The *Observer's Handbook* deals strictly with observing routines and only the minimum of attention is given to descriptions of the construction and care of instruments. These matters will be dealt with in another new book which will be called the *Handbook of Meteorological Instruments*, which it is understood will be published in about one year's time. Until it appears the present work is somewhat incomplete.

Throughout the book the requirements of the international synoptic code are constantly in mind, and climatological observers, who are only concerned with codes in a minor degree, may feel that the code aspect is more prominent than they would wish. In this matter the preface asks that they should pass those parts of the book which apply only to synoptic stations.

The information is of course authoritative and the instructions are plainly and clearly given. For a first edition the book has very few defects. It is hoped, however, that the first possible opportunity will be taken to reset the type of the index. In almost any technical book the index is important, but in a reference work of this kind it is more than usually so. It is stated on the first page of the index that ' Principle entries are given in bold type ' but this valuable help is only used nine times in an index of about 600 items, roughly half of which refer to more than one page and would have justified its use. The indexing itself is thorough.

This book should be on every meteorologist's book shelf (or desk).

A.W.B.

Conference on Water Resources (Oct. 1951). Ed. Ross Hanson. Bull. No. 41, Division of the State Water Supply, Urbana, Illinios. 1952. Demy 4to. Pp. 336; 160 Figs. N.p.

The opening of a new Water Resources Building at Urbana was made the occasion for a conference at which a large number of papers were formally presented and informally discussed. This verbatim account of proceedings is in three sections : Hydrology (120 pages), Treatment (40 pages), and Radar-Weather (130 pages).

Part I deals with hydrological measurements, sedimentation, ground water, surface water, and ' Engineering meteorology,' a paper concerned solely with use of rainfall records and which provoked the just criticism that hydrologists do not take a sufficiently broad view of what meteorology can do for them.

Part II has no meteorology. The papers are on corrosion, composition of water substance, ion-exchange materials and boiler-feed water conditioning.

Part III abounds in mysterious initials. After a census of 32 radar-weather projects, almost exclusively American, there are copiously illustrated papers on cloud detection, relation of signal strength to rainfall rate, measurement of point and areal rainfall, fluctuations in signal strength, measurement of raindrop size, and hurricane tracking. A final discussion surveys outstanding problems in the use of radar.

The bulletin has something useful for all interested in rain – its source, its arrival and its subsequent fate.

H.L.P.

Climate and the British Scene. By Gordon Manley. London (Collins), 1952. 8vo. Pp. xviii, 314; 81 photographs (41 in colour), 75 maps and diagrams, 10 tables. 25s.

In this delightful book Prof. Manley portrays the weather and climate of the British Isles throughout the 24 hours, throughout the year and through the centuries. Whether the reader inclines to art or science or prefers hunting, shooting and fishing, he will find much of interest put before him in a most attractive manner and the book is a valuable and important addition to the New Naturalist series of which 22 volumes have now appeared. It is beautifully produced and good value at 25s.

So much trouble has gone into the selection and production of the illustrations and their quality is so high that one is tempted to deal with the book in two parts, the artistic and the scientific, but there must be no suggestion that they are separate; this is not the case and, almost without exception, every picture has its technical note of explanation. There are delightful colour photographs of landscape and skies from all parts of the country and among such a collection of fine pictures it is difficult to pick out individuals, but we should mention one or two. ' Birch trees following an ice storm ' by F. Goldring is a rare study of great delicacy and charm showing the many shades of blue associated with sunshine on snow. In contrast is ' January morning in Derby ' by Cyril Newberry, a study rich in reds showing the coppery smoke-haze of a frosty morning in town : it is so good that one can almost hear the crunching of wheels on the frozen snow – a triumph of colour photography. In black and white is an excellent air view through a hole in stratocumulus cloud showing Liverpool in the dense industrial haze below the inversion. This is by C. H. Wood who also contributes ' Snow in Victorian Bradford,' a night scene of great beauty. It is evident that there is much here for the artist.

For the scientist the book is an excellent introduction to meteorology in the wider sense, and the serious student who makes good use of the comprehensive and up-to-date bibliography which is provided at the end of each of the fourteen chapters will find a planned and extensive course of study at his disposal. The author sets out to demonstrate ' the myriad ways in which the British Scene in all its diversity is affected by the vicissitudes, regular and irregular, past and present, of our atmospheric environment ' and, drawing upon his own wealth of qualitative and quantitative recording of weather phenomena which he supplements by well-documented quotations from recognized amateur and professional meteorologists, he succeeds in producing a volume which a wide section of the population of these Islands and beyond would welcome as a present at any season of the year. It is certainly meteorology without a headache.

Local climatological peculiarities in all parts of the British Isles receive treatment : we are reminded of the contrast between the treeless windy uplands of Cornwall and the lush vegetation wherever there is protection, as along the Helford River, and in Devon where Dartmouth and Salcombe are similarly favoured. There is the breezy exposure of Peacehaven contrasted with the friendly shelter of Telscombe in the South Downs. On other coasts there is the distortion of trees due to the dominant wind from the sea as distinct from the prevalent south-wester; here wartime memories of the North Norfolk coast linger and we remember the incursions of North Sea stratus and stratocumulus which characterize the scene there according to season. We must mention too the frost hollows which menace the work of the horticulturist unless he is forewarned and the reviewer can personally confirm the cool current, if only about 2 mi/hr, which affects one's ankles even before the sun has quite disappeared behind the picturesque slopes of Rickmansworth. In the opposite direction, cities like London have less frost than suburban and country districts; the additional warmth is just sufficient to prevent the densest fogs at street level in the City, but towards the suburbs wet clay, industrial pollution and temperatures a degree or so lower combine to produce the worst visibilities. Thus the reader will be impressed by the author's well-known enthusiasm and capacity for detailed weather study. It is fascinating to watch the pen of a Dines anemograph as it records the gusts and lulls of the wind and traces atmospheric turbulence with its concurrent periods of seconds, minutes and hours, but it remained for Gordon Manley to rise to the elegant description of 'a Dines anemograph in full cry during a gale.'

R.M.P.

Physical Geography. By Philip Lake. Cambridge University Press. 3rd edition, 1952. Demy 8vo. Pp. xxviii, 424; 210 Figs., 7 maps, tables; 17s. 6d.

This work is a standard text-book for late school and early university students, and the fact that since first publication in 1915 it has had 13 reprints and two new editions is evidence that it fulfils a continuing need. The work is divided into three parts, dealing with the air, the waters and the land, and the revision of these for the second edition (published in 1947 under the editorship of J. A. Steers) has been by separate authors, respectively Gordon Manley, J. A. Steers and W. V. Lewis.

The meteorological section is unfortunately inclined to offer facile explanations for matters which are really very difficult and controversial, and in outlook as well as minor matters such as notation, is somewhat out of date. The new knowledge which has accumulated since the war, largely due to the development on a continental and hemispherical scale of three-dimensional air-mass analysis, has modified our outlook on subjects as important as the general atmospheric circulation and the frontal depressions of middle latitudes in ways which could hardly have been envisaged in 1947, when the second edition was published, and we may hope that a further revision will be made for the next edition to bring the general outlook and emphasis into line with modern thought.

The remainder of the work seems comparatively free from this failing, but in the final chapter, on river regimes, more emphasis might have been given to the principle illustrated by the Lynmouth disaster, that the effects of one extreme occurrence can outweigh those of centuries of normality.

Notwithstanding these criticisms, the work as a whole reaches a high standard of scholarly lucidity which should commend it to a scientific public much wider than that for which it was originally intended.

J.M.C.

Annual Report of the Director of the Meteorological Office, April 1951-*March* 1952. H.M.S.O. Small royal 8vo. Pp. 54; tables. 2s.

Among the many items mentioned in this report three seem to call for special comment : the supply of forecasts to the general public, forecasting research, and gliding. None looms large in the budget, and perhaps for this reason it is worth making suggestions. The great body of the work will continue, as it must, with only slow changes.

The first is not to be confused with the much more expensive work of forecasting for aviation, public utilities, government services, and other concerns whose needs are vital. The general public consists of those who obtain their weather forecasts by radio, through the press, or from the milkman. In the report, we find within eight lines the following : 'It was not found possible to resume the radio-telephone AIRMET broadcasts, as no medium- or long-wave band was available . . . . Daily weather bulletins (B.B.C. Sound) for the general public . . . . were maintained.' It has often been argued that AIRMET was not intended for the general public : but that did not prevent them from using it, and the great increase in public knowledge of meteorology gained by the expansion of the Meteorological Office and the Royal Air Force during the war increased the public use of it enormously. It was not advertised and many people only came upon it by chance : had it been publicized there is no knowing what use would have been made of it. Now it is dead, and the B.B.C., who monopolize British radio, have not seen fit to make their weather service more frequent or helpful. The B.B.C. remains very smug, in the knowledge that the AIRMET bid failed through lack of numerical support : if it can keep the public ignorant of the value of a first-rate forecast service it will never have to provide one. In spite of the enterprise of the Third Programme even the most socialistic meteorologist will be driven to support commercial radio simply because he knows it will give him the forecasts. In Canada advertisers are charged extra for the programmes next to the weather forecasts. It