ical elements are invaluable. It is not strange that President Eliot said: "Manual training not only trains the eye and hand, but develops the habit of accuracy and thoroughness in any kind of work. It develops the mental faculties of some boys better than books do." Professor James, of Harvard, says that "The most colossal improvement which recent years have seen in secondary education lies in the introduction of manual training." And Dr. Stanley Hall says: "No kind of education so demonstrably develops brain as hand training."

The minority should have the benefit of this improvement and of those benefits most assuredly. So here is another splendid opportunity for the secondary school.

To a graduate of Harvard who has for years labored assiduously in secondary and higher technical education to establish a system of instruction which looks squarely towards modern developments in science and the industrial arts, it is extremely gratifying to find his *alma mater,* under the leadership and inspiration of its distinguished president, taking high ground both in the organization of technical branches of instruction and in the vindication of their dignity and worth. One is led to apply to Harvard the language the London *Times* used in speaking of the establishment of engineering courses in the University of Cambridge, England: "It is pleasant to see our oldest university, while remaining faithful to all the traditions of its venerable past, at the same time displaying an intelligent appreciation of the wants of the future, and affording to the most modern forms of learning the nurture and support which, for many centuries, it has afforded to those forms with which alone our forefathers were familiar."

C. M. WOODWARD.

June 4, 1903.

TEN YEARS OF AMERICAN PSYCHOLOGY: 1892–1902.

II.

THE RELATION OF THE ASSOCIATION TO OTHER SCIENTIFIC ORGANIZATIONS.

Our association began its career as an academic affair. Fourteen universities and one lunatic asylum were represented among the original twenty-six members. Just one third of the institutions were in New England and shared just fifty per cent. of the membership. Since then every meeting has been held under the wings of a university. Until the fourth annual meeting, the psychologists were content to stand on their own feet scientifically, and not to yield to the social attractions afforded by joining the numerous groups of scientists which were meeting here and there over the country. In 1895 the psychologists met for the first time with the American Society of Naturalists and Affiliated Societies. The philosophical pressure upon our organization came to something of a focus at this time, and was yielded to a year later, which was marked by a sudden influx of metaphysical papers and the formation of a section for the presentation of them. Seven meetings have been held with the naturalists, with whom a joint discussion has been held four times on various themes, in which a psychologist has participated as our representative. Our association has been invited four times to turn aside from its individual or annual way, and unite its associated interests with other scientific organizations, such as the American Association for the Advancement of Science and the British Association for the Advancement of Science. Joint sessions have also been held with the American Physiological Association, the Western Philosophical Association, and two summer meetings in connection with Section H,

Anthropology, of the American Association for the Advancement of Science have been authorized. We are now in active research cooperation, through representatives on joint committees, with the American Association for the Advancement of Physical Education, for gathering statistics and measurements, and certain other societies for preserving speech records. We have our three committees on physical and mental tests, vocabulary and bibliography. Once the pride of the association has been quickened into solicitude for the type of representatives of American psychology given standing in the international congresses of psychology. And here we are, one with numerous societies, bulked together in Convocation Week.

In accepting the overtures of scientific sociability our association has doubtless aided greatly in bringing about a change in that state of the public mind which once regarded the psychologists as something *sui generis,* who could not mingle in the truly social precincts of science. During the decennium there has appeared a decided recognition of the psychologists, at least, accredited through the affable hand and voice of other departments of science. Whether this scientific friendship extends so far as to include the very genius of what our science has to teach respecting both nature and mind is a phase of our growth which may well be reserved for more mature consideration. One might well say that all other sciences should affiliate with psychology, the true mother of science, inasmuch as she alone probes the sensory foundations of all our knowledge of nature and her processes. The present needs of our science make necessary a great deal of missionary work to be done on our part, and in affiliating our corporate interests, let us become fully aware of the doubling of the responsibility to our association and its fundamental issues.

TEN YEARS OUTSIDE THE ASSOCIATION.

It would be presuming too much in the face of the most general and well-known facts to imply that the chief features of the last ten years of American psychology are to be found within the history of our association. Having reviewed this in detail, we must now turn to that larger area of activity which lies without the organization, where we may, possibly, get a truer perspective of what the years have brought forth among us.

The laboratory represents, beyond all question, the most interesting feature in the recent development, and the largest promise for the future of psychology. Herein both the method of research and the pedagogy of the subject find their true abode. At the time of the first annual meeting of the American Association there existed some fifteen laboratories in America, fully equipped for research or in possession of special facilities for demonstration. They possessed an equipment which has been valued at about thirty thousand dollars. The institutions maintaining these laboratories were the universities of Pennsylvania, Wisconsin, Indiana, Clark, Nebraska, Harvard, Columbia, Iowa, Cornell, Wellesley (college), Yale, Brown, Michigan, Catholic University of America and the McLean Asylum, which began laboratory measurements in 1889. In the next two years ten additional laboratories were opened when the aggregate valuation of the equipment approximated sixty thousand dollars, and the annual appropriations for maintenance amounted to ten per cent. of the cost of equipment.*

* According to Delabarre, 'Les laboratoires de psychologie en Amerique,' *L'Année psychologique,* 1894, pp. 209–255.

At the present time, according to a recent inquiry,* this varied experimental equipment is found in forty colleges and universities in the United States, besides a few private laboratories and those connected with a few pathological institutions. The list includes twenty-six educational institutions additional to those named above. Arranged in alphabetical order these are Amherst, Bryn Mawr, California, Chicago, Cincinnati, Colorado, Dennison, Illinois, Leland Stanford Jr., Minnesota, Missouri, Mt. Holyoke, New York, Northwestern, Oregon, Princeton, Randolph-Macon Woman's College, Smith, State College, Teachers College, Tufts Medical School, Ursinus, Vassar, Washington, Wells, Wesleyan (Conn.). Twenty-six of these institutions are private, and fourteen are public (state). This distribution is strongly suggestive of the query, whether scientific psychology is purely academic, or whether it is lacking in that practical aspect and value sufficient to secure legislative appropriation of public moneys for its equipment and maintenance. Here, at least, is a practical problem of policy for our association to consider. It is known that a number of educational departments in some colleges and some normal schools have facilities for teaching psychology, but the exact data are not available. According to my present information, twenty-five per cent. of the men who are operating these laboratories and giving instruction in psychology as experimental have been trained in the Leipzig Institute. Scarcely any three of our American institutions can equal this representation and influence in this particular direction. We should not fail properly to interpret this interesting item of training in our American psychology.

* Made by Dr. E. B. Huey, who has kindly supplied me with the following data.

This is not the time, nor is there space, to go into the minuter details of the work that has been done in these institutions during the ten years. That there have been persistent efforts made in these workshops of inquiry is well attested by the growing list of experimental studies appearing in the two American periodicals and the number of rather private publications. During the decennium *The American Journal of Psychology* and *The Psychological Review* (founded in 1894) have published over eleven thousand pages of research, critical and review literature, almost equally divided between them. The latter has issued seventeen monographic studies in psychology in its special series of Monograph Supplements, begun in 1895. Lesser foundations for psychological publications are the *Studies from the Yale Psychological Laboratory,* begun in 1893, the *University of Iowa Studies in Psychology,* begun in 1897. Numerous articles on psychology have appeared in *The Monist* (founded 1890), the *Open Court* (founded 1887), and the *Philosophical Review* (established in 1892) has devoted a large portion of its pages to specific discussions in our science. Several universities, such as Chicago, Columbia and Cornell, have university serial publications, generally entitled contributions to philosophy, psychology and education, in which psychological studies frequently find place. While other institutions have bulletins, such as Missouri and Wisconsin, in which more rarely appear investigations of psychological topics, *The University of Toronto Studies* has a Psychological Series of four issues. Very recently there have appeared additions to these more special modes of publication, such as Witmer's *Experimental Studies in Psychology and Pedagogy,* and *Investigations of the Department of Psychology and Education of the University of Colorado.*

The educational applications of the subject have found their chief outlet in *The Educational Review* (founded in 1891) and *The Pedagogical Seminary* (founded in 1891), in which numerous special and general articles have appeared from time to time. For the present survey I deem it hardly necessary to detail the avenues of publication of psychological material to be found in the medical, physiological and biological periodicals. The work done in abnormal psychology is also omitted in this review.

In lieu of having prepared a definite statistical statement of fact respecting the scope of the mass of literature thus variously appearing and which is steadily growing, and thereby being able to specify the exact items in psychology which have been the successive objects of a possibly shifting interest, I offer a sketch of these considerations made by naming the first and the last original articles appearing in each volume of the two technical periodicals published in this country. This method of marking off the years has the added benefit of the counter-checking due to the multiple editorial selection of the important and the less important material available, which is apt to maintain a fairly reliable average of values. The titles are given in the following order: The first and the last titles of a volume of the *American Journal of Psychology*, with its years, are first stated; then the respective titles of a volume of the *Psychological Review*, with its year—omitting in the latter instance the presidential addresses before our association when they chance to be the leading article, in which case the second article is taken.

'Disturbance of attention during simple mental processes,' 'National destruction and construction in France as seen in modern literature and in the Neo-Christian movement' (1892–1893), 'The case of John Bunyan,' 'An experimental study of memory' (1894), 'Syllabus of lectures on the psychology of pain and pleasure,' 'A laboratory course in physiological psychology: the visual perception of space' (1893–1895), 'H. von Helmholtz and the new psychology,' 'The perception of two points not the space-threshold' (1895), 'Experiments on Fechner's Paradoxen,' 'Attention experimental and critical' (1895–1896), 'Psychology and physiology,' 'Physical and mental measurements of the students of Columbia University' (1896), 'Attention and distraction,' 'The psychophysiology of the moral imperative' (1896–1897), 'Studies in the physiology and psychology of the telegraphic language,' 'After-sensations of touch' (1897), 'The psychology of tickling, laughing, and the comic,' 'On choice' (1897–1898), 'Some effects of size on judgments of weight,' 'A mirror pseudoscope and the limit of visible depth' (1898), 'The migratory impulse vs. love of home,' 'A study of anger' (1898–1899), 'The relations between certain organic processes and consciousness,' 'A plea for soul-substance' (1899), 'The memory image and its qualitative fidelity,' 'Pity' (1899–1900), 'Psychological atomism,' 'An illusion of length' (1900), 'Creeping and walking,' 'Fluctuation of the attention to musical tones' (1900–1901), 'The social individual,' 'Study of early memories' (1901), 'The relation of the fluctuations of judgments in the estimation of time intervals to vaso-motor waves,' 'Mental growth and decay' (1902), 'The world as mechanism,' 'Feeling and self-awareness' (1902).

Generalization upon these captions is impossible, and scarcely pertinent. These thirty-six themes show a variation in interest rather than a steady development from a lower, narrower to a higher, broader

sphere. They show that interest in fundamental processes continued steadily, while time has been found for the more rare and exceptional activities of mind. More than half of them are experimental in character, in the severest sense of that term. The specialized tendencies of our psychological thinking appear, unquestionably, in such a sketch of the work which has been made the common property of the science.

The foregoing account of our psychological activities is admittedly limited. The best statement of the ten years that could be made would comprise a digest of the revised content in method, results and criticism which the succeeding years have brought forth. Such annual revision has doubtless taken place more or less throughout the entire field cultivated by us; for, as one of our iconoclastic members once said, no discovery in psychology is ever more than four months old. A second-best means to bring out the decennial features would be the exhibition of the annual changes by condensed and pointed statements descriptive of them. The fully capable surveyor might, perhaps, discover that there have not been ten ascending or cresting psychological interests. Instead of undertaking either of such accounts, some of the events and emphatic features of the decennium may receive descriptive presentation as follows:

The year of the beginning of our association, 1892, was a year of unusual interest, both at home and abroad. It marked what might well be called the 'psychological revival,' which deepened and perpetuated itself in institutional and extra-institutional organization. A dozen pages of 'Letters and Notes' in the April issue of the *American Journal of Psychology* ought to be transcribed in order to show the intensification of effort on all sides in the interest of psychological thinking, teaching and investigation. In August the second international Congress of Experimental Psychology (called 'experimental' the first time) was held in London, and Harvard University emphatically internationalized psychology among us by bringing Professor Münsterberg over the waters as the director of its psychological laboratory.

The year 1893 proved even more interesting historically. The first attempt in history to show internationally psychology in working order was made with the exhibit of experimental psychology, arranged by Professor Jastrow under the generous wings of anthropology, at the World's Columbian Exposition at Chicago. Here psychology was prepared in visual terms, being nothing less than a laboratory in operation, both as an exhibit and as a place for making 'tests.' Special mention should also be made of the significant congresses of rational psychology and of experimental psychology in education held during the exposition as part of the International Congress of Education under the charge of the National Educational Association of the United States. With but two exceptions in the experimental section, all the material presented before the two congresses came from our American students of the subject. The enthusiasm and attendance were rather unique. The same year witnessed a growing change of interest from the analysis of the mental states of the individual adult mind to the quest for the psychological roots of consciousness as these may be found in the psychical phenomena of the child and the lower animals.

For the cresting of a widespread popular interest in our science and its practical applications, the year 1894 will probably always stand out as remarkable. It was the great year of the formation of state

societies for stimulating and directing child study among teachers and parents. The American passion for novelty almost universalizes itself in the newer passion for collecting data and spreading the syllabus of inquiry. The National Educational Association had a new 'Committee on Psychological Inquiry,' which made its first report. The new theme of 'imitation' was so diligently pursued by psychologists, sociologists and educationists that they came near concluding that man is nothing else than an imitator. At least this process was regarded as the organizing function in the individual, enabling him to become a social unit. Our psychologists also seemed to take unusual delight in talking and writing about 'pain.'

The next year displayed a disturbance in the general feeling of confidence which had well settled down upon the cohorts of the psychologists. Some philosophers continued to deplore the transition of psychology into the state of a science, its adoption of exact methods in gathering accredited facts, etc. There appeared a strong reaction against the enthusiasm of the previous decade, and a decided doubt arose as to both the psychological character and the scientific value of the newer facts brought to light. These had received the name of the 'new' psychology, and it had to pass through the double baptism of fire and of praise as it was being steadily contrasted with the 'old' science. This reaction was doubtless the great crisis in the whole movement. Within the circle of psychologists this year was noteworthy by reason of more serious attention being given to that readjustment of methods and problems made necessary by bringing the great scheme of evolution up to the field of consciousness. The former physiological handmaid of the science was being surely replaced by her biological successor more effectively than ever before.

In 1896 several of the more important laboratories were moving into larger and better equipped quarters or were planning more space. Experimental activities were increasing. The popular magazines were giving unusual space to articles on psychology.

The year 1898 proved to be one of concentration, consternation and the experimental construction of the newer department of comparative or animal psychology. Those who held to the newer faith through the crisis of 1895 were moving forward constructively. Numerous articles on the arrangement and equipment of laboratories appeared. The problem of an 'individual' psychology attracted synthetic attention—not independently of foreign inquiries. Schemes of decisive tests were devised. Efforts began to be made to correlate all tests and measurements so as to sketch definitely the make-up of the normal mind, both in the formative and in the maturing ages. Certain complex functional activities involved in growth and in schooling were selected for careful analysis and patient investigation. And our late president recommended the introduction of 'the consulting psychologist' as the newest official in our educational system. But the practical applications of such and all other experimental results began at once to be seriously questioned by a large section of the educational public. This was but an echo of the warning note sounded by one of our members crying out against the dangers, not to say the absurdity, of an applied psychology. It is to be hoped that our science has fully regained by this time what was then so suddenly lost in general esteem, and as a useless sacrifice. Careful psychological experiments upon animals began to be made in several quarters, mark-

ing the tendency to develop this border province of the science. Out of this tendency, well stimulated in individual instances in previous years, has come a perfection and an extension of the more specific and exact modes of experimentation which prepared the way for the most satisfactory era of a definite comparative psychology, and a wider dependence upon the conceptions underlying a thoroughgoing application of the genetic method.

Of the unspoken years I am unable to specify accentuated activities, so even must have been the tenor of their way. Nor can one with ease put his finger upon the date of the introduction of the scientific method in those lines of interest in religion, in esthetics and in other higher manifestations of mind, which are enabling us to give a truer picture of the life-history of the soul, and which are now so well marked in their developments.

The decennium is also distinguished by the literary freedom and activity exhibited by our writers of treatises and text-books. I have not made it a part of my task to collect a summary of all the material available in this direction, but remained satisfied with an enumeration of some of the more important works which have appeared and which show in a different way the drift of the tendencies among us. In 1893 appeared Miss Shinn's 'Notes on the Development of a Child' (parts 1 and 2) and Tracy's 'The Psychology of Childhood.' The year 1894 saw the appearance of Ladd's 'Psychology Descriptive and Explanatory' and Marshall's 'Pain, Pleasure, and Æsthetics.' The first issue of 'The Psychological Index' was in 1895. It contained 1,312 entries, representing chiefly the bibliography, for the year preceding, of the literature of psychology and cognate subjects. Its latest issue, No. 8, for the year 1901, entered 2,985 titles. The following books also show the marked features of this year: Donaldson's 'The Growth of the Brain,' Stanley's 'Studies in the Evolutionary Psychology of Feelings' and Baldwin's 'Mental Development in the Child and the Race,' which was the beginning of a series of characteristic studies only now completing themselves. Ladd's 'Philosophy of Mind,' though treating of ultra-psychological questions, may also be mentioned as completing a unique trilogy on the soul. The year 1896 was fruitful in the following ways: Cope's 'The Primary Factors of Organic Evolution' had great value for the psychologist's problem of consciousness in evolution. The growing problems of social psychology received marked contributions in the work of Giddings, 'The Principles of Sociology.' And Baldwin's 'Dictionary of Philosophy and Psychology,' announced in this year, was expected to be ready in the following year. Even now the project is only two thirds completed. Scripture's 'The New Psychology' appeared in 1897. Throughout the decennium almost half a score of text-books for the subject have been prepared for class-room use, but the year 1898 might be called the year of psychological primers, by reason of the fact that two such books appeared. The same year saw a most interesting piece of pioneer work in the appearance of Sanford's 'A Course in Experimental Psychology, Part. I., Sensation and Perception.' In 1899 Starbuck gave completer form to his 'Psychology of Religion.' 1901 was a year unusually well marked by the appearance of the first volume of the 'Dictionary of Philosophy and Psychology' (though including the work of many hands not American) and Titchener's 'Experimental Psychology: A Manual of Laboratory Practice.'

The enrichment of American psychology through the translation of foreign works

into English should not pass unnoted, even with the briefest mention. Before the decennium began, we had Ribot's 'German Psychology of To-day' (1886), besides his works on heredity, attention, memory, personality and will, Preyer's 'The Mind of the Child' (2 vols., 1888 and 1889) and Höffding's 'Outlines of Psychology' through English hands, not to mention numerous other writings less typical of the dominant interests of psychology among us.

Within the ten years we have had Preyer's 'Mental Development of the Child' (1893), Wundt's 'Lectures on Human and Animal Psychology' (1894), Külpe's 'Outlines of Psychology' and Ziehen's 'Introduction to Physiological Psychology' (1895), Wundt's 'Outlines of Psychology' and Ribot's 'Psychology of the Emotions' (1897) and Groos's 'The Play of Animals' (1898) and 'The Play of Man' (1901). Most of this enrichment has come through the labor of American scholars, and is, therefore, interesting as indicating a continuance of the double debt our psychological thinking and activity owe to the foreign cultivators of our field of science.

In this connection an injustice would be done to the topic we have been surveying should we not remind ourselves of the fact that the output of our American psychologists has found place not only on the study shelves of our foreign brethren, but that also some of it has been transferred into the French, German and Italian languages. The following instances of such translations occur to me, but I can not say that the list is complete. Baldwin's 'Mental Development of the Child and the Race' appeared in French and German in 1896, his 'Social Interpretations' in 1899, his 'Story of the Mind' in French and Italian in 1899. James' 'The Will to Believe, etc.,' was translated into German in 1899, and his 'The Principles of Psychology' into Italian in 1900. Sanford's 'Course in Experimental Psychology' was translated into French in 1900, and a volume of Hall's studies has recently appeared in Germany under the title of 'Ausgewählte Beiträge zur Kinderpsychologie und Pädagogik.'

For our historical purposes it has been convenient to follow the lines of division between the activity within and the activity without the association. It is readily seen, however, that the widening interests of associational efforts, both individual and corporate, have been growing to include more and more of those achievements which we have reviewed as extra-associational. It is not possible, nor is it especially desirable, to give a quantitative statement of the claims the association may have upon this broader field. The healthy extension of its influences, though limited, is the fact to be noted. In how far it may be desirable that our psychology of the next ten years should be associational rather than individual is a question of development too large for the concluding words for which we have space.

One can not be truly historical without becoming prophetic. The prophecy may lie in inert words, lacking the momentum of a vigorous inspiration. In looking forward to the psychology that is to be among us, there are many means which I should like to point out as available by our association for the realization of certain desirable developments of our science both within and without. Its representation in our universities, colleges and secondary schools, the methods of teaching it to learners, of establishing its integrity more securely, and of extending its borders by investigations, and the specific contributions it has to offer to the welfare of the individual and of society, constitute the heart of vital problems which must come

more and more into the deliberations of our organization as a national court of appeal in such issues. The association truly has a solemn duty to perform in keeping in touch with the changing social and educational conditions in our national life and in seeing to it that the interests of psychology are adjusted to them. In spite of the experimental showing made in our statistical studies above, somewhere answer must be found for the questions persistently raised by the fact that the laboratory of psychology has not held its men like the other types of laboratory developed by science.

All these and several other vital questions relating to the efficiency of the association must be passed over to give place for a final suggestion. I doubt whether any person outside the council ever reads the reports dutifully presented by the treasurer. At the close of ten years we are in possession of a fund of some sixteen hundred dollars. The current expenses of the organization being kept reduced to a nominal minimum, the fund receives at the present rate an annual accumulation of nearly four hundred dollars. Should this rate of increase continue, the fund will be almost doubled in four years. Herein the association finds itself happily invested with both an obligation and an opportunity. This fund should be so administered as to yield the most stimulating returns in influence upon the growth of our science, especially in America. This can be done, not by burying or dissipating it in minor projects, worthy perhaps in their way and for the time being, but only by aiming high. The best effort the association can make seems to me to lie in the direction of establishing a *Prize Gold Medal in psychology* —a suggestion for which I take pleasure in thanking our president. The interest income of our fund four years hence would be sufficient to warrant the awarding of the medal every three years, or four at most. This medal should be awarded by the association only for the best piece of work done in psychology, either in research or in some other specific mode of advancing its multiple interests. The association might control the direction of the immediately future psychological thinking by setting a prize problem, or it might stimulate general efficiency on the part of psychologists by selecting the best work in unspecified lines for the high honor going with the medal distinction. The field of competition might be restricted to American psychologists, or left open to the world. This prize gold medal might even be designated by the honored name of some past or present American psychologist. But my suggestion does not include a draft of rules regulating the award of the medal. It remains for me only to express my deep conviction that more enthusiasm and inspiration would be infused into American psychology through such a foundation, which is perfectly possible, than through any other detailed project that could be suggested at the present time. Its great virtue resides in the fact that it would keep each worker looking forward and upward, and that through it the association would do a thing of great and lasting moment.

EDWARD FRANKLIN BUCHNER.
UNIVERSITY OF ALABAMA.

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