

chapter on computerized image analysis? I cannot think of any group of readers to whom I could recommend this book.

J. F. W. BOWLES

Rode (O. D.), Ivanov (A. V.), Nazarov (M. A.), Cimbálníková (A.), Jurek (K.), and Hejl (V.). *Atlas of Photomicrographs of the Surface Structures of Lunar Regolith Particles*. Dordrecht, Boston, and London (D. Reidel), 1979. 76 pp., 82 pls. Price \$39.00 Dfl. 80.00.

This atlas contains 164 SEM photomicrographs of regolith particles from the Luna 16 and 20 missions. The text is in Russian (35 pages) and English (30 pages), followed by 3 pages of references, to 1975, with one Russian reference dated 1979. Each plate has an explanatory caption. No chemical data are given though the photographs are classified by subject into rocks, glasses, olivines, and plagioclases. The range in magnification used is from  $40\,000\times$  to  $48\times$  with the majority at about  $1000\times$ . The photographs are of reasonable quality and show a variety of surface features. Their appeal, and that of the book, is likely to be limited to those with a particular interest in grain morphology on a fine scale.

A. L. GRAHAM

Arcyana [Cheminée (J.-L.), Hekinian (R.), Le Pichon (X.), Choukroune (P.), Francheteau (J.), Bellaiche (G.), and Needham (D.)] *FAMOUS: Photographic Atlas of the Mid-Atlantic Ridge; rift and transform faults at 3000 meters depth*. Paris (Gauthier-Villars/CNEXO), 1979. 128 pp., 425 photos, 3 folding maps. Price 150 FF.

FAMOUS (French American Mid-Ocean Undersea Survey) was a scientific expedition of great achievement. By the early nineteen-seventies it was generally accepted that the mid-ocean ridge systems of the world played a crucial role in geodynamics, as the sites of the spreading axes where lithospheric plates were formed and separated. Nevertheless, this concept was vague in detail. It relied entirely upon bathymetric maps and several lines of geophysical evidence, because no part of the typical ridge axis is exposed subaerially. FAMOUS took the first step in resolving this problem during 1973 and 1974, by making a very detailed survey of the section of the Rift Valley of the Mid-Atlantic Ridge between  $36^{\circ} 30'$  and  $37^{\circ} 00'$  N, at a water depth of between 2500 and 3000 m. In addition to geophysical studies (a phase which included UK participation), the area was criss-crossed by three miniature submarines packed with volcano-

logists and petrologists. This atlas includes a selection of 430 photographs from the thousands taken. It is restricted to the data obtained by the French crews of the vessels *Archimède* and *Cyana*.

The atlas appears to have three distinct objectives: (1) to provide a complete record of the field geology of the area, as an essential background for anyone reading the numerous detailed published studies; (2) to contribute towards our knowledge of volcanology and tectonics; (3) to give a general account of the achievements of FAMOUS, suitable for a wide scientific readership (including the sponsors of the work). There are duplicate texts throughout in French and English. These are printed side-by-side, which is a great advantage because the minor abbreviation of the English text and occasional slight hiccups in the translation may be corrected at once by reference to the French original.

The introductory chapter of the volume is an excellent general account of the geology of the area. A series of detailed bathymetric maps and photos of a scale-model enable the reader to obtain a vivid over-all impression of the topography. This includes a segment of the Mid-Atlantic Ridge rift valley, a transform-fault fracture zone, and the complex area where they join. The plates are grouped to illustrate these three distinctive areas, including the hydrothermal deposits in the fracture zone. Each page of photographs is accompanied by a table of technical data and a locality map, so that every view can be related precisely to the area as a whole. With few exceptions the photographs are sharp and have printed clearly. Each group is accompanied by a descriptive geological text and a note on any interesting life forms.

The photographs which are probably the most successful from a geological point of view are those showing the diverse forms of basalt extruded on to the ocean floor. These offer immense possibilities for improving our understanding of ancient pillow lavas and their related deposits. The terminology erected by the authors for these extraordinary eruptive forms is robustly Gallic. Thus phalli are pictured inflated and collapsed—with and without warts. Both are carefully distinguished from coliform lavas, which the English text transliterates from the French as 'tripe-like'. (A visitor to France might be well advised to remember this before ordering a dish of tripe and onions!)

Some of the photographs of structural features in both the rift valley and the fracture zone are spectacular and easy to understand. Nevertheless, many of these pictures suffer from the same problem as besets innumerable published photographs of field features; namely that the interpretation which appeared so obvious to the photographer is far less