Our Bookshelf.

Effects of Winds and of Barometric Pressures on the Great Lakes. By John F. Hayford. (Publication 317). Pp. v+133+16 plates. (Washington: Carnegie Institution, 1922.) 2.75 dollars.

THIS book records what is probably the most complete investigation yet made of the effect of winds and atmospheric pressure on the slope of the surface of great sheets of water. It deals with Lakes Erie and Michigan, which are large and of fairly irregular outline and bed-contour, and are situated in a region where the meteorological conditions are well observed. Continuous records of water-level are afforded by several gauges on each lake, designed to smooth out the local wave-fluctuations. Mr. Hayford has constructed an elaborate theory connecting the daily change of level of the water surface, as revealed by each of these gauges, with the north and west components of barometric gradient on the current and preceding days; proportionality factors, varying with the station, are derived by the method of least squares from large numbers of observations. The winds, being more rapidly variable than the barometric gradient, are considered from hour to hour; the hourly change of level at any gauge station is related to the hourly changes in the values of a certain function of the wind-velocity during the hour in question and the following hour; the said function is derived partly by theoretical reasoning. The numerical constants of the theory have been worked out in great detail, in order that the real changes of content of the lakes may be derived from the gauge-readings with sufficient accuracy to enable the evaporation from the surface to be estimated in varying circumstances.

British Meteorological and Magnetic Year Book, 1920. Part III. Section 2. *Geophysical Journal*, 1920. (Air Ministry: Meteorological Office.) *1l.* 5*s.*

THIS publication comprises the daily values of the meteorological and geophysical elements at three observatories of the Meteorological Office, namely, Kew Observatory, Richmond; Valencia Observatory in Ireland; and Eskdalemuir Observatory, Dumfriesshire; and at the St. Louis Observatory in Jersey: daily values of solar radiation at South Kensington; wind components at fixed hours at four anemograph stations; tabulations of occasional soundings of the upper air; and results of observations of cloud and aurora. The annual supplement contains upper air temperatures by means of soundings with registering balloons and aeroplane ascents, giving monthly and annual averages with averages for the period 1917–1920; notes on seismological work at Eskdalemuir Observatory; the water-level recorder at Kew Observatory; and tables of monthly means of magnetic and electrical data for Eskdalemuir and Richmond respectively.

The introduction to the volume gives all details and necessary references to the actual data here brought together, following, in most cases, the arrangement of former years. It is to be noted that the soundings with pilot balloons and temperature determinations by means of aeroplanes will be discontinued, as these data now appear in the Daily Weather report.

The volume, like its predecessors, forms a valuable contribution to the study of the meteorological and geophysical elements, and the homogeneous nature of the data will be thoroughly appreciated by those who utilise the information.

The British Journal Photographic Almanac and Photographer's Daily Companion, 1923. Edited by George E. Brown. Sixty-second issue. Pp. 808. (London: H. Greenwood and Co., Ltd., 1922.) Paper, 2*s.* net; Cloth, 3*s.* net.

IT is a matter for congratulation that the abatement in the cost of printing papers has allowed of the use of paper of a quality superior to that which had to be employed for some of the preceding volumes of the Almanac. The arrangement of the matter is the same as heretofore. The Editor takes for the subject of his special article "What Camera and Lens to have," and hopes that those who are asked for advice on the subject will refer their questioners to it, and so provide a full answer and save their own time. Besides the calendar, which gives the public holidays in more than thirty different countries, there is a directory of Photographic Societies and other bodies, giving much information concerning each. The Epitome of Progress is the largest section, and the items are well classified and indexed. The usual statistical matter, photographic formulæ, and tables of all sorts, complete a most useful, practical and up-to-date reference book.

Proceedings of the Aristotelian Society. New Series, Vol. 22: Containing the Papers read before the Society during the Forty-third Session, 1921–1922. Pp. ii+242. (London: Williams and Norgate, 1922.) 25*s.* net.

THE volume contains the papers of the Session 1921–1922, abstracts of which have appeared from time to time in our Society notices. It reflects the great interest aroused by the discussion of relativity problems. Einstein's theory is the subject of a symposium to which Prof. Wildon Carr, Prof. T. P. Nunn, Prof. A. N. Whitehead, and Dr. Wrinch contribute. We may also direct attention to two papers, one by Prof. Johnstone on "The Limitations of a Knowledge of Nature," and one by Mr. Tavani on "Physical Space and Hyperspaces," both of which are of special scientific interest.

The Supremacy of Spirit. By C. A. Richardson. Pp. viii+159. (London: Kegan Paul and Co., Ltd., 1922.) 5*s.* net.

MR. RICHARDSON in this short volume sets forth, in clear and concise terms, the philosophical theory which he expounded in his "Spiritual Pluralism" in order to show its relation to the new psychology and its bearing on the somewhat dubious methods and even more elusive facts of psychical research. He states the case for psychical research, in its claim to be a purely scientific investigation, as well as it can be stated, but the argument is too brief to deal at all adequately with the scientific objections, those which are completely free from prejudice.