

For comparative purposes, therefore, the value of the numerous tables given in this book would have been greatly enhanced if data as to the depth of the water (and hence indirectly the light intensity), in which the various forms occurred, had been always included. This single criticism need not, however, prevent us from congratulating Dr. Glück on an exceedingly valuable contribution to the study of form variation and to aquatic biology.

Our Bookshelf.

Wettervorhersage: die Fortschritte der synoptischen Meteorologie. Von Prof. Dr. Walter Georgii. (Wissenschaftliche Forschungsberichte: Naturwissenschaftliche Reihe, Band 11.) Pp. viii+114. (Dresden und Leipzig: Theodor Steinkopff, 1924.) 4.50 gold marks.

THE title chosen by Dr. Georgii for this work—"The Progress of Synoptic Meteorology"—is perhaps rather ambitious for a work which runs to no more than 111 pages. It is largely an account of the meteorological theories of V. and J. Bjerknes and of F. M. Exner, one might almost say of the Norwegian and Austrian schools of meteorology, but it contains also short accounts of certain lines of research not especially associated with these schools.

After the first introductory chapter, which describes the construction of synoptic weather charts, there follows a summary of the views of V. and J. Bjerknes on the origin and structure of the cyclones of temperate latitudes, together with a short account of Exner's theory of cyclonic formation as a result of the obstruction of the circumpolar easterly winds by mountain ranges. The third chapter deals with the travel of pressure and wind systems and of the weather associated with them; in other words, with the phenomena upon which the practice of synoptic forecasting rests. This discussion is in terms of the two schools of thought to which reference has already been made; the moving streams of air are regarded as more fundamental than the pressure-systems with which they are associated, a conclusion which had been reached many years ago by Sir Napier Shaw in Great Britain as a result of his investigation into the life-history of surface air currents. The account of Ficker's idea of "high" and "low" cyclones and anticyclones towards the end of this third chapter is a timely reminder that no theory of cyclones and anticyclones is complete which relies on temperature differences in the troposphere for explaining the differences of pressure between these systems, for it is well known that at a height of about ten kilometres, *i.e.* near the top of the troposphere, variations of pressure occur at least as large as those observed on the ground, and these are potent factors in the determination of the pressure at the level of the ground. It is natural, however, that in dealing with progress in synoptic weather forecasting, greater stress should be laid on the phenomena of the lower layers, about which we have abundant information.

Meteorologists will no doubt be grateful to Dr. Georgii for condensing into so small a space material scattered in numerous separate papers in several

languages, and where abbreviation has been perhaps excessive, references are always given, which enable the reader to consult those papers for fuller information.

The Synthesis of Nitrogen Ring Compounds containing a Single Hetero-Atom [Nitrogen]. By Cecil Hollins. Pp. 423. (London: Ernest Benn, Ltd., 1924.) 55s. net.

It would be interesting to know how much time is annually expended in chemical laboratories in the preparation of carbon compounds, already recorded in the literature, but which their would-be discoverers believe to be new substances. The considerable waste of energy involved will, however, appear small if compared with that resulting from the choice of the less suitable methods of attack of a defined problem in organic synthesis. It cannot be said that existing safeguards, Beilstein, Richter, Stelzner, Meyer-Jacobsen, and the general indexes, are sufficient to protect us from these dangers.

Elb's "Kohlenstoffverbindungen" (1889) was an early attempt to meet this need, but the basis of the work was so broad that the execution of the plan seems a prodigious task at the present time, and only possible to a Mellor of organic chemical literature. Mr. Hollins has chosen a section of the heterocyclic compounds, cyclic substances with one ring nitrogen member, and has produced a compilation of very considerable utility, especially to those whose investigations touch the chemistry of the derivatives of pyrrole and pyridine. The arrangement of the material is excellent, and the information which the book can give is very readily accessible. The claim that the treatment is exhaustive is on the whole justified, but there are nevertheless omissions, for example, the list of *o*-nitrobenzaldehydes which have been converted into indigotins is incomplete. There are also inaccuracies such as the formula for dehydracetic acid given on pp. 188, 212, but neither the gaps nor the mistakes are so numerous as to detract seriously from the value of the book. The analogies which the author perceives as existing between certain synthetical methods are often suggestive, but the theoretical aspect is here of subsidiary interest and, though some of the views expressed can be vigorously contested, it is not an important criticism that the work is scarcely adequate as a treatise on reaction mechanism. Not only the author but also the publishers are to be congratulated on an enterprise unusual in English organic chemical literature.

R. ROBINSON.

League of Nations: Committee on Intellectual Co-operation. Index Bibliographicus: International Catalogue of Sources of Current Bibliographical Information (Periodicals and Institutions). Arranged and edited by Marcel Godet. Pp. xvi+233. (London: Constable and Co., Ltd., 1925.) 4s. net.

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