New York. That association is the recognized centre of the manual-training movement, and in these monographs we may expect to find some able expositions not only of manual training, but of other educational subjects. We notice that Sir Philip Magnus of London, Professor Paulsen of Berlin, Professor Sluys of Brussels, Dr. Hannsk of Vienna, Professor Salicis of Paris, Oscar Browning of Cambridge, Colonel Parker of Chicago, Dr. Channing of Harvard, Superintendent Mac Alister of Philadelphia, Dr. A. G. Haygood of Georgia, and Dr. Wey of Elmira, are on the announced list of contributors; and we await from their pens some of the best educational writing, in a convenient and inexpensive form, that has ever been printed in this country.

The present issue is a double number, and the two papers complement each other. President Gilman writes in an easy, graceful way of the training of the hand, and puts his argument so simply that the veriest novice in educational matters should be able to understand it. His summary of the principles of manual training (pp. 11–13) is very comprehensive, as is the following concise summary of the whole question: "Manual training is an essential part of a good education, whether that education be restricted to the common school or carried on to the highest discipline of technical schools and universities" (p. 13).

Dr. Belfield of Chicago, whose paper forms the second part of the number, makes a powerful argument on the practical side, for the introduction of manual training into the common school. He is able to show from his own experience that better progress is made in other studies with manual training than without it. This is the natural result of the intellectual tonic administered by manual training, as well as of its harmonious development of all the faculties. For the student or teacher who is making a study of manual training, this first number of the Educational Monograph Series is the best possible introduction to the subject.

Dr. Hailmann is a gentleman who has written much, and on the whole well, on education. He is a student and translator of Froebel, and a firm believer in kindergarten methods. In his preface he expressly states that the present work is issued in response to the growing demand among primary teachers for 'busy work' and 'kindergarten methods.' The book is eminently practical, and, so far as it goes, gives an excellent manual-training course for the primary school. We will only say that clay can be used more than the author provides for, and that drawing is the very foundation of manual training. The latter fact seems to have escaped Mr. Hailmann's attention while he was engaged on this book.

'Industrial Instruction' is a translation from the German of Robert Seidel, by Miss Smith of Oswego Normal School. It is a philosophical treatise on manual training, and yet it is sufficiently easy of comprehension to be of assistance to all teachers. An unfortunate disjointedness of style, the usual attribute of German writing, mars the book, but the translator seems to have worked hard to counteract the effect of this. The second chapter, which is entitled 'Errors, Contradictions, and Inconsistencies of the Opponents of Industrial Instruction,' is respectfully commended to the attention of the secretary of the Massachusetts Board of Education and the superintendent of schools at Worcester, Mass.; for both of these gentlemen are not only utterly in the dark about manual training, but they are using their influence on the platform and in educational journals to keep others in the same condition. Seidel shows that the sort of industrial instruction which such persons declaim against has for its aim "principally the development of certain kinds of manual skill, partly by this means to promote domestic industry, partly to prepare for a later profession, to supply trained strength to hand-labor, and thus to elevate it." All sane men who know any thing of public schools unite in insisting that instruction of this sort must not be permitted to find a place. But this instruction is diametrically opposed to that which the advocates and expounders of manual training are upholding. Their manual training is educational, not technical: it develops the judgment and reason, not the power of imitation. Inasmuch as the opponents of manual training in this country seem to be unable to distinguish it from technical instruction, we hope that they will read Seidel's book. Every possible confusion that they can fall into is there explained, and every possible objection that they can raise is there answered.

Dr. Woodward's book is not so satisfactory, but it has a value of its own. It deals with the manual-training school only, considered as a separate institution. This it discusses in full detail, and the theory and practice of the work done at St. Louis are clearly presented. Much of the information as to cost and character of equipment is that which is frequently called for at this time by the school authorities of cities where manual training is being introduced. Almost half the book, however, is given up to Dr. Woodward's various addresses, some of them delivered fifteen years ago. No attempt seems to have been made at editing them, or striking out redundancies and inconsistencies. However forcible they may have been when delivered, they lose much in the present arrangement.

We would close as we began. All of these books are valuable and suggestive. All of them should be widely read, especially by teachers and by parents who have children to educate. All of them approach manual training in the right spirit and with intelligence. The insight of the authors is sufficient to guard against any such ludicrous presentation as that given by Mr. Love in his 'Industrial Education,' a book which we had occasion to notice a few months ago (*Science*, x. No. 247). Taken together, they would form an excellent beginning for a library on manual training.

La Psychologie Physiologique. Par G. SERGI. From the Italian by M. MOUTON. Paris, Felix Alcan, 1888. 8°.

THE flourishing condition of science in Italy has of late been the subject of frequent remark. The universities have filled their chairs with a new generation of men, well schooled in the best methods that the continent can offer, full of enthusiasm for their special pursuit, and gifted with a taste for original research as well as with a comprehensive appreciativeness for the work of others. As the result, there have been appearing from the press of Italy many very valuable contributions to all departments of science, and, what is especially noteworthy, publications tracing distinct novel lines of thought. This has made all scientists look more carefully into the Italian periodicals; has set Frenchmen, Germans, and Englishmen to translating their books; and promises to make a knowledge of Italian quite as requisite a possession for the scientist as a knowledge of French and German.

In the scientific study of mental phenomena the Italians stand in the foremost ranks. They have developed a school of criminal anthropology, setting forth the true nature of the criminal as an aberrant form of humanity, that has gained a world-wide recognition. Their studies of the insane are full of ingenious methods and suggestive results. Some of the best work on the localization of function in the brain has been done in Italy. It is, then, not surprising that they see in experimental psychology the completion of the circle of the sciences, and do all in their power to develop and spread its teachings. Nothing could better illustrate the truly admirable character of their work than this manual of psychology. The author is professor of anthropology in the University of Rome, but his conception of anthropology is broad enough to include an intense interest in all that pertains to the human mind. The volume is written in an entirely modern spirit, and is quite different from the type of text-book that prevails in our colleges.

Perhaps no easier method of indicating the character of its contents could be pursued than that of *résuméing* the table of contents. It begins with a terse description of the physiological elements of which the body is composed, with a special description of nerve cells and fibres. Then follows a chapter on the objects of psychology, showing its very intimate connection with physiology and the insensitiveness with which the unconscious shades into consciousness. There is no attempt at abstract, pure distinctions, but a straightforward account is given of what it is that a student of psychology must know and be interested in. Then sensation is treated, and covers nearly a hundred pages. After a general consideration of what sensibility implies, follows a more than usually good and full account of the facts summed up by the psychophysic law. Then the special senses are treated, though not at as great a length as might be desired; a surprisingly large amount of information, however, is expressed in a very few pages. This section is concluded by an interesting chapter on the interpretation of sensations. The next part of the book deals with the intellect, and be-

gins with a description of its anatomical basis. Then follows the portion most similar to current text-books of psychology upon reasoning and ideas, but treated with a scientific appreciation of its import not too frequently met with. A very detailed analysis of the theories attempting to explain the perception of space and time concludes this portion of the book. The third portion of the book gives a convenient account of the facts of consciousness, the laws of the association and reproduction of perceptions, a clear account of the experiments upon the time occupied by the simpler psychic acts, and of the phenomena of unconscious mental action. The fourth part deals with the feelings, and is perhaps too long in proportion to the rest of the work. Here the anthropologist speaks out most strongly, and much matter is inserted not usually considered of prime importance in a text-book. The division of topics is into the individual, the individuo-social, the social, and the æsthetic sentiments. The final portion of the book is devoted to the will, and gives a good though brief description of the various kinds of movements, of the expression of the emotions, of the development of will, and discusses from a psychological point of view the problems of free will and of responsibility.

It will be seen that the order of topics is somewhat unusual, but the merit of it can be tested only by actual trial as a text-book. The especial merits of the work consist in the brevity of its statements; in the complete absorption of the scientific method of viewing mental facts, and thus avoiding the fault most common in American psychological text-books of introducing the facts of experimental research, but leaving the whole topic unenlivened by a rejuvenating scientific interest; and in the skill and care of its presentation.

The Italian edition of the work was published in 1879, and, though the French edition has been revised, it has not derived the full benefit of the most recent studies, though this is in many cases no serious omission for a work of this kind. The object of writing the book, the author tells us, was to spread the knowledge of the modern methods of psychological research in Italy. If the students of the Italian colleges can use such a text-book as this intelligently, they must have a sounder scientific training than can be expected from the ordinary junior or senior of American colleges. This is the most serious fault of the book; or it would be, at least, for an English book of the kind. Its brevity has made it technical, and the uncertain character of several of the topics most fully treated requires a well-trained student, under the care of a skilful teacher, to insure its appreciation. Having in view the text-books more or less devoted to the exposition of a scientific psychology, recently published, it can, without hesitation, be said, that for the best selected information, most conveniently and pedagogically expressed, no better four hundred and fifty pages can be found than those of Professor Sergi's book.

NOTES AND NEWS.

FOR a number of years the deficiency in the production of mulberry-silk has drawn the attention of sericulturists to the rearing of the wild silkworms of India, China, Japan, America, and other parts; and a great many reports have been published on these wild silkworms, some of which are already bred in a state of domesticity or semi-domesticity. Reports on this subject have appeared during a succession of years in the *Journal of the Society of Arts*, London; the *Entomologist*, London; the *Bulletin de la Société d'Acclimatation de France*, Paris; and the *Isis*, Berlin. Many of these wild silkworms produce silk of great strength and beauty, and could all be profitably utilized, if bred in their native lands, on a large scale. Specimen cocoons, and carded and reeled silks of about twenty different species, have been sent to the Société d'Acclimatation, and they will be exhibited in the Paris International Exhibition of 1889, together with specimens of the moths and prepared larvæ of the various species. As it is highly important that this exhibition should be as complete as possible, Mr. Alfred Wailly of Tudor Villa, Norbiton, Surrey, Eng., has been requested by the Société d'Acclimatation to send all new specimens he can collect from abroad. He is therefore desirous that sericulturists, entomologists, and all persons wishing to contribute to the formation of this large and interesting collection of the wild silkworms of the world, should communicate with him, and he requests them to kindly send him, in small or large quantities, specimens of live cocoons, with names of food-plants for each species, whenever possible, and also specimens of the moths. Live cocoons, which are specially required for the rearing of the species, should be sent to Europe from October till about the end of March, according to distance: when sent later, especially when sent from tropical regions, the moths generally emerge during the voyage, and all is lost.

— Some large plumb-line deflections have been brought to light in the Hawaiian Islands, amounting in several cases to almost a minute of arc. During the past year fourteen latitude and three gravity stations have been occupied on the principal islands of the group. Gravity was determined by pendulum observations at the base and summit of Haleakala (ten thousand feet elevation), and also at Honolulu, thereby connecting this work with the work of 1883 done by the United States Solar Eclipse Expedition. About fifteen hundred measures of latitude were made, being an average of more than a hundred measures for each station. The greatest number of pairs observed on any one night was seventy-five. Four stations were made on the island of Hawaii, and as near as practicable they were placed north, south, east, and west of Mauna Loa, the active volcano. One latitude station was also made on the top of Haleakala. The expense of the work was borne by the Hawaiian Government Survey, and the stations were selected by the surveyor-general, Prof. W. D. Alexander. The necessary instruments were loaned by the superintendent of our Coast and Geodetic Survey. Mr. Preston, who made the observations, estimates about a year for their complete reduction and discussion.

— With the object of considering well the various forestry needs of Michigan, the last Legislature enacted a law making the members of the State Board of Agriculture an independent forestry commission. In accordance with this act, the commission will hold a forestry convention at Grand Rapids, Jan. 26 and 27, for the purpose of gathering and disseminating information, and helping to awaken an interest in this important subject.

— Rev. Ebenezer V. Cooper, missionary at Huahine, Society Islands, has communicated to the *San Francisco Bulletin* the death of Andrew Garrett as follows: "Andrew Garrett, a celebrated conchologist, died at his residence on the island of Huahine, Society Group, South Seas, on the 1st of November, 1887, in the sixty-fifth year of his age. For some months past he had suffered from a severe form of cancer in the face, which attack brought about his death. Mr. Garrett was the third child in a family of fourteen, and was born on the 9th of April, 1823, in Beaver Street, Albany, N.Y. His mother was one Joanna van Neau Companeaux, a native of Belgium, of good education, and speaking several languages; his father being a Francis Garrett, a native of Canada. Both parents lived to old age, the mother attaining seventy-two years and the father eighty-four years. The early life of Andrew Garrett was spent in Vermont State, where he very soon manifested a decided scientific turn of mind. On one occasion, at eight years of age, he left home without warning, to visit a museum some hundred miles away, which having accomplished, he returned home again in safety. He had a great fondness for travel; and to satisfy the longing, he went to sea at the age of eighteen. As a shell-collector he made his first acquaintance with the South Pacific in 1848, and in 1852 he ultimately adopted that island-studded ocean as his special field of research. Since that time Mr. Garrett has visited almost every island of note in the various groups of the South Pacific, spending considerable time in each group. His studies not only embraced shells of the marine, fresh-water, and land orders, but also birds, fishes, and other objects of natural history. He was also a botanist. For one period of ten years he was professionally engaged in the interests of the Goddefroy Museum, Hamburg, during which time was published 'Andrew Garrett's Fische der Südsee,' in six parts, edited by Dr. Albert Günther of the British Museum. Mr. Garrett was also for a time associated with Professor Agassiz. In addition to visiting and residing in every group of islands of the Southern Pacific, Mr. Garrett visited and explored many parts of the Atlantic and Pacific coasts of South