

## Picture the planets

Michael H. Carr

**Planetary Landscapes.** By R. Greeley. Allen & Unwin: 1985. Pp. 257. \$44.95, £24.95.

DURING the past 20 years spacecraft have been sent far and wide on exploratory missions throughout the Solar System; among the planets, only Neptune and Pluto have so far escaped close inspection. The result has been an explosive growth in our knowledge of what the various bodies of the Solar System are like, and how they evolved to their present state. This burst of scientific activity is now being reflected in the appearance of a stream of books. The knowledge is so new, the subject so large and the potential readership so broad, however, that there is as yet little overlap between the successive publications.

*Planetary Landscapes* concentrates almost exclusively on the surface morphology of the solid planets and moons, dealing primarily with Mercury, Venus, Mars, the Earth's moon, and the moons of Jupiter and Saturn. The book describes the physiography of these bodies and discusses briefly the clues that their surface morphology provide about the nature and timing of the various processes that have operated on each of them to produce the different configurations we see.

Ronald Greeley, who has participated in the planning and execution of several planetary missions, and who has done research on the effects of impact, volcanism and wind on different planetary surfaces, is well qualified to write a book such as this. In his two introductory chapters, he describes the history of our exploration of the Solar System and some of the techniques used in planetary geology, particularly digital image processing. As in most chapters, the story is told mainly through illustrations and tables. There then follows a chapter which discusses the four principal types of process that affect the morphology of a planet's surface: impact, tectonics, volcanism and gradation. The rest of the book is a tour of the various planets and moons, most chapters being organized around a descriptive section and a discussion of the extent to which each of the four types of process have operated on the body being considered. The approach is qualitative, narrowly focused on the information embedded in the landscape, and the text is only lightly referenced; as the author says in the preface, the references are not meant to be exhaustive but rather to provide a springboard to further reading. In this regard the tables of special journal issues and NASA publications on the planets are particularly useful.

The main strength of the book is its illustrations, over 250 of them. Some 80% of these are spacecraft images, the rest being maps, diagrams and pictures of geological features of the Earth that have some particular planetary significance. I know of no other publication that provides such a rich collection of planetary photographs; there is hardly a page without an illustration, and many cover almost the entire 11" × 8½" format. The figures are well captioned and well annotated, the spacecraft images are identified by number and information is provided on how copies might be obtained.

If I do have a quibble, it is that the

quality of reproduction is somewhat disappointing, but this is a minor criticism given the many spectacular views that are presented. The text, however, is rather basic, and seems to be intended neither for the professional nor for the casual reader; rather the book appears to be designed as an illustrated account for the serious layperson or as an introductory text on planetary geology. I anticipate that it will be used widely in both of these roles. □

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## Mapping decline

Peter J. Smith

**Down to Earth: One Hundred and Fifty Years of the British Geological Survey.** By H.E. Wilson. Scottish Academic Press: 1985. Pp. 189. Pbk £9.50.

UNSUSPECTING readers who, seeing no further than the subtitle, imagine this to be an official, rigorous or even entirely serious history of the British Geological Survey's first century and a half will be sadly disappointed. Suspecting members of the geological community who have heard rumours to the effect that the book is one long string of saucily amusing anecdotes will be no less disappointed. As far as the (really rather few) scurrilous stories are concerned, Wilson comes over for the most part as the Alexei Sayle of geology, a purveyor of comedy with the funny bits left out. Much more interesting is his self-ennoblement as Lord Gnome of Keyworth. Tales of BGS geologists relieving themselves against trees are far less important than the inside story of how government and the Natural Environment Research Council have relieved the Survey of its vitality.

Each of Wilson's 18 chapters takes an insider's look at a particular aspect of the Survey's work, generally from a historical perspective but with comparatively short shrift being given to the first 110 years. Indeed, it soon becomes clear that Wilson's chief concern is the spectacular rise and fall of the BGS during the postwar period. Before 1939 the Survey was almost entirely a geological mapping agency, albeit one often in the charge of megalomaniac Directors more interested in self-advancement than the industrial needs of the nation. As government interest in science grew, however, the organization changed in both character and size as it absorbed new techniques, adopted new goals, and appointed new people unhindered by a century of tradition.

Wilson has done one of his finest jobs in

delineating the myriad organizational changes that this postwar expansion apparently necessitated. The extent of the formation, growth, transmutation, decline and demise of groups, units, departments, divisions, bureaux, branches and teams over the past 20 years has been truly bewildering. It would be comforting to see it all as the mark of a vigorous organization perpetually regrouping to meet the demands of an advancing industrial civilization; unfortunately, whilst that may be what it seemed like at the time, it is all too easy in retrospect to view the furious reorganization as a communal fit induced by a ruling establishment chronically unable to decide what to do for the best.

In fact, as Wilson so ably explains, the government decided what to do for the worst, imposed the Rothschild principle in 1972, and thus set the BGS on the road to ruin. By the late 1970s the Survey had become so far removed from its basic function that it was relying on vulnerable short-term contracts for 80 per cent of its budget and was a constituent part of a research council that, dominated by members of a different discipline, all too clearly had little expertise, and even less interest, in the Earth sciences. When the public spending cuts came, the recipe for disaster was complete. The contractor departments of government reneged on many of their commitments and brought the BGS to crisis.

I cannot help feeling that the crisis might have been rather less acute if only the BGS had done much more in the past to gain friends by explaining what it has been about. *Down to Earth* can be regarded as a belated attempt to do just that, for in the course of explaining the Survey's problems it also provides a wealth of information on past and present activity, both in Britain and elsewhere. Whether its irreverent tone will endear it to those who are supposed to be looking after the organization's interests is quite another matter. □

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