

not by the *a priori* reasonings by which theologians are accustomed to reach favourable results, but through a survey of scientific facts, largely from the biological sciences. Consequently, students of science will be able to follow this portion of the argument with patience, a thing they may often find difficult in this class of book. But in classing this volume with apologetic literature in general, we should not be acting fairly to Canon Streeter. It is a work of a very different type; one which all earnest students of the natural sciences would do well to read.

J. C. H.

### Our Bookshelf.

- (1) *Man and Weather*. By Prof. Alexander McAdie. Pp. vi + 99 + 18 plates. (Cambridge, Mass.: Harvard University Press; London: Oxford University Press, 1926.) 8s. 6d. net.
- (2) *Air Ministry: Meteorological Office, London. A Short Course in Elementary Meteorology*. By W. H. Pick. (Published by the Authority of the Meteorological Committee.) (M.O. 247.) Second edition, revised. Pp. 127 + 8 plates. (London: H.M. Stationery Office, 1926.) 1s. 6d. net.

(1) PROF. McADIE'S little book is written in an entertaining style calculated to impress meteorological principles on the memory. It consists of six popular lectures originally delivered in the Lowell Institute, U.S.A., in December 1924: (1) The strategy of weather in war; (2) weather in peace; (3) the structure of the atmosphere; (4) clouds, fogs and water vapour; (5) lightning; and (6) droughts, floods, and forecasts. The book should be most successful in awakening an interest in the subject, but it is marred by a quite unintelligible table on p. 62 representing the balance of precipitation and evaporation by land and sea. The unfortunate reader led into this quagmire is offered no helping hand from the author, who ironically observes: "From the data given above it would seem that the total rainfall for the globe is much less than the evaporation." This is no paradox; it is surely a physical impossibility that precipitation, being the complementary process of evaporation, should in the long run be less over the whole globe.

(2) Mr. Pick's book, which contains an appreciative preface by Dr. Simpson, is couched in the more staid language of a British Government publication. It skilfully compresses the fundamental principles of meteorology into a small compass, but in a future edition the author would do well to revise various statements in the light of most recent knowledge. Why, on p. 26, should relative humidity be deemed a more important meteorological matter than absolute humidity? Both are fundamental matters in the physics of the atmosphere, and as regards physiological effects it is now realised that absolute humidity is the more important condition. If there is a defective chapter in a generally good book, it is that on

"Weather Lore," inasmuch as too strict a regard is paid to the letter of weather rhymes and too little to the spirit thereof. The countryman's 'February fill-dyke' is a very real phenomenon in seasonal hydrology, and one is not justified in assuming, as Mr. Pick does, that this necessarily implies a belief in much rain in a month which rainfall statistics show on the average to have relatively little rain. There is no reference whatever to the fact that towards the end of winter, after the season of small evaporation and little absorption of water by vegetation, the water-table is highest, and the rivers and brooks are normally fullest, being ready to cause flooding with less rain than would suffice at the beginning of winter in November. Again, it may be doubtful whether any one really takes the forty-day prediction associated with St. Swithin's literally; yet the spirit of the saying has just this much climatic foundation: that if disturbed weather once sets in about the middle of July, or for that matter at any time in July, it is liable in England to be very persistent, with a long succession of battering rainstorms running into weeks. We all know that type of July and August, and the countryman has embodied such climatic experience in a proverb the literal terms of which are (as Mr. Pick observes) quite untrustworthy. The actual date has probably no significance whatever, being just a landmark, and before the rectification of the calendar it corresponded to July 26.

L. C. W. B.

*Penrose's Annual: the Process Year Book and Review of the Graphic Arts*. Edited by Wm. Gamble. Vol. 29, 1927. Pp. xvi + 127 + 70 + 72 plates. (London: Percy Lund, Humphries and Co., Ltd., 1927.) 8s. net.

THIS volume fully maintains the reputation the previous members of the series have earned for the editor and publishers. The newest item in it is a description by Mr. Fishenden of the Pantone process, which Mr. Ronald Trist has now so far perfected that he no longer objects to publication of its details. "Planished plates of suitable metal are first coated with an electro deposit of copper to a thickness of, say, five one-thousandths of an inch, and then with a chromium deposit of two ten-thousandths of an inch." The plate is coated with a solution of fish-glue and bichromate, exposed, washed, and burned-in as usual in photo-engraving. It is then treated with hydrochloric acid, which dissolves the chromium where it is exposed, but as it does not attack the underlying copper it cannot etch too deeply. The plate is next dipped into a solution of a silver salt, and then a few drops of mercury are rubbed over it. Amalgamation takes place immediately except in those parts where the chromium surface remains, and the mercury surface repels the ink without the use of water. The plate is now ready for trimming and mounting. The advantages of the process are many. It saves much time, as underlaying, re-proving, and fine etching are unnecessary. Fresh plates can be prepared as rapidly and cheaply as