says:

"For the last eight months I have had patients under the X-ray in my laboratory from 9 a. m. to 6 p. m., duration of treatment varying from a-half to four hours at each treatment, and not once with any bad result in any case."

Now it is evident that a physician who has patients coming to his office from 9 a. m. to 6 p. m. every day is in the enjoyment of a very handsome professional income. And if, as I imagine, many of these patients are well-dressed ladies with more leisure than judgment, they are no doubt satisfied to pay well for the opportunity of having the latest *scientific* treatment applied to their cases and to await their turn in the anteroom of this distinguished 'professor of electro-therapeutics.'

The article from which we have quoted, and which appears to answer all the purposes of a free advertisement, concludes as follows:

"It must not be forgotten that electric phenomena are very powerful, and not every man who can buy a machine is capable of applying it. The electric machine must be as skillfully adjusted to each individual as the microscope to a specimen submitted to it. It is a treatment full of danger if ignorantly or rashly handled, but beyond price in value to the skilled and careful electro-therapeutist."

We do not propose to prejudge the question of the possible therapeutic value of the X-ray, but we think it safe to predict that it will not be found of any value for the destruction of pathogenic bacteria in the tissues, inasmuch as it has been shown by several competent observers to have very little, if any, germicidal action; and because there is no experimental evidence which justifies the belief that these low vegetable organisms can be destroyed by any physical or chemical agents which would not at the same time destroy the vitality of the less resistant cellular elements of the tissues.

If time permitted I might further illustrate the temporary successes of recent pseudo-scientific discoveries by referring to the 'cryptococous xanthogenicus' of Domingos Freire, of Brazil, the Bacillus malariæ of Klebs and Tomasi Crudelli, etc., etc.

The spectacle of a learned clergyman, supplied by nature with a brain and a pair of lungs, sitting day after day with an 'electropoise' attached to his leg for the purpose of 'taking on oxygen freely from the atmosphere' recalls the 'blue grass craze' of twenty-five years ago.

George M. Sternberg.
Washington, D. C.

THE AMERICAN PSYCHOLOGICAL ASSOCIATION.

The fifth annual meeting of the American Psychological Association was held in Boston, Tuesday and Wednesday, December

29 and 30, 1896, under the presidency of Professor G. S. Fullerton, of the University of Pennsylvania. There were three formal sessions of the Association, one on the morning of the 29th, held at the Harvard Medical School, and two sessions on the 30th, held at the Peabody Museum of Archæology in Cambridge. The members of the Association very generally attended the discussion on 'The Inheritance of Acquired Characteristics' before the American Naturalists on the afternoon of the 29th, psychology being represented in the discussion by Professor James, of Harvard. Together with the other affiliated societies, the Psychologists were present at Mr. Agassiz's lecture and reception on Tuesday evening, at the luncheon given by the President and Fellows of Harvard College on Wednesday, and at the formal dinner of the societies at the Hotel Brunswick in Boston, on Wednesday evening. There were forty-five members in attendance, the largest meeting since the organization of the Association. Owing to the number of distinctly philosophical papers, one session of the Association was given up to papers of that character. The scientific program was as follows:

1. *The Physiology of Sensation.* By E. A. SINGER, of the University of Pennsylvania.

States the fundamental question as: What would be an ideally complete physiology of sensation? The method employed in answering the question would establish an analogy between what has been regarded as progress in the past and what should be sought by a progressive psychology of the future. The result of such an analogy is stated in the following form: Wherever we know anything about the psychology of sensation we find that the correlate of a mental difference is a structural physiological difference. Where we are yet in ignorance as to the physiological counterpart of a mental difference we should assume it to be a difference in structure rather than a difference in functioning of the same structure. This view is to be contrasted with such opinions as would regard the physiological counterpart of intensity as the greater or less activity of the same nervous structure; feeling tone as the greater or less disintegration, or as dependent upon conditions of greater or less nutrition of the same structure, etc. Some attempt is made, rather by way of illustration than as framing a completely tenable hypothesis, to suggest a physiology of these so-called properties of sensation that would relate them to quality of sensation. Thus the physiological basis of intensity differences is sought in part in the different end organs affected in greater or less reaction to a stimulus; in part also in special apparatus suggested by the allied nature of intensity and saturation in color sensations. Feeling tone is distinguished from pleasure and pain; the physiology of the former being related to that of the emotion, the physiology of the latter to that of the special senses. Local sign presents the inverse problem as to how sensations conditioned by confessedly different nervous structures should come to be classed together. The answer suggested is that the classing together of locally different sensations and qualitatively similar is conditioned by the formal likeness of the end organs affected, they determining a likeness in the adequate stimuli and in the general way of behaving of the sensation. Recognized likeness and difference of sensations are found to involve psycho-physical reflection.

2. *Intensity of Sensation.* By JAMES E. LOUGH, of Harvard University.

Sensations forming an intensity series have this characteristic which distinguishes them from a qualitative series, namely, that the intensity series goes towards or from

zero—the vanishing point—while a purely qualitative change leads neither to or from the zero point of sensations. Theories of intensity of sensations may be classed in general under two heads: (*a*) that the stronger sensation *is* the weaker sensation plus more of the same sensation—following an analogy from the physical world which may prove dangerous, and exposing psychology to the troublesome presupposition that our psychic elements (sensations) are compounds; (*b*) that the intensity series is merely a qualitative series, but ordered in a series towards or from zero by the presence of a second series of sensations, *e. g.*, brightness sensations or muscular sensations. It would seem much more satisfactory to discover in the nature of the psycho-physical process itself that which shall give to sensations the characteristic of an intensity series. Accordingly this hypothesis is offered: Any sensation of a given quality and intensity that may arise depends upon a certain physiological condition which is reached only after passing successively through a series of other physiological conditions, each of which is but differing in degree from zero to the given sensation. That is, any sensation depends upon the physiological basis which contains, in a temporal series, the bases of all the weaker sensations of this particular quality. The final neural condition, after passing through all the intermediate steps, may be called the 'maximum effect' of the stimulus. By a study of the intensity of sensations produced by a stimulus of a known intensity acting for a time less than that necessary to produce its maximum effect, it is found that this intensity is exactly proportional to the duration of the stimulation. Concerning the nature of the psycho-physical process, nothing is postulated save that the basis of the stronger sensation contains that of the weaker in the time series as stated above.

3. *Report of Experiments on the Reduction of the Tactual Double-Point Threshold by Practice and on the 'Vexirfehler.'* By G. A. Tawney, of Beloit University.

The first object of the experiments was to examine the view of Volkmann and Fechner that, by daily practicing some one spot of skin in the perception of two points, the threshold for this perception is reduced, not only for the spot actually practiced, but also for the symmetrically opposite spot on the other side of the body. A number of threshold determinations were made on different parts of the body varying in number from six to thirty-two for each subject. One of these spots was chosen for special practice, which continued for a period varying from two weeks to a month. At the end of this time the threshold determinations on the six to thirty-two different parts of the body were repeated in order to compare them with those made at the beginning of the practice series. The instrument used was a simple pair of compasses. The results show unmistakably that where any reduction of the threshold occurs as a result of practice it occurs over the entire surface of the body; it demands, therefore, a central explanation. The paper further discussed the nature of the 'Vexirfehler' (double-point illusion). It was assumed that the double-point illusion is the result of suggestion and it was sought to free a subject whose threshold formerly could not be determined from the suggestion involved. The experiments seemed to show that the reduction of the threshold by practice is, to a great extent at least, a result of suggestion. Several series were carried out for the purpose of studying the psychosis underlying the 'Vexirfehler.' The results seem to show that this illusion is mainly due to auto-suggestion, although physiological factors may play a subordinate part.

4. *Comparison of the Times of Simple Reactions*

and of Free-Arm Movements in Different Classes of persons. By ALBERT L. LEWIS.

This paper gave the results of nearly 9,000 experiments on American men and women and on male negroes and Indians. The relative order of these four classes in reacting to sound was found to be arranged from shortest to longest, Indians, American men, Negroes and American women; to light; American men, Indians, American women, Negroes; to touch; Indians and American men the same, Negroes third, American women fourth. With regard to the mean variations of the average reaction times, the order was: in sound; American men, Indians, American women; in light, American men, Indians, Negroes, American women; in touch; Indians, American men, American women, Negroes. The conclusion is drawn that there are characteristic variations in the reaction time and rate of movement of classes of persons; that a close relation exists between reaction time and rate of movement; that a number of reactions is necessary to give a characteristic result in each individual case.

5. *Researches in Progress in the Psychological Laboratory of Columbia University.* By J. MCKEEN CATTELL.

Among the subjects in course of investigation the following were mentioned as likely to be completed soon. Mr. W. Lay, lately Fellow in Philosophy, has, for several years, been studying mental imagery by various methods. In addition to questions such as those proposed by Mr. Galton, others have been set more independent of immediate introspection and extending to auditory and motor imagery. Among others, including musicians, 100 leading artists have, in letters and interviews, described their imagery. Imagery has been investigated by its effects on memory, and in the compositions of poets and other writers. Mr. Lay has, finally, given special attention to his own imagery and associations. Mr. S. I. Franz, Fellow in Psychology, is investigating after-images. He has already published experiments on the threshold for after-images, and is now studying the duration and nature of the after-image as dependent on the intensity, duration and area of stimulation. He is able to correlate the effects of these magnitudes for consciousness and to analyze physiological and mental factors. The individual differences are of interest, for, with the same stimulus, the image differs greatly with different persons. Mr. L. B. McWhood, Fellow in Psychology, is studying the motor accompaniments of the perception and emotional results of music. The movements are a series of taps made as rapidly as possible and a pressure not a maximum, but kept as nearly as may be constant. The subject decides on his preferences, etc., for the tones and combinations used, and these are compared with the motor effects. Mr. H. E. Houston, Scholar in Psychology, is studying color nomenclature with special reference to children. The growth in accuracy and extent of the color vocabulary in schools has been determined, and the attempt will be made to find and set a normal nomenclature for colors and other classes of sensations. Other researches were mentioned but not described.

6. *The Psychic Development of Young Animals and its Somatic Correlation with special reference to the Brain.* By WESLEY MILLS, McGill University, Montreal.

This paper was based on researches on psychic development and on the development of the cerebral cortex in the same groups of animals. As somatic correlation other than that of the brain has been considered in other papers, this phase of the subject was not especially treated in this paper. The main conclusions are as fol-

lows: In the dog and the cat there is a period extending from birth to about the time of the opening of the eyes characterized by reflex movements, the sway of instincts and the absence of intelligence. The advance in movement, first of the limbs and later of the head and face parts, together with the psychic progress associated with this, is correlated with rapid development of the cortical centers for the limbs in the first instance, and later for the head and face in the period immediately following the blind stage. This is more rapid and more pronounced in the cat than in the dog, and is correlated with greater control in the cat over the forelimbs and with certain physiological and psychic developments characteristic of the cat; similar observations were made upon rabbits and cavies. The psychic manifestations of the pigeon and fowl have not the same sort of cerebral cortical correlates as the animals referred to above.

7. *The Organization of Practical Work in Psychology.* By Lightner Witmer, of the University of Pennsylvania.

Under the designation of practical work in psychology was included: (1) The direct application, whether by professional psychologists, practicing physicians or teachers, of psychological principles to therapeutics and to education. (2) Such psycho-physical investigation of mental conditions and processes as may serve to throw light upon the problems that confront humanity in the practice of medicine or teaching. (3) The offering of instruction in psychology to the students of medicine or to teachers that contains a promise of future usefulness to them in their respective professions. Thus the plan has a view to the professional practice of psychology, to research and to instruction as these stand related to the two professions of medicine and teaching. In order that psychology may become a useful possession of the medical man, details of organization must be perfected that will bring about a union of the department of psychology with the professional departments of the medical school. Professor Witmer then went on to suggest details of organization as part of a plan for the development of research work and instruction useful to the community and to the teacher.

8. *Psycho-physical Tests on Normal School and Kindergarten Pupils.* By Miss Mary P. Harmon.

These tests form part of a general scheme which proposes the development of a series of tests which shall be applicable alike to the oldest and youngest pupils in all grades from the kindergarten to the normal school. The intention is to repeat, from year to year, a series of experiments of which a few are included in this preliminary report, as the children now in the kindergarten pass through the various grades. The tests reported upon included family statistics, age, height, weight, lung capacity, simple reaction time to sound and rate of free-arm movement.

9. *Personal Experiences under Ether.* By Wesley Mills, of McGill University, Montreal.

This paper related the experiences of the writer during and immediately subsequent to the adminstration of ether, together with a later experience that seemed to produce a profound impression.

Brother Chrysostom, of the Manhattan College, presented an informal paper, entitled *A Preliminary Study of Memory;* and Professor E. C. Sanford, of Clark University, gave a *Demonstration of an Eye Plethysmograph.*

A paper by Mrs. C. Ladd Franklin, on *Color Blindness and Willem Pole: A Study in Logic,* was read by title.

The titles of the philosophical papers

read on Wednesday morning were as follows:

1. *Philosophy in the American Colleges.* A. C. ARMSTRONG JR., Wesleyan University.
2. *Tests of Current Theory Touching Mind and Body.* DICKINSON S. MILLER, Bryn Mawr College.
3. *The Relation of Mind and Body.* C. A. STRONG, Columbia University.
4. *Is the 'Transcendental Ego' an Unmeaning Conception?* J. E. CREIGHTON, Cornell University.
5. *The Relation of Pessimism to Ultimate Philosophy.* F. C. S. SCHILLER, Cornell University.
6. *The Standpoint and Method of Ethics.* JAMES SETH, Cornell University.
7. *A Generalization of Immediate Inferences.* J. G. HIBBEN, Princeton University.
8. *The Negative in Logic.* A. T. ORMOND, Princeton University.

The afternoon session on the 30th was opened by the address of the President, Professor Fullerton, of the University of Pennsylvania, entitled *The 'Knower' in Psychology.* It was an examination of the nature of knowledge from the standpoint of the psychologist, and the criticism of the 'self' in its knowing function, as it is familiar to readers of philosophy and psychology. Professor Fullerton criticised the Neo-Hegelian doctrine of the '*self*' as a unifying activity in consciousness, and also the view of the self that regards it as a noumenon or metaphysical entity lying behind consciousness and accounting for it. The positive views advanced by the speaker were as follows: The idea that there must be a self distinct from the contents of consciousness to explain consciousness arises out of a mere misconception, and is to be regarded as a survival from an unreflective past. The primary uncritical notion of the self identifies it with the body. In animism we have a duplicate of the body regarded as the self, the knower and doer. In the history of philosophy this notion is made more abstract and unintelligible with the progress of reflection, and in successive systems the function of the self as knower becomes more and more unmeaning. But knowledge is a psychosis like any other psychosis, and it is the duty of the psychologist to analyze and describe it. He must, moreover, use the same psychological method which he uses in treating of sensations or of any other mental elements, and must not try to find an explanation of knowledge by having recourse to a something which lies beyond the realm of psychology as science.

Following the President's address there was held a business meeting of the Association, and a report from the Committee on Physical and Mental Tests, appointed the year before, was presented and accepted. This report is reproduced, as the elaboration of such tests is a matter that concerns several sciences.

PRELIMINARY REPORT OF THE COMMITTEE ON PHYSICAL AND MENTAL TESTS.

The Committee on Physical and Mental Tests appointed at the last annual meeting of this Association submits the following report:

The committee has drawn up a series of physical and mental tests which is regarded as especially appropriate for college students tested in a psychological laboratory. The same series would also be suitable for the general public and, with some omissions and slight modifications, for school children. The committee has had in view a series of tests requiring not more than one hour for the record of one subject. In selecting the tests and methods the committee regarded as most important those which seemed likely to reveal individual differences and development, but also took into account ease and quickness in making the tests and in interpreting and collating the results.

Each member of the committee selected a complete series of tests. The report includes these selections, together with brief descriptions of methods. After each test and method are placed the initials of the members of the committee recommending it.*

Preliminary Data: B. C. J. S. W.

Date of birth; birthplace; birthplace of father; birthplace of mother; occupation (including class in college, or, if not a student, the last educational institution attended); occupation of father; any measurements previously made. B. C. J. S. W.

Color of eyes; color of hair; right or left-handed. B. C. J. S.

Mother's maiden name; number of brothers; sisters; order of birth; age of parents at birth; birthplace and occupation of grandparents. W.

Two schedules of observations and records to be filled in, one by the recorder and one by the subject, as in the Columbia tests, with such modifications as experience shall make desirable. C.

A blank to be filled in by the recorder, noting asymmetry of head or body, color of eyes and hair, complexion, degenerative or other stigmata of head, eyes, ears, mouth, teeth, hands or feet, posture, gait, manner, coordination and speech, indications of intellectual, emotional and moral characteristics. W.

Physical Measurements: C. J. S. B. W.

Height, weight and size of head. C. J. S. B. W.

Breathing capacity. C. J. S. W.

Height sitting. C. W.

*We refer especially to two publications for descriptions of some of the tests: *Official Catalogue of Exhibits*, Department M., World's Columbian Exposition; *Section of Psychology*, Joseph Jastrow in charge, 1893; and Physical and Mental Measurements of the Students of Columbia University, J. McKeen Cattell and Livingston Farrand, *Psychological Review*, Nov., 1896. The following papers on the subject may also be mentioned: 'Mental Tests and Measurements,' J. McK. Cattell, with an appendix by Francis Galton, *Mind*, 1890; Zur Individual Psychologie, Hugo Münsterberg, *Centralblatt f. Nervenheilkunde und Psychiatrie*, 1891. Researches on the Mental and Physical Development of School Children, J. A. Gilbert, *Studies from the Yale Laboratory*, 1895; reported also by E. W. Scripture, *Zeitschrift f. Psychologie*, etc., X., 1896, and *The Psychological Review*, III., 1896; Der Psychologische Versuch in der Psychiatrie, Emil Kraepelin, *Psychologische Arbeiten*, 1895; La Psychologie Individuelle, A. Binet et V. Henri, *L'Année psychologique*, 1896.

The measurements should be made in the metric system. The weight should be taken in ordinary indoor clothing. The height should have the height of the heel subtracted. At least the length and breadth of the head should be measured. B. C. S.

Keenness of Vision: B. C. J. S. W.

The maximum distance at which diamond ($4\frac{1}{2}$ point) numerals can be read with each eye singly. B. C. J. S.

The illumination should be in the neighborhood of 100 candle-meters; about eight out of ten numerals should be read correctly at the rate of about 2 per second. The minimum distance should also be determined, if possible. B. C.

In addition or as a substitute, drawing a series of forms as recommended. J.

Use Snellen Test-types. S.

Some other substitute for these tests, to be suggested after satisfactory trial. W.

Color Vision: B. C. J. S. W.

Select as quickly as possible four greens from a series of wools; measure the time; if long, make further tests. C.

Combine with test of rate of perception by requiring subject to name, as rapidly as possible, a series of colors, either wools or papers. B. W.

Use the chart exhibited at the World's Fair. J.

Keenness of Hearing: B. C. J. S. W.

The distance at which a continuous sound can be heard with each ear singly. C. B. W.

Use some artificial external meatus if the test is to show small differences in sensibility. W.

The sound should be from a watch reduced to a standard. An arrangement should be used, by which it can be periodically cut off without the knowledge of the subject. C. S. B.

Use for this a stop-watch. J. S.

I endorse the stop-watch; it can be manipulated, so that the time is recorded, showing how long it took the subject to decide that the watch has stopped. J.

Perception of Pitch: B. C. J. S.

Adjust one monochord or pipe to another, the tones not to be sounded simultaneously. C. J.

Select a match from a set of forks, making a fixed number of vibrations per second more or less than a standard, *e. g*, standard 500 v. per second; other forks, 497, 497.5, 498, 498.5, etc.; 500, 500.5, 501, etc. B. S.

I prefer the adjustment to the selection method. The test can be made with two Gilbert tone-testers. J.

Fineness of Touch: C. J. S. W.

The æsthesiometer is unsatisfactory; the discrim-

ination of roughness of surfaces and touching a spot previously touched should be tried. C. J. W.

Sensitiveness to Pain: B. C. J. S. W.

The gradually increasing pressure that will just cause pain. The point or points in the body to be used to be agreed upon. B. C. J. W.

Perception of Weight or of Force of Movement: B. C. J. S. W.

Arrange a series of weights. B. J. W.

Make movements of equal force and determine the error. C.

The best method still to be developed. J.

Dynameter Pressure of Right and Left Hands: B. C. J. S. W.

Dynamometer. B.

In place of or in addition to the ordinary dynamometer test make movements of the thumb and forefinger and continue as rapidly as possible for fifteen seconds. C.

Use mechanical counter for this and take reading at end of every minute. S.

Thumb and finger dynamometer. Record best and worst of five trials. W.

Rate of Movement: W.

Distance of 35 cm. One preliminary trial with right hand in extension, then two trials in succession of R. E., L. F., L. E., R. F. Collate shortest of two trials under each typical movement. W.

Fatigue: B. C. W.

Muscular exertion. B. W. As described above. C.

Intellectual exertion. B. W.

Will Power: W.

The ability of the subject to respond after fatigue has set in to a suggestion of the experimenter with an extra effort of will. W.

Voluntary Attention:

Test by simple mental operations under distraction. B.

Coincident variations in Psycho-physical process. W.

The modifiability of the knee jerk, or of a sustained bodily process, such as rate of breathing or pulsation of a volitional muscular or intellectual process, when the subject's attention is engaged by some mental content. W.

Measure at the same time concentration or distraction of attention. W.

Right and Left Movements: J. W.

The accuracy with which movements are made to the right and left. J. W.

Some such test as this for indication of right and left-handedness. W.

I do not insist on this test as one of great importance. J.

Rapidity of Movements: C. J. S. W.

Taps on a telegraph key. J. W.

Movements requiring force, as described above. C.

Make short marks as rapidly as possible for twenty or thirty seconds, *e. g.*, | | | | |. S.

Trilling with two fingers and with five. W.

Accuracy of Aim: B. J. S. W.

Throwing a marble at a target. J.

Or striking a point upon the table with a pencil point. W.

Touch an insulated spot, as proposed by Scripture. S. B. Also for steadiness of hand. B.

Reaction-time on Sound: B. C. J. S. W.

The reaction to be made with the right hand with a signal about two seconds before the stimulus. B. C. J. W.

Five reactions to be made without preliminary practice; after the reactions have been made, the observer to be asked whether the direction of the attention was motor or sensory. B. C.

It is not much use to ask for direction of attention with most subjects. W.

Sensory and motor reaction with instruction, after the above test. B.

Reaction-time with Choice: B. J. W.

Use card sorting. B. J. S.

Rate of Discrimination and Movement: B. C. J. S. W.

100 A's in 500 letters to be marked or as many as can be marked in one minute. B. C.

One out of a number of geometrical forms to be marked: determine the number marked in 90 seconds. J. W.

Or colors, or pictures of objects. W.

Quickness of Distinction and Movement: B. J. S.

Rate at which cards are sorted. B. J. S.

Combine with reaction with choice. B.

With the effects of practice, etc., as proposed by Bergstrom. S.

Perception of Size: C. J. S. W.

Draw a line equal to a model line 5 cm. in length, bisect it, erect a perpendicular of the same length and bisect the right-hand angle. C. J.

Perception of Time: B. C. J. S. W.

The accuracy with which a standard interval of time, say ten or twenty seconds, can be reproduced. C. W.

Thirty seconds or one minute. W.

Memory: B. C. J. S. W.

The accuracy with which eight numerals heard once can be reproduced and the accuracy with which a line drawn by the observer at the beginning of the hour can be reproduced at the end of the hour. C. W.

Line to be identified. Ten numerals to be used. B.

Nine numerals. S.

A combined test of memory, association and finding-time as described in the catalogue of the Columbian Exposition. J. W.

Accuracy of observation and recollection as proposed by Cattell and by Bolton. J. W.

Memory-type: B.

Variations in use of 10 numerals; method as follows:

1. Show numerals in chance order and have subject write them from memory after an interval.

2. Speak numerals in chance order and have subject write them from memory after an interval.

. Show and speak in chance order and have subject write them from memory after an interval.

4. Show and have the subject speak them and then write them from memory after an interval.

Compare the results for indications of memory type and kind of imagery preferred. Question the subject as to his mental material in each case. B.

Apperception test of Ebbinghaus. B.

Imagery: B. C. J. S. W.

Questions proposed in the Columbia tests. C.

Methods should be worked out more fully. C. J. W. B.

Cf. Method under preceding head. B.

Make memory span tests, showing and speaking the digits at the same time, and ask the subject which sense (sight or hearing) he found himself using, and if either seemed to him a distraction. S.

The committee urges that such tests be made, so far as possible, in all psychological laboratories. It does not recommend that the same tests be made everywhere, but, on the contrary, advises that, at the present time, a variety of tests be tried, so that the best ones may be determined. Those who make tests which they regard as desirable are requested to send these with sufficient descriptions to the committee.

The committee hopes that the tests proposed may be discussed fully at the present meeting of the Association, and asks that the present committee be continued for another year.

(Signed,)
J. Mark Baldwin,
Joseph Jastrow,
E. C. Sanford,
Lightner Witmer,
J. McKeen Cattell, *Chairman.*

At the business session the following officers were elected: President, Professor J. Mark Baldwin, of Princeton University; Secretary and Treasurer, Dr. Livingston Farrand, of Columbia University; new members of the Council, Professor Josiah Royce, of Harvard University; Professor Joseph Jastrow, of the University of Wisconsin. The following new members were elected: Professor G. H. Palmer, Harvard University; Professor J. G. Hibben, Princeton University; Professor R. B. Johnson, Miami University; Professor F. C. French, Vassar College; Dr. E. F. Buchner, Yale University; Dr. Ernest Albee, Cornell University; Dr. C. H. Judd, Wesleyan University; Dr. Alice J. Hamlin, Mt. Holyoke College; Dr. G. A. Tawney, Beloit University; Mr. F. C. S. Schiller, Cornell University; Dr. C. W. Hodge, Princeton University; Mr. J. F. Crawford, Princeton University; Dr. C. F. Bakewell, Harvard University; Dr. David Irons, University of Vermont; Dr. Robert McDougall, Western Reserve Uuiversity; Mr. A. F. Buck, Union College.

An invitation was received from the British Association for the Advancement of Science to attend the next annual meeting to be held at Toronto, Canada, as members of the Section of Physiology. Upon the recommendation of the Council, it was moved and carried that such members of the Council as are able to attend be official delegates of the Association to the meeting and that such members of the Association as may be able, accept the invitation to attend

as members. An invitation was also received from the American Association for the Advancement of Science to join that Association. The Council recommended that all members who might feel so disposed present their names for election to that Association.

The time and place of the next meeting of the Association was left to the President to be decided in consultation with the Presidents of the affiliated societies.

After a vote of thanks for the hospitality extended to the Association the meeting adjourned.

LIVINGSTON FARRAND,
Secretary.

COLUMBIA UNIVERSITY.

THE AMERICAN FOLK-LORE SOCIETY.

THE eighth annual meeting of the American Folk-lore Society was held at Columbia University on December 29th.

During the past year the Society has lost two of its most esteemed members—its President, Capt. John G. Bourke, and Professor Francis J. Child, one of its founders and its first President.

The Society elected Professor Sidney A. Hartland and Dr. H. Steinthal honorary members.

The officers elected for 1897 were as follows:

President, Mr. Stewart Culin, of the University of Pennsylvania; 1st Vice-President, Dr. Henry Wood, of Johns Hopkins University; 2d Vice-President, Dr. Franz Boas, of Columbia University; Permanent Secretary, Mr. W. W. Newell, Cambridge, Mass; Treasurer, Dr. John H. Hinton, of New York City.

To facilitate closer cooperation with other scientific societies and to afford individuals greater opportunities to receive benefit from kindred organizations, the Permanent Secretary was authorized to arrange the time and place of the annual meeting and was instructed to give preference to the time and place of meetings of the American Psychologists and Society of Naturalists. The Permanent Secretary was further authorized to call a summer meeting at the time and place of the meeting of the American Association for the Advancement of Science.

The Society has recently published a volume of Current Superstitions, by Mrs. Fanny D. Bergen, and it has now in press a volume entitled Navaho Legends, by Dr. Washington Matthews.

A full programme of papers was presented, of which only a part can be here mentioned.

Miss Alice C. Fletcher's 'Notes on Certain Early Forms of Ceremonial Expression' developed the idea that among savage peoples the burden of the song is, to a greater extent than heretofore recognized, correlated with the emotion which the song is desired to express. Miss Fletcher has investigated this subject specially among the Omahas, and her studies in this direction are still in progress. Incidentally, the accuracy of repetition and pure preservation of native songs was mentioned; an example being an Omaha song, recorded by means of the phonograph, which agreed in every detail with the same song as collected twelve years prior.

'Ceremonial Hair-Cutting among the Omahas' was treated by the same speaker. The hair has been associated with strength in the lore of many peoples and has been treated as of close connection with the life and reality of the individual. Thus some peoples when giving a name and thus adding an important part to the personality of an individual think it necessary to counterbalance this act by cutting off a portion of the hair.

Mr. W. W. Newell's paper on 'The Legend of the Holy Grail' was intended to suggest that literary productions, under certain circumstances, may develop into folk-tales.