THE METEOROLOGY OF THE FALKLAND ISLANDS AND DEPENDENCIES, 1944–1950. J. PEPPER. London, Crown Agents for Oversea Governments and Administrations, 1954. vi+249 pages, 33 text-figures, 15 plates, 12 diagrams and sketches. Price £2–2–0.

GRADUALLY the few remaining corners of the earth's surface as yet little explored by man are yielding their secrets to modern scientific inquiry. Since the later stages of the 1939–45 war the frontiers of accurate knowledge relating to climate and weather have been pushed, largely through British enterprise, nearer to the South Pole. The chain of permanently manned meteorological stations now at work in Britain's 60 degree slice of the Antarctic and sub-Antarctic owes its origin to a naval expedition, "Operation Tabarin", which during the years 1944 and 1945 established bases at Laurie Island in the South Orkneys, Deception Island in the South Shetlands, Hope Bay in Graham Land and Port Lockroy in the Palmer Archipelago. After the war the expedition was transferred to the control of the Colonial Office and with the progressive recruitment of personnel additional bases came into being. Before long a network of ten observation sites was formed within the area extending from lat. 51° to 68° S. and from long. 36° to 67° W. This provided the foundation for a small meteorological service on modern lines with headquarters at Stanley, East Falklands, which has since undertaken the regular supply of weather forecasts for shipping, aviation and general use, as well as the collection and publication of climatic data.

The handsome volume under review deals ably with the surface observations accumulated at each station between 1944 and 1950. As His Excellency the Governor of the Falkland Islands suggests in a foreword, the whole series forms perhaps the largest single body of meteorological data for the Antarctic and sub-Antarctic yet issued. The upper air observations are reserved for separate publication later: one could have wished to see at least a summarised preview of this important material included here, our present knowledge of atmospheric behaviour at high levels over the southern hemisphere being so fragmentary. The book is divided into three parts, the first of which (94 pages) contains Dr. Pepper's informative and thorough discussion of the observations. Part 2 (20 pages) consists of a gazetteer giving the history, sites and general surroundings of the bases, plus a map and photograph in each case. In Part 3 (127 pages) we have a detailed tabular presentation of the data at all the stations for these elements: barometric pressure, air temperature, relative humidity, precipitation, sunshine, visibility, wind direction and speed, amount and height of cloud, state of weather. Owing to the rigours of the climate, maintenance of the observations with regularity was beset by special difficulties; from the description given of the numerous hazards and hindrances encountered it is clear that high praise must go to the scientific personnel concerned for their courage and ingenuity in battling so successfully against the forces of nature.

The extreme minimum of surface air temperature observed at any base was −39° F. (−39·44° C.) on 8 September 1949 at Marguerite Bay, in lat. 68° 11′ S. On 24 July 1946 the same station (the only one southward of the Antarctic circle) experienced an increase of over 30° F. (16·7° C.) in 90 minutes: the thermograph record of this remarkable surge is reproduced in the volume. Of particular interest to glaciologists are appendices relating to the distribution of pack-ice in the Southern Ocean, the nature of winter ice in the inland waters of Deception Island, and the diverse forms of solid precipitation found to occur in the sub-Antarctic. Among these latter are hair-like snow crystals between 2 and 5 mm. long and of negligible thickness deposited (solely, it seems) by deep layers of fog or low stratus cloud.

There is little in the book that calls for criticism. The reproduction of the photographs leaves something to be desired, and a well-arranged contents list does not wholly compensate for the lack of an index. On page 6 "Fahrenheit" appears as "farenheit" in three places and on page 91 "rain-gauge" is twice mis-spelled. But these are minor defects. The volume makes a most valuable contribution to scientific knowledge of the sub-Antarctic and reflects great credit on all who have had to do with its preparation and production.

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