

Frozen Earth

The World of Ice: A Natural History of the Frozen Regions. Pp. 120. By B.S. John. (Orbis: London, 1979.) £5.95.

THIS attractively produced book would look well on any coffee-table and should arouse interest in the World's ice in all its varied manifestations. Brian John has written a stimulating and, for the most part, basically sound account of the ice-covered or frozen regions of the Earth that assumes little acquaintance on the part of the reader with technical terms, whether geographical, glaciological or biological. (A glossary is included.) It is therefore a book for the interested layman, the general reader, and only superficially for the student, the scientist or the naturalist. It is illustrated by about 100 superb colour plates, some covering a page or double-page spread; the layout is spacious, the quality of production high and the price very reasonable.

The text is clearly written but, inevitably, compressed and simplified, so that the unwary or a reader unfamiliar with the subject can be misled at times. Just to select a few examples, we are told that the World's climate has for most of the time been very much colder than at present (page 10), ignoring the long spans of the geological past when it has actually been much warmer, with no polar ice; that the strandflat was "eroded by the sea" (page 19); and that a mechanism of great importance to the movement of the Antarctic ice-sheet is basal sliding (page

47), giving the unfortunate impression that it is peculiar to the Antarctic. The caption to a photo of northern Skye (page 32) describes it as "glacial terrain" but the main processes actually depicted are connected with mass movement; sheet-jointing in Yosemite (page 61) is attributed to temperature variations (no mention of pressure release); and the caption to a photo of Bodmin tors (page 60) gives the impression that frost was the major formative process. In all such statements there may well be a grain of truth, but brevity and sometimes an unfortunate choice of words can easily convey quite the wrong idea. The opening page (page 7) is distinctly journalistic ("We are all basically afraid of extreme cold and darkness"); and the inhabitants of the Alps or Scandinavia must be amused to read that "Something akin to panic is induced... every time there is a heavy snowfall".

There are seven chapters: the ice planet; ice environments; glaciers; frozen ground; ice afloat; plants, animals and ice; and Man in the World of ice. Some important subjects are given little mention: avalanches are dismissed in about 70 words; the section on plants is comparatively thin; and in the chapter on Man, there is virtually no mention of the economic importance and utilisation of the permafrost areas of Siberia, Alaska and Arctic Canada. But the overall impression of the book is undoubtedly attractive and it should find a ready market on the bookstalls.

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Immediacy and surprise

ASTRONOMERS are extremely fortunate members of the scientific community because they have an efficient public relations network. It may be an unwitting PR network — astronomers don't pay for it anyway — but the media do seem to be on their side. Two things are greatly in the subject's favour. First is the immediacy. The results and images from a spaceprobe passing Jupiter, for example, are transmitted and processed with great speed. The time lag between observation and announcement is short. Second is the element of surprise. Time and again the astronomers find things they did not expect. Jupiter and its satellites again furnish two examples. It would have been a brave astronomer who firmly predicted the existence of active volcanoes on Io or a ring around the planet. Pioneer found both. New things seem to crop up wherever the astronomer looks and nothing seemingly interests the media more than novelty

coupled with those looks of amazement on the faces of scientists when confronted with something unexpected. Two consequences result: the number of people interested in the subject continues to increase, and astronomy books seem to date quickly, providing ample room and justification for new works and editions.

This year, as in previous years, I am confronted with a large pile of new books and I am again trying to answer the question "Which book would you, young astronomer, old astronomer, amateur or professional, like to find in your stocking on Christmas morning?" The choice is enormous and the answer is far from easy. One which I am sure will go down very well is *The Guinness Book of Astronomy Facts and Feats* (Guinness Superlatives: Enfield, UK; £6.95), compiled by Patrick Moore. It is the quiz fanatics' dream, a fund of answers to questions you probably would not have asked yourself in the first place. Every dip I made into the book produced something of interest and humour. Who would have thought that Le Monnier observed Uranus eight times in four weeks and failed to identify it as a planet, or that

one of his observations was later found scrawled on a paper bag which had once contained hair perfume; that the longest living sunspot group lasted for 200 days; that Halley's comet was excommunicated in 1456; that the smallest known galaxy is only 1,000 light years across; that a piece of the Barwell meteorite was found nestling in a vase of artificial flowers on the windowsill of a house in the village? The book is full of them; you can imagine the advertisement, "astound your friends", "impress your colleagues" — but it's all good fun and excellent value. The facts and feats are listed in sections, a random few being Sun, Moon, Jupiter, double stars and galaxies, so they are easily accessible. Eighty-seven pages are taken up by a star catalogue which struck me as being somewhat out of place. The star maps in this catalogue were too small, had no right ascension or declination grid and the bright stars in each constellation were joined in a most unusual, idiosyncratic fashion. And I am sure that 10^{-8} cm as the definition of an Angstrom unit is easier to comprehend than "one hundred millionth part of a centimetre." Anyway, these are all minor quibbles. I know few astronomers who would not be delighted to receive a copy.

The same can be said of the next book, *Space Art* compiled and written by Ron Miller (Starlog Magazine, O'Quinn Studios: New York; paperback \$7.95, slipcase delux \$12). We are treated to a multitude of colour plates of astronomical and space science subjects realised by a host of artists. The book continually underlines the usefulness of space art. These paintings synthesise scientific knowledge and data into a visual and concrete form. Flesh is put on to the bones of numbers, equations and theoretical predications. Whenever a new phenomenon or discovery comes to light it is the space artist who asks the question, "What would it actually look like to the human eye if you could stand there and see it?". Ron Miller traces the evolution of this art-form from its infancy in 1865, when *From the Earth to the Moon* and *A Trip Around the Moon* by Jules Verne, contained illustrations created by the artist painting for the first time strictly according to scientific fact, through to the present day, where we benefit greatly from such organisations as the NASA Fine Arts Programme. NASA decided that, despite filmed documentation of all their projects, art would give their work a special emotional impact and significance. Miller goes as far as to propose that it was the space art in the popular illustrated magazines and books of the early 1950s that helped rally the taxpayers behind the space programme. Well of course, this is debatable, but the worth of the present book is beyond dispute. It is excellent value for money, a continual feast for the eye and the imagination and an ideal gift.

Let us now turn to two books for the observer. The Mittons, Jacqueline and Simon, have produced a *Star Atlas*