

An extended discussion follows, showing how the second law of thermodynamics may be referred back to the principles of mechanics.

As is readily seen from the above brief survey, the various chapters of the book are not very intimately related; but at the same time the author in his arrangement of the subject matter has brought it into a form which approaches as near to continuity as the diverse nature of the topics treated will admit.

A. P. WILLS

SCIENTIFIC JOURNALS AND ARTICLES

The American Naturalist for February is an unusually good number. It opens with a description of 'An automatic Aerating device for Aquaria,' by Louis Murbach, which seems to be easily made and to work well. C. D. Durnford makes another interesting and (to most) convincing contribution to 'The Flying-fish Problem.' As he says, an extraordinary thing about the discussion is the unexplained power therein of the negative to quench the positive. It may also be noted that while the ordinary fish kicks about when laid on a vessel's deck that the flying-fish flaps its 'wings' with great rapidity, '*e pur si muove.*' L. B. Walton presents the first of a series of 'Contributions to Museum Technique. Cataloguing Museum Specimens.' It is greatly to be doubted if the detailed method advocated by Mr. Walton could be carried out in the average museum; it will be found practicable only where the staff is large, or the collections small. Also in a modified form (less sub-division and cross referencing) it has long been in use in various departments of the U. S. National Museum. James Murray describes 'Some South American Rotifers' including a few new species and varieties. J. S. Kingsley discusses 'Meristic Homologies in Vertebrates,' pointing out various difficulties in the way. To add another query to those propounded we would ask why there should not be an actual shifting of the pelvic girdle in long-bodied amphibians? We know that on one side the pelvis may be attached, say, to the twentieth vertebra and on the other to the twenty-first, and if half may shift why not the whole?

R. W. Shufeldt contributes an article on 'The Osteology of the Tubinares' with a scheme of classification. Oddly enough the first taxonomic character assigned, the possession of a large supraorbital, glandular fossa, is purely physiological and found in most sea fowl that dive. The gannets and cormorants which lack the supraorbital glands also lack nostrils and so have no need for them.

The American Museum Journal for February notices the unveiling of the busts of American men of science recently placed in the foyer; the 'Exhibition of the Progress of Science,' and the 'Expedition to the Desert of Fayoum, Egypt.' This region has yielded so much that American paleontologists will await with great interest the results of Professor Osborn's expedition. The number contains the table of contents for the Bulletin of the American Museum for 1906 and the lecture announcements for February and March.

The Museums Gazette of Great Britain for January has an article by Dr. A. B. Meyer on 'The Structure, Position and Illumination of Museum Cases.' As Dr. Meyer is the apostle of the iron case he naturally expresses himself in favor of that material. The last word on the subject is, however, yet to be said, and only in a few instances has any attention been paid to making cases and their contents harmonize. When the millenium comes and the wicked architect ceases from troubling and the weary curator has something to say about the construction of museums the halls will be left plain and finished when it is decided what is to go in them; then case, hall and specimens will be in accord. The balance of the number contains many notes and much information concerning museums in various parts of the world.

UNDER the title 'From Stone to Steel' the Horniman Museum, London, has issued a little handbook to the collections illustrating the ages of stone, bronze and iron. This, by H. S. Harrison, is a clear and concise statement of our knowledge of stone and bronze implements, will be most useful to curators and should be in demand by the public. It discusses the form and distribution of stone

implements, their various uses; the different methods of hafting and the processes employed in their manufacture. The stone age in Europe is treated at length, with descriptions of the implements characteristic of different periods and the arts and manner of life of the men who used them. There are chapters on the Age of Copper and Bronze, The Early Iron Age and Stone and the Metals Outside Europe. Also there is a glossary of terms and a list of books and papers dealing with man's progress from stone to iron.

SOCIETIES AND ACADEMIES

THE AMERICAN CHEMICAL SOCIETY. NORTHEASTERN SECTION

THE seventy-fourth regular meeting of the Northeastern Section of the American Chemical Society was held in the Lowell Building of the Massachusetts Institute of Technology, on Friday, February 15, with President L. A. Olney in the chair. About seventy-five members were present.

Dr. David T. Day, of the United States Geological Survey at Washington, D. C., addressed the section upon 'The Conditions of Occurrence of Platinum.'

The speaker began with a reference to the remarkable increase in price of platinum—about tenfold increase within the last four or five years; this is not due to largely increased demands, but has been brought about mainly through the combination of large dealers and hoarding of the metal by merchants and others.

Platinum is always obtained by placer mining, and deposits of value are known to exist in the United States of Colombia, near Choco Bay, but the climatic conditions, and complications caused by government restrictions, render it impracticable to expect an immediate development of the deposits. Platinum was discovered on the Pacific coast of the United States at Pillar Point in 1850, but being much more difficult to recover from the sands, than is gold, in ordinary placer mining, development of these deposits was slow. Deposits have also been located in California in Ute County, along the Trinity River, at Monterey, and on the beach at Santa Barbara;

beach deposits occur on the coast of Oregon and Washington; in British Columbia along the Tulameen River, is a valuable deposit well situated for placer mining.

Platinum occurs as an arsenide, sperrylite in many sulphide ores, such as those at Sudbury, Ontario. It also occurs native with gold, magnetite, chromite, serpentine and other minerals in the black sands; here it is in extremely fine grains, as a rule, but the character of the deposit can be easily distinguished by the microscopical appearance of the grains. The modern methods of concentrating the sands have now made a sure supply and no real famine of platinum exists; but no good substitute for it has yet been found in the connections of the incandescent light bulbs, nor, indeed, in any other industry. The present supply of the metal is probably 100,000 ounces per year, and the probable future demand is estimated at 200,000 ounces per year. If worked systematically, the known placer deposits could now supply 175,000 ounces without drawing on the sulphide or arsenide deposits, and it seems unlikely that these ores will be worked until the placer deposits are exhausted. Several valuable by-products are now being thrown away after the gold is taken out of the black sand; the magnetite content probably averages twelve per cent. and this is capable of yielding excellent iron and steel by smelting in the electric furnace.

The lecture was illustrated with lantern slides. In the discussion it was brought out that the value of the platinum in the black sands ranged from ten to fifty cents per ton. Professor Robert H. Richards contributed to the discussion a description of the black sands and the method of concentrating and collecting the fine platinum. The ordinary fire assay is practically useless where the value runs less than twenty cents per ton. But with the Wilfley table and magnetic separators, followed by an amalgamation process with mercury containing considerable sodium, the platinum and gold can be recovered. On removing the sodium by treatment with water, the platinum is practically all thrown down, leaving the gold behind in the amalgam. The