

PROFESSIONAL METEOROLOGY AND EVERYDAY NEEDS

Everyday Meteorology

By Prof. A. Austin Miller and M. Parry. Pp. 270 + 22 plates. (London: Hutchinson and Co. (Publishers), Ltd., 1958.) 30s. net.

Farming Weather

By L. P. Smith. (Nelson's Agriculture Series.) Pp. ix + 208 + 8 plates. (Edinburgh and London: Thomas Nelson and Sons, Ltd., 1958.) 15s. net.

BRITISH people are notorious for using their weather as a conversational gambit and as an alibi for Latin holidays. This combination of naive intolerance and bemused escapism is reflected in the startling fact that the Meteorological Office is run, quoting Prof. A. A. Miller, "on a total annual budget of little more than the cost of a single modern bomber". Moreover, the proportion of this pittance allocated to specialized weather forecasting and advisory services, for example, for farmers and growers, is small compared, for example, with that devoted to upper-air research. The current pre-occupation of our mathematical meteorologists with the physics of the atmosphere and the traditional restriction of Dunstable to sweepingly generalized forecasts marketed afterwards in newspapers and on television screens has perpetuated our habitual neglect of applied meteorology in terms of our everyday needs.

It is not surprising that, of the two volumes under review, one has been written by two geographers pledged to teach the weather not only *per se* but also in relation to society, and the other by a meteorologist pledged to direct weather advice to farmers and growers. Both books achieve an easy, readable style.

"Everyday Meteorology" deals with the origin and collection of weather data, the causes of weather, and the significance of frontal zones and air masses in the atmospheric circulation. Local and world types of weather are then described and finally some problems of weather forecasting, of 'living with' the weather and of 'harnessing' the weather, are discussed. Attempts at three-dimensional representation of weather systems are, unfortunately, few and in two instances quite misleading. In Figs. 38 and 39 upper winds relating to horizontal profiles are inserted on vertical cross-sections through frontal systems. The impression given in the second diagram is of a wind blowing down towards the Earth's surface through a large cumulus cloud. Parts of Chapter 9 are conspicuously inadequate in reference to soil climate, the growing season and land aspect. "A soil containing much water" is not necessarily "a clay soil" (p. 192), and the optimum insolation slope varies with the time of year between south-west and south-east (p. 197). These and other minor omissions and inconsistencies tend to detract from what is otherwise an attractively compiled work which renders accessible to the layman many meteorological ideas which might otherwise be beyond him.

"Farming Weather" aims at a particular section of the popular market. It presents a digestible and comprehensive survey of weather elements and factors and weather forecasting as they affect agriculture. The lack of precise recommendations to farmers on coping with weather hazards may be criticized by some. It should be stressed, however, that every farm, indeed every field, may require different weather advice because of small-scale variations in land morphology, soil conditions and

associated micro-climates. Generalized advice, even for a local district, may be relatively useless. Adequate consultation of L. P. Smith's book should enable the farmer, or grower, to plan his programmes so as to anticipate certain weather hazards and accommodate them when they occur.

Professional meteorology would benefit by devoting more effort than heretofore to the applied problems so ably discussed in these two volumes. "Meteorology without Mathematics" may be regarded as impracticable and futile by the meteorologists, but mathematics without a morphological approach to weather study seems unlikely to provide us with a properly trained and localized advisory weather service.

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THE LIVING MOLLUSC

Molluscs

By Dr. J. E. Morton. Pp. 232. (London: Hutchinson and Co. (Publishers), Ltd., 1958.) 10s. 6d. net.

ALTHOUGH Dr. J. E. Morton states that there has been no general book on malacology written in Britain for forty-five years and so claims comparison with B. B. Woodward's brief "Life of the Mollusca", his book bears comparison better with Pelseneer's "Mollusca" published in 1906. Of necessity both much shorter and far less fully illustrated, yet it marks a notable stage in the growth of knowledge concerning the most structurally diverse of the invertebrate phyla. Pelseneer's volume represented the culmination of a notable period of comparative anatomy; it left the stage set for elucidation of the function of organs there so clearly described.

Dr. Morton's book represents the first comprehensive attempt, probably in any language, to summarize what has more recently been discovered about the function and significance of these organs, adding up in many cases to a very full understanding of the mode of life of the animals possessing them. He is particularly well qualified to deal with such matters by the beauty of his research and the distinction of his writing. Thus we read that "If pulmonates lack the structural variety shown by opisthobranchs, this is because they have made a much more subtle use of physiological adaptations", that the Gastropoda are a "living museum of adaptive morphology, nearly every family having some distinctive pattern to show", that nudibranchs are "the most colourful and extravagant of all gastropods", that "cephalopods are organized upon a more stereotyped pattern than gastropods or lamellibranchs; but this is a pattern of high success". He surmises that the extinct ammonoids "could make leisured saunters".

There is much to praise in this book and for any student of the Mollusca, as I have found, to learn from it. The restriction on length has made possible a price well within the range of all, amateur, student or professional zoologist, interested in malacology. It is, however, unfortunate that there is so little space and so indifferent a printing surface for the text-figures at which the author excels.

All this is not to say there is not matter for criticism. The impression is given that the bivalves possess a 'two-piece' shell, whereas the ligament is an integral part of the shell. Those who study oysters will be surprised to discover that at no stage is there a foot or a byssus gland, also that the adult may "break free". Although classification of the bivalves is far from satisfactory, matters are not improved by employing that of Douvillé. C. M. YONGE