at the present time, and would be of more real service to his country than many of us are able to realize.

Any one who has read the published accounts of the copper sulphate method as devised by the Department of Agriculture can not but admit that a most conservative stand has been taken regarding it. Over and over again is the statement made that it was not designed or intended to replace efficient methods now in use. The only claim made for it by its originators has been that it in one case furnishes a remedy for a condition previously considered hopeless, and in the other case as an emergency method, owing to the failure of means already in use, it offers the best way of quickly, thoroughly and cheaply sterilizing a large body of water that has yet been devised.

Copper sulphate is a remedy designed to correct a specific difficulty of great importance from the standpoint of comfort and public health. Each water supply requires a specific prescription and, if properly treated, I believe the evidence brought out here to-night guarantees a cure.

Contributions to the discussion were also made by Dr. G. Lloyd Magruder, Dr. Geo. M. Kober, Dr. Wm. C. Woodward, health officer, and Hon. H. B. C. Macfarland, president, Board of Commissioners, District of Columbia.

SCIENTIFIC BOOKS.

REPORTS OF THE BELGIAN ANTARCTIC EXPEDITION. *Résultats du Voyage du S. Y. Belgica en 1877–8–9, sous le commandement de A. de Gerlache de Gomery.* Rapports Scientifiques, publiés aux frais du Gouvernment Belge, sous la direction de la Commission de la Belgica. Anvers, J. E. Buschmann, 1904. 4to, illustrated.

Additional volumes of the reports of the *Belgica* expedition have reached us as follows: *Hydroiden* von Professor Dr. Cl. Hartlaub (September 15, 1904, pp. 1–19, pl. I.–IV.); *Nemertinen* von Dr. Otto Burger (August 30, 1904, 12 pp., pl. I.–II.); *Poissons* par Louis Dollo (October 15, 1904, 240 pp., pl. I.–XI.); and *Observations Météorologiques horaires* par Henryk Arctowski (August 20, 1904, 201 pp., pl. I.–XXIII.).

The journal of the *Belgica* wintering among the Polar floes has furnished the first meteorological record taken during an entire year which has been obtained from the Antarctic. It is true that observations, taken at an isolated spot in a vast area of which the conditions are unknown, have only a relative importance, which however will grow with the increase in reports from other stations. But, as the pioneer in a virgin field, the observations possess intense interest to the meteorologist.

The volume contains preliminary chapters on the outfit, the special difficulties encountered, the general results, the complete record of observations and plates showing graphically the automatic records and the results displayed as wind-roses, etc.

Space fails for a complete analysis of the conditions encountered, but a few notes may be given. The mean annual pressure of the atmosphere was 744.4 mm., with a June maximum observation of 772.1 and a March minimum of 711.7. The minimum monthly mean occurred in February (735.68) and the maximum in June (750.55). The extreme maximum diurnal variation was 21.4 mm. in September, the minimum in the summer months, 8.6 mm. in December. In examining the profile for the year two maxima (June and December) and two minima are distinctly indicated, corresponding to the solstices and equinoxes.

The mean temperature for the year was minus 9°.64 C. with a maximum of plus 2°.5 and a minimum of minus 43°.1. The mean diurnal variation was 7°.57 and the maximum for a single day 27°.4.

The winds from the west and east predominate markedly over those from the north and south. It is noticeable that the northeast and and southeast winds were much more common than those from the northwest and southwest,

though the west winds were slightly in excess of those from the east. It is probable that further observations are needed to enable any sound generalizations to be made.

The prevalence of clouds was almost constant, during the period of observation there were 5,473 hours of total cloudiness against only 901 hours of clear sky. During 82 days the sky was totally obscured, while during the whole period there were only two days wholly clear. It was raining or snowing 23 per cent. of the time and foggy 19 per cent. For the whole year there were 260 snowy days, but only 20 on which rain fell.

The report on the fishes, after some historical notes, discusses them under two heads—Antarctic, from within the Antarctic circle, and Subantarctic, chiefly from the Magellanic region. All the Antarctic fishes collected by the *Belgica* expedition are species or types which elsewhere belong in water abyssal or of greater depth than one hundred fathoms. No pelagic or littoral species were taken, and only on one or two occasions were specimens which might have proved to be surface species observed. Attempts at fishing with hook and line in moderate depths were unsuccessful, the stomachs of seals never and of birds only once contained débris of fish. The author notes that the expedition on the *Southern Cross* which followed the *Belgica* in 1898–1900, was the first to bring back littoral fishes, as well as pelagic forms, the former represented by species of *Scopelus* and *Pleuragramma,* the latter, *P. antarticum* Boulenger, being the most southern fish known up to the present time. The expedition on the *Erebus* and *Terror,* under Ross, was the first to discover and describe a true Antarctic fish, but it is to be anticipated that the recent expeditions will add largely to the present list.

The fishes taken by the *Belgica* belong to three families, Nototheniidæ, Macruridæ and Raiidæ, all new, and comprise five species of as many genera, represented by specimens and egg cases. The latter are supposed to represent a new species, of which the fish itself *Raia arctowskii* Dollo, was not obtained. The naturalist of the *Belgica* also collected seven Subantarctic fishes, all known forms. The author has made of his report a general summary of the ichthyology of the Antarctic regions, with a great wealth of detail and discussion of derivation, evolution and distribution, as well as of the relations of the fauna to hypotheses of a former Antarctic continent, in which he concludes that all the known facts lend themselves to explanation by Osborn's hypothesis.*

Bürger finds the collection of nemerteans to contain four species of Antarctic origin, two *Amphiporus,* a *Carinina* and a *Tetrastemma,* all new. These are the first of the group to be obtained from the region. *Cerebratulus magelhaensis* Bürger and a new *Amphiporus* were also obtained in the Magellanic region, and are fully described and illustrated.

Fourteen Antarctic hydroids were collected, of which four are also known from the arctic regions. One species each belonged to the Haleciidæ, Campanulinidæ and Plumulariidæ, three to the Lafoëidæ, and three to the Sertulariidæ. There were no new genera, but of the species nine appeared to be new. Most of the specimens were obtained by the use of tangles from relatively deep water, and the material was sparse and fragmentary.

WM. H. DALL.

Introduction to Pharmacognosy. By SMITH ELY JELLIFFE, Professor of Pharmacognosy in Columbia University. Philadelphia, W. D. Saunders. 1904. 8vo. Pp. 275; 74 figs.

Pharmacognosy, dealing mainly with the same material and using the same methods as does plant histology, has long been in need of treatment at the hands of one familiar both with the pure science and with the needs of the modern special student. Admirable works on the subject have appeared in other languages, but a great lack has existed in English. The present volume is one for which English-speaking students should be thankful.

The work falls into three divisions, animal drugs, vegetable drugs without organic structure, and vegetable drugs with organic structure. The first division is appropriately small, and the last constitutes the major portion of

* SCIENCE, XI., p. 566, 1900.

the work. A goodly treatise on each drug is found, embracing references to its origin; discussions of its gross structure, microscopic structure and features recognizable in its powder; and mention of constituent substances present.

Although no attempt is made to include all the drugs, yet few important ones will be missed by the student looking for information.

Excellent original illustrations accompany a large number of the descriptions. It is to be regretted that these are in some cases replaced by inferior mechanical reproductions of plates in larger works.

The discussions are in the main botanically correct and the style is fairly clear. The treatment of *Polygala senega* leaves something to be desired from the standpoint of anatomical accuracy. One wonders a little, too, at such expressions as 'Therefore the cork cambium of the wood bark produces an apparently abundant periderm,' and 'the nucleus of the young plant,' in speaking of the structure of seeds.

Imperfections aside, however, it is well within the truth to say that this volume is the nearest approach which has yet appeared towards filling the need of the day in this country.

Charles H. Shaw.
Medico-Chirurgical College
of Philadelphia.

SCIENTIFIC JOURNALS AND ARTICLES.

The January–February number of *The Journal of Geology,* which is the first one of Vol. XIII., contains a paper by Professor Albrecht Penck, of the University of Vienna, on 'Glacial Features in the Surface of the Alps.' He concludes that "The actual surface features of the Alps do not at all correspond to those of a water-worn mountain range. Their conformation is mostly due to ice-action." Mr. E. B. Branson contributes a systematic paper on fish teeth, entitled 'Notes on Some Carboniferous Cochliodonts, with Descriptions of Seven New Species,' which is illustrated by two plates. Dr. Charles P. Berkey describes the 'Laminated Clays of Grantsburg, Wis. (with Chronological Deductions),' which is illustrated by a map showing the glacial deposits of that region. Mr. Edward M. Shepard gives an interesting account of 'The New Madrid Earthquake,' accompanied by five figures, and states that 'the elevation and depression of the land in the New Madrid region * * * were due to the great artesian pressure from below.' Dr. Charles R. Keyes contributes a paper, with five figures, on the 'Structure of Basin Ranges' as found in New Mexico. Professor Stuart Weller contributes a valuable article on 'The Classification of the Upper Cretaceous Formations and Faunas of New Jersey.' It contains a valuable chart showing the equivalence of the classifications of Cook, 1868; Clark, 1892–1904; Knapp-Kümmel, 1898–1904; and Weller, 1905.

The American Geologist for February contains, as the leading article, a paper by Dr. Alfred C. Lane on 'The Coarseness of Igneous Rocks and its Meaning,' illustrated by a plate showing the 'Luster-mottling in Drill-cores of Ophites.' Professor L. C. Glenn contributes a biographical sketch, with portrait, of 'Gerard Troost,' the first state geologist of Tennessee. 'Notes on Some Rocks and Minerals from North Greenland and Frobisher Bay,' illustrated by a plate showing the banded limestone of Frobisher Bay, is published by Professor B. K. Emerson. The 'Montana Gypsum Deposits' are described by Professor Jesse P. Rowe. The deposits are divided into the North Field, concerning which little is known; the Middle Field, given as of Carboniferous age; and the South Field, which is regarded as in the same formation as the gypsum beds of Wyoming and as of Permian or Triassic age. The paper is illustrated by three plates giving six views of the gypsum deposits and a map showing their distribution.

The Museum News for April, published in the interest of the museums of the Brooklyn Institute is issued in place of the *Children's Museum News* and will deal with matters relating to both the Central and Childrens' Museums. Its object will be to keep the public advised of changes in and additions to the collections, and to note the general work of the