

has lately become a subject of much attention. The chapter on sampling contains an extensive review of the methods available and, although no experimental details are given, the comprehensive list of references will help the reader to overcome this.

Success in coping with any analytical problem by gas chromatography is dependent on good column technology, and appropriately one of the longest chapters is devoted to this. Column efficiency and the theory of column processes are discussed in the minimum necessary detail, and among other related matters a particularly useful appraisal of the role of the solid support is given. Considerable attention is also given to the subject of detection systems for which, in the course of time, almost every physical method of measurement has been employed. Here the obvious pitfall of attempting too much has been avoided without the author confining himself only to the commonly available forms. One would have thought, however, that the electron capture detector could justifiably have been considered at greater length.

Electronic integration systems are playing an increasingly important part in the interpretation of analytical data. Most chromatographers will therefore find interest in the chapter on applications of digital electronic systems where the general philosophy of integration is discussed, but surely this should follow the succeeding chapters on interpretation of analytical data.

Another subject of singular importance to the chromatographer is peak identification which is dealt with in two chapters, one on ancillary systems (for example, in line use of spectrometers), and the other on reaction systems which involve chemical techniques. A final chapter deals with automatic process gas chromatography.

Although expensive, this is a book which will be particularly appreciated by those to whom gas chromatography is just another analytical technique with which they have become familiar.

E. A. WALKER

MAPS OF THE ANTARCTIC

Glaciers of the Antarctic

By John Mercer. Pp. 10+4 plates. (Antarctic Map Folio Series, Folio 7.) (New York: American Geographical Society, 1968.) n.p.

The Antarctic Atmosphere

Climatology of the Surface Environment. Compiled by the US National Records Center and W. S. Weyant. Pp. 4+13 plates. (Antarctic Map Folio Series, Folio 8.) (New York: American Geographical Society, 1968.) n.p.

THERE are to be about twenty folios in this series, summarizing present knowledge of the Antarctic in so far as it is suitable for presentation in atlas form. The series as a whole was introduced to the readers of *Nature* by G. de Q. Robin (208, 439; 1965) and his general remarks still apply. The criticism of these two folios is that advantage has not been taken of the atlas form—or much of the information is unsuitable for presentation on distributional maps. Folio 7 consists of a descriptive review, after the manner of a scientific paper, with 155 references. Negligible information is given on the maps; on one sheet you will find maps of several sub-Antarctic islands each at a different and irrational scale (the scale for plate 1 is wrong). What is it about the occurrence of a glacier which makes it useful to plot the geographical distribution? Surely it will be better to consider the fundamental conditions which give rise to the occurrence of glaciers—wind, temperature, and precipitation.

This criticism is to a certain extent answered by folio 8 which in addition to the parameters already named considers the temperature/wind relation, cyclone tracks, blowing snow, and cloudiness. I was disappointed to find only three maps: a striking picture of mean annual

temperature, mean cloudiness, and an artistic impression of cyclone tracks. I am aware that there is some danger in drawing isolines through a pattern of observing stations which are too widely spaced, but this is largely a matter of choosing an appropriate contour interval and choosing a reasonable scale for the map, which should not attempt to give too much detail. Surely if mean parameters may be plotted, their variability may be plotted also, and if it is recognized that an atlas is probably for the use of a non-specialist in the discipline considered, then I believe that sketches, such as the cyclone tracks, are valuable and justified.

For each continental station, some attempt has been made to record the period of years to which the observations relate, but unhappily this has not been extended to the large number of sub-Antarctic stations extending as far as 40° N. This vital climatological statistic, so easily included at the time of compilation, will be beyond the reach of the climatologist using this atlas in 25 years' time and having his more recent records for comparison.

The series as a whole will inevitably be compared with the Soviet Atlas Antarktiki (Moscow: Glavnoye Upravleniye Geodezii i Kartografi, 1966) which, with the same subject matter, makes a minimum use of histograms and wind-roses, and a maximum visual impression by the use of striking colouring for a large number of small-scale distributional maps.

S. EVANS

OBITUARIES

Anthony Richard Philpotts

TONY PHILPOTTS, who died in May, aged 47, was a spectroscopist who made some very important contributions to industrial chemistry.

After graduation from Cambridge in 1942 he worked with Dr G. B. B. M. (now Sir Gordon) Sutherland in the physical chemical laboratories on war problems, notably trying to find the composition of enemy aviation fuel, using infrared absorption spectroscopy which was still undeveloped for analysis.

In 1945 Philpotts joined the central research department of the Distillers Company Ltd at Epsom, where he applied spectroscopic techniques to problems ranging from the structure of polymers of formaldehyde and acetaldehyde to the measurement of absolute intensities of absorption bands. He developed a profound knowledge of the relationships between the structure of a compound and its infrared spectrum which he applied to analytical problems. One striking success was the development of a method for analysis of the oxidation products of cumene, a step which proved essential for the successful development and operation of the Distillers cumene/phenol process; phenol is produced by the oxidation of cumene in controlled conditions, followed by cleavage of the resulting hydroperoxide to give phenol and acetone. In 1960 Philpotts took charge of all the analytical research and services at Epsom.

Philpotts' published work is not extensive because most of his efforts were devoted to solving problems in which industrial security considerations precluded publication. He was, however, one of the first to appreciate the effects of slit-width on absorption measurements and his paper in 1951 pioneered the measurement of absolute intensity.

The use of infrared spectroscopy for structural analysis of organic compounds was his special interest. He published a valuable paper on spectra of peroxides but his main work on the correlation between absorption frequencies and structure of unsaturated compounds containing chlorine or oxygen has not appeared in print. It