may be in themselves, it yet remains true that man is more interested in man than in any thing else; and scientific information given in the form of conversations, as in this book, is not only more interesting, and sure to obtain more readers, but makes a much more lasting impression.

The plan of the book is this: a city merchant who was formerly a naturalist is ordered by the doctor to take a year's rest in the country. He obeys the order, and occupies his time, while regaining health, in resuming his old acquaintance with the insect world. Various persons are introduced, who become interested in the oddities found, and weekly conversations to the household upon insects are the result. The author, assuming the character of the naturalist, details to his listeners a great many interesting and valuable bits of information upon their natural history: their life-history and habits, the damage which they do, with occasionally the method for its prevention, are discussed. A classical student introduces the mythology and classical lore relating to the subject; two farm-hands are thoroughly acquainted with the various superstitions connected with insects; the peculiar habits give opportunity for occasional moral lessons; while a 'school-ma'am' enlivens the party with her wit. The classical student, being a clergyman, serves to introduce the relation of evolution to religion, and is made to say, "As a method of creation simply, I am willing to leave it in the hands of the naturalist and philosopher," — a conclusion which, happily, is being reached by all thinking men. In short, these conversations, and the experiences detailed, give to the non-scientific reader a pleasant and accurate account of many of the animals which he is sure to meet in his walks in the country. The work is not a scientific one. It is true that there are a few new observations given; but they are so absorbed in the general character of the book that their value disappears, for no naturalist would be apt to go to a book of this nature for scientific information.

The illustrations form not the least attractive feature. These are very numerous, — about a hundred and fifty in all, — all new, and drawn especially for this work. Of themselves, they will insure many a purchaser. It is somewhat to be regretted that so many of them are simply humorous in nature. The whimsical oddities of Mr. Beard are certainly unique and excellent, but seem somewhat out of place, giving to the pages the appearance of humorous selections. While they do somewhat enliven the book, the reader cannot help wishing that their place were filled with more of the sketches from nature from the author's sketch-book, whose excellence is verified by the many examples given.

NOTES AND NEWS.

GEN. F. A. WALKER, of the Massachusetts institute of technology, has published a brief paper on industrial education, which he read before the American social science association in Saratoga last September. This interesting paper bears upon the questions which are under discussion in Glasgow. Gen. Walker offers the following classification of schools devoted to industrial education: —

1. Schools of applied science and technology, such as the school over which he presides, the Sheffield scientific school, the Stevens institution, the Rensselaer polytechnic institute, and the like.

2. Trade-schools, in which a particular art, or branch of industry, is taught; as, for example, watch-making in Switzerland.

3. Schools in which manual and mechanical education is introduced as a part of the general education of the scholar with reference to the fuller development of all his powers, not to make an engineer on the one hand, nor a trained operative on the other.

Gen. Walker advocates with clearness and vigor the gradual introduction of manual training in the public schools, and sketches what he calls 'a fairly conservative programme,' which would involve only a slight disturbance of the structure of the existing schools, but would call for a surrender of a considerable portion of time to the new studies. Gen. Walker seems at a loss for a phrase or term with which to indicate the training he desires to give. We suggest 'handicraft.' Let handicraft be taught in every school for girls or boys, in the kindergarten, and in the scientific laboratory. 'Handicraft' will make a good rallying word for all who favor this new phase of popular education.

— We would call the attention of our readers to the following remarks by Sir William Thomson during an address at Philadelphia last summer: "You in this country are subjected to the British insularity in weights and measures: you use the foot and inch and yard. I am obliged to use that system; but I apologize to you for doing so, because it is so inconvenient; and I hope all Americans will do every thing in their power to introduce the French metrical system. I hope the evil action performed by an English minister whose name I need not mention, because I do not wish to throw obloquy on any one, may be remedied. He abrogated a useful rule, which for a short time was followed, and which I hope will soon be again enjoined, that the French metrical system be taught in all our national schools. I do not know how it is in America. The school system seems to be very admirable; and I hope the teaching of the metrical system will not be let slip in the American schools any more than the use of the globes. I say this seriously. I do not think any one knows how

seriously I speak of it. I look upon our English system as a wickedly brain-destroying piece of bondage under which we suffer. The reason why we continue to use it is the imaginary difficulty of making a change, and nothing else; but I do not think in America that any such difficulty should stand in the way of adopting so splendidly useful a reform."

— Professor George Davidson of the Coast and geodetic survey, San Francisco, informs us that the account of the volcanic eruption of Mount St. Augustin, Cook's Inlet, Alaska, prepared by him, and published in *Science*, No. 54, Feb. 15, 1884, was wholly derived from an account by Capt. Sands, and is seriously in error. It appears that Capt. Sands saw the eruption only from a distance of about fifty miles, in unfavorable weather, and therefore derived his information about details from the natives or from his imagination. The splitting of the island in twain, the formation of new islands, etc., appear not to have occurred. According to Capt. Cullie of the Alaska commercial company, who visited the island, there has been a great land-slide on the north-north-west side of the mountain, leaving a precipitous bluff over which has poured lava and eruptive matter filling up the rocky boat-cove there. He further reports that a reef running westward, and formerly submerged, is now elevated to the sea-surface. The volcano above the great slide was actively smoking or steaming at the time of his visit last summer. This information is in confirmation of that printed in *Science*, No. 73, June 27, 1884.

— Lord Rayleigh has resigned the Cavendish professorship of experimental physics at Cambridge, Eng.

— The department of biology of the University of Pennsylvania was formally opened on the 4th with an inaugural address by Professor Harrison Allen, one of the principal promoters of the enterprise.

— Mr. H. E. Dore of Portland, Ore., has discovered Zonites cellaria Muller somewhat abundantly in that city, while the native helices appear to be receding from the vicinity of civilization. The intruder, now for the first time reported from that region, is a European species living in damp places, and apparently with a *penchant* for travel. It was introduced at Charleston, S.C., nearly a century ago, and described by Say as a new species. It has been found along our eastern coast in many cities, and in Manila, Japan, the Hawaiian Islands, and many other widely distant regions which are visited by European ships, and seems to flourish equally well everywhere.

— In the journal of the Anthropological institute of Great Britain for November, 1884, Dr. Flower discusses the size of teeth as a race-character in man. His observations were made upon all those skulls, out of the three thousand in the collection of the museum of the Royal college of surgeons, which retained the bicuspid and molar teeth of either side in the upper jaw. These five teeth he measured in a straight line along the crowns, from the anterior margin of the first bicuspid to the posterior margin of the last molar, to get the 'dental length.' This absolute length is not sufficient in comparing races, for smaller races might naturally be supposed to have smaller teeth; so that it was necessary to find some standard of length as indicating the general size of the cranium, with which to compare the dental length. For this purpose, there was chosen the length of the base of the skull from the anterior margin of the foramen magnum to the point where the nasal bones are set upon the frontal. The expression in figures, of the proportion between the length of these five teeth and that of the base of the skull, is known as the 'dental index.' The average dental indices of the human races represented in the collections examined range between forty and forty-eight: and for convenience of classification they are divided into microdont, with proportionally small teeth, index below forty-two; mesodont, with medium-sized teeth, index between forty-two and forty-four; megadont, with large teeth, index above forty-four. Six gorillas, six chimpanzees, and as many orangs, examined, were found to be strongly megadont; while a male siamang proved to have molar teeth scarcely larger, in proportion to the skull, than the higher races of man. The megadont human races are the Tasmanians, Australians, Andamanese, and Melanesians of various islands. The mesodont races are the African negroes of all parts; Malays of Java, Sumatra, etc.; American Indians of all parts; and the Chinese. The microdont races are the low-caste natives of central and southern India; the Polynesians; the ancient Egyptians; mixed Europeans, not British; and the British. While the separation into groups is necessarily arbitrary, it seems to be not wholly unnatural, since it accords in a general way with the familiar classification based on color; the microdont section including all the so-called Caucasian or white races, the mesodont the Mongolian or yellow races, while the megadont is composed exclusively of the black races, including the Australians.

— The Royal academy of sciences in Turin celebrated its hundredth year in July, 1883, and, in commemoration of its centennial, has issued a quarto volume of nearly six hundred pages. In this may be found biographical sketches of the three founders of the academy, — La Grange, the famous mathematician; Saluzzo di Monesiglio, the physician and chemist; and Cigna, the anatomist and natural philosopher. The two first named were successively presidents of the academy; and they were followed by Morozzo, a physician and mathematician. His name is followed by that of Napoleon Bonaparte, who was chosen president while he was first consul. A brief history of the academy is given, and lists of the officers and members, an analytical table of the contents of the society's transactions, and, finally, an elaborate alphabetical index to names and subjects mentioned in the transactions. Among the associates of the academy are our countrymen, James D. Dana and George Bancroft, who are foreign members, and William D. Whitney, who is a corresponding member.

— Prof. T. C. Mendenhall has been appointed chief electrician of the U. S. signal-bureau.