. . . . . .

"'For what do they be bouncin' him?'' said Files-on-Parade.

"'E put the Microbes on the blink,'' the Color Sergeant said.

"'An' did the Microbes 'urt the Blink?'' said Files-on-Parade.

"'They put the Blink out of a job,'' the Color Sergeant said.

"'They are bouncin' Doctor Wiley, and the germs are runnin' free,
And the Microbes an' Bacilluses are chortilin' with glee,
For they'll get their starvin' 'ooks once more on folks like you an' me,
After bouncin' Doctor Wiley in the mornin'.''

—Horace Dodd Gastit, in *Harper's Weekly*.

SCIENTIFIC BOOKS

Handbuch der Klimatologie. Von Dr. JULIUS HANN, Professor an der Universität Wien. Dritte Auflage. 3 Volumes. Prices 15; 15; 23 Marks. Stuttgart, J. Engelhorns Nachf. 1908, 1910, 1911.

A laborious work is now completed and published. The progress of science may years hence suggest modifications and improvements. The history of science may bring into prominence the names of others than those quoted in this great work, but for the present this monument must stand alone, towering over other books as the pyramids of Gizeh tower over the valley of the Nile.

For forty years past Dr. Julius Hann has been filling meteorological journals and literature with a steady stream of works on the subject that has absorbed his thoughts and life. Neither Newton nor Laplace surpassed him in intense concentration of effort; neither Euler nor Humboldt have published more voluminously. Neither "The Voyage of the *Challenger*" nor all the polar expeditions of the past thirty years have contributed more to our accurate knowledge of the atmosphere of our own globe.

In three volumes of text totalling 1,400 octavo pages "The Founder of Modern Climatology" has given us both numerical and textual descriptions and comparisons covering all the characteristic features, both the general and the special local characteristics, of all the known climates of the globe. At first sight it would seem impossible to do this; but at numerous localities the forces that build up local climates are the same, so that the relative importance of one or the other force controls the result.

Complex as are the atmosphere and its relations to the earth and man, to geology and biology, to history and religion, yet all can be analyzed into temperature, moisture, sunshine and wind. The tabulation of these fundamental data gave Hann the handy material for statistical intercomparison and study. Hence his volumes are crowded with facts—dry facts, if you will, but reliable material for careful study. Of course the popular writer, the superficial traveler, the advertising land owner, is satisfied with a few striking items; but the careful engineer, the large planter, the discriminating physician, need every possible detail that can affect any feature of human interest. It is for these and all other accurate students that Hann has compiled these solid volumes. The exhaustive range of his reading, the continuous appeal to the pencil memoranda that he must have kept, the quotations of reliable figures instead of general verbal descriptions, make one feel that here we have condensed facts and not fancies. Even the elusive "sensible temperature" or "curve of comfort" or the sensation of temperature seems reducible to an exact function of temperature, humidity and wind.

Of course no satisfactory résumé of Hann's "Climatology" can be given here. We need only say that volume I. (Stuttgart, 1908) is the revised edition of an earlier work, translated and published in 1903 by Professor R. DeC. Ward, of Harvard University.

The second volume (Stuttgart, 1910) deals with the tropical zone or the whole region between the tropics of Cancer and Capricorn. This is one half of the whole globe and in some respects the most important half; it extends from New Orleans, Cairo, Bagdad, Hong Kong, Hawaii, and the Bonin Islands on the north, to Peru, Bolivia, Paraguay,

Madagascar, Java on the south. Therefore it includes the Amazon, Nile and Niger, Zambesi and the rivers of India. The third volume treats of the north and south temperate zones and finally, also, the Arctic and Antarctic regions. The latter are small in area but exceedingly interesting in their mysteries. The temperate zones are those on which we love to dwell because there the events of the modern world have taken place. Of course the six hundred pages of Hann's third volume, devoted to the temperate zones, and the following one hundred, devoted to the Arctic and Antarctic regions, are full of interest and novelty. Although we think our annual means of temperature are moderate and temperate as compared with those of the polar regions and the tropic zones, yet the monthly means and the annual ranges show the greatest contrasts. Thus we may have $-40°$ C. and $-50°$ C. as the normal for an average January in northeastern Asia, while the same Januaries in southern Asia, in Japan and China, Afghanistan, Persia, may be from zero up to $+10°$. By analogy we find the January temperatures in North America show similar contrasts, such as $-14°$ C. at Bismarck, N. Dak., and $+12°$ C. at New Orleans, or 10° C. at San Francisco and $-5.6°$ C. at Portland, Me. Such contrasts of average temperature give zest to life in the temperate zones.

CLEVELAND ABBE

Resultats du voyage du S. Y. Belgica en 1897, 1898, 1899, sous le commandement de A. de Gerlache de Gomery: Océanographie, les glaces, glace de mer, et banquises par HENRYK ARCTOWSKI; Schizopoda and Cumacea by H. J. HANSEN, 1908; Diatomées par H. VAN HEURCK; Petrographische untersuchung der Gesteinsproben von A. PELIKAN; and Quelques Plantes fossiles des terres Magellaniques par A. GILKINET. 1909.

Still another batch of publications on the results of the *Belgica* expedition to the Antarctic is at hand, and more to come, according to the schedule, though one can not help wondering if volume X., by Dr. F. A. Cook, will eventually be among them, as originally announced. In the present instance the work is by scientists of quite another stamp.

In his discussion of the different forms under which ice appears in those regions Arctowski attempts to systematize and sum up the data given much more fully in his journal of the voyage; and also to consider the question of the limits of the ice pack, historically and from the *Belgica* observations. The movements and behavior of the pack and floe ice are fully explained. The character of the surface and how it is affected by wind and snowstorms are admirably shown by excellent half-tone reproductions of photographs.

Hansen devotes 20 pages and three excellent plates to the study of the crustacean Euphausia, Cyclaspis and related forms of marine habitat, so characteristic of the austral seas.

Van Heurck treats of the diatoms obtained in samples of the bottom obtained in sounding and in the residue from melted sea ice obtained at various places. The diatoms of the plankton are reserved for further study. An appendix on the diatoms of Kerguelen and a complete list of polar diatoms, Arctic and Antarctic, complete the memoir which is illustrated by thirteen phototype plates whose execution leaves nothing to be desired.

The photography of the rock specimens brought home by the expedition is the subject of Pelikan's memoir. The rocks are crystalline or igneous, mostly granite, diorites, porphyrites, basalts and gangue minerals. Two plates of magnified microscopic sections accompany the text.

Gilkinet devotes a few pages to a few fossil plants, mostly beeches and *Myrtiphyllum,* not new, but which present a certain interest because they come from a station near Punta Arenas, not far from a locality visited by the Swedish expedition, and comprise species not hitherto known from that locality, but only from the Sierra de los Baguales at a considerable distance from the *Belgica* locality. Also the maps showing geological distribution have not indicated hitherto tertiary beds at