

## Reviews

INTERNATIONAL AURORAL ATLAS. Published for the International Union of Geodesy and Geophysics. *Edinburgh: University Press; Chicago: Aldine Publishing Company.* 1964.  $11\frac{3}{4} \times 8\frac{1}{2}$  inches, 20 pages + 4 colour plates, 52 black and white plates, and 2 figures. \$8.75 (in U.S.A.).

This atlas has been prepared as a replacement for the "Photographic Atlas of Auroral Forms" and its supplement published in 1930 and 1932 for the International Geodetic and Geophysical Association. Since the earlier atlas has been out of print this handsome new publication will be widely welcomed on that account alone. The committee responsible for the new atlas has also carried out an extensive revision of the system of classifying and reporting auroral forms. On the whole the revised system seems advantageous, since it permits the characteristics of auroral forms to be described more precisely, if necessary, without changing the basic vocabulary employed in the past. Thus it is still possible to refer to a homogeneous arc (HA), but if it is necessary and appropriate one can use a fuller description, such as a  $mp_1HA3c$ , meaning a multiple pulsating homogeneous arc of international brightness coefficient 3 and of normal green colour. In other words, the old terminology has been largely retained to provide the basis of the classification, which has been systematized and expanded. Two innovations are the introduction of the term "patch" (P) and "veil" (V) to describe varieties of what were previously called diffuse surfaces.

The photographs depict a wide range of types of auroral forms observed, and their classification according to the new scheme. The photographs are in general well chosen to illustrate the different types of auroras. In some instances, such as plate 1, which illustrates a homogeneous arc, the impression given by the photograph does not accord with this reviewer's idea of the form. However, this shows the difficulty of con-

veying by means of photographs the same visual feeling obtained in observing auroras directly. This difficulty is probably related to the restriction in angular field of conventional photographs, whereas in viewing a homogeneous arc directly an observer scans a much larger field. In this connection the inclusion of 18 all-sky camera photographs of different types of auroras is most valuable.

The more rigorously defined brightness indices are very desirable. Unfortunately, the section describing these seems rather lacking in precision. It is stated that the intensity index refers to auroras having a brightness of *less than* 100 rayleighs. Since the zenith night-glow brightness is about 100 to 250 rayleighs and no method of subtracting this is discussed, the significance of intensity indices near zero seems ill-defined. Considering the imagination and vigour displayed by the committee in the matter of auroral nomenclature it seems to me regrettable that they did not go further in the matter of intensities and define more precisely the limits between which the brightness should lie for each intensity index. For example, it is not clear whether an auroral form having a green line brightness of 5 kilorayleighs should be classed as intensity 1 or 2. Some definite guidance on this point would have been useful. It would also have been appropriate in this section to define the rayleigh explicitly. Strangely enough, the well-established term "International Brightness Coefficients" is not employed and it is not clear whether it was the intention of the committee to effect its replacement by "intensity index" or "brightness index".

The symbols recommended to define colour classes deserve some comment. As symbols descriptive of certain colorations of auroras they should be of definite utility. Whether, as suggested, the terms colour class-a and colour class-b should be considered the equivalent of the terms type-A red and

type-B red auroras is debatable. Perhaps the last named expressions will continue to be useful in describing reddening effects connected with great and small heights respectively.

There is little doubt, however, that this very beautifully produced work will be an indispensable reference book for all engaged in auroral physics and that the terminology it introduces will become widely used in the literature.

A. VALLANCE JONES

**MAN AND THE CONQUEST OF THE POLES.** By PAUL-EMILE VICTOR, Translated by Scott Sullivan. *New York: Simon and Schuster. 1963. 9¼ x 6¼ inches. 320 pages, 32 plates, endpaper maps. \$6.95 (in U.S.A.).*

Paul-Emile Victor has made his mark as an explorer and as a scientist both in the Arctic and Antarctic. As leader of the *Expéditions Polaires Françaises* he has organized and led ventures to both polar regions that have resulted in the accumulation of a mass of data on these parts of the world. The work of the E.P.F. illustrates the new era of polar exploration — the careful, painstaking, often monotonous accumulation of many types of information.

In this book M. Victor shows his appreciation and understanding of the feats of all those polar explorers in whose footsteps, literally and metaphorically, he has trod. Because M. Victor knows the polar regions as few others do, he is able to describe the travels and adventures of previous explorers in a meaningful way. Too often the explorers of the Arctic and Antarctic have been portrayed as feebly fumbling their way north or south into the unknown, ill-equipped both physically and mentally. M. Victor, with sympathy and insight, shows how well equipped many of the expeditions were for their day. He pays a great deal of attention to the influence of scientific and technological improvements on the course of polar exploration, and there is a lot of detail on sledges, rations, and that sort of thing.

M. Victor has packed a great deal

of information into comparatively few pages. The constant moving from north to south, and the piling up of detail may leave the reader a little breathless at times; but the book is well written and well translated, except for an occasional lapse or two. The photographs are not the usual shots of the cold lands, and the book has an excellent index.

Such a book, by an acknowledged polar expert should deserve unqualified praise from any reviewer. On the surface, it would seem to fill a real need — an easily read, comparatively short, authoritative, account of all polar exploration that would obviate the need to resort to the original sources for every detail. Anyone interested in polar exploration who has had occasion to use P. D. Baird's excellent summary accounts of "Expeditions to the Arctic", originally published in *Beaver* in 1949, and recently reprinted, realizes the value of having an accurate account of each northern venture set out in such a way that its main features can be readily seen. Despite M. Victor's book, and others, there is still no good, accurate, and up-to-date account of exploration and discovery in the polar regions between two covers. M. Victor's book errs in relatively minor matters, but this is enough to spoil the book for the specialist.

Two examples will illustrate this. On page 188 M. Victor states that a member of the 1930 expedition that landed on Bear Island discovered Salomon Andrée's corpse in the bottom of the boat. On page 244, describing conditions on the ice after the *Italia* had smashed down on the pack, the writer misspells Pomella, and states that he had a fractured skull, without mentioning that he was dead. He also adds an extra "g" to Biagi's name. The work abounds in such small errors.

This good book will not lead the general reader very far astray, but it is not likely to be highly valued or much used by the specialist. And even the general reader needs the references to other works set out more adequately than has been done here.

JIM LOTZ