discussion integrating all these lines of knowledge into a paleoceanographic history of the ocean basins.

Criticisms are largely of second-order importance. Kennett tends to rely on last-big-synthesis articles as source references rather than on the papers that made the original breakthroughs. In many cases, he writes most clearly when the subject matter is more distant from his research specialties. Closer to his own interests, the style at times tends toward long descriptive narratives that can be difficult to follow. One flaw is more significant: for a book focused on paleoceanography, the climatological treatment of modern oceanography is too thin. Missing is some important material, much of it recent, on regional transport and air-sea exchange of heat. This kind of base-line understanding of the modern climate system is of fundamental importance to a book so heavily devoted to climatic interpretations of Cenozoic oceanographic phenomena. Similarly, there is more room for base-line treatment of recent developments in plankton ecology and particle flux, particularly the results from sediment traps, multiple tows, and large-volume filtration.

This material could be added to a second edition at the expense of the occasionally excessive amount of geotectonic classifying and categorizing (especially of continental margin types) and arguably superfluous nomenclature ("megasutures," "offscraping," "ecospace"). Fundamentally, however, this is an authoritative work from a scientist obviously committed to the final product. Congratulations to Kennett.

WILLIAM F. RUDDIMAN
National Science Foundation, Washington, D.C. 20550

Continental Margins

Dynamics of Passive Margins. R. A. SCRUTTON, Ed. American Geophysical Union, Washington, D.C., and Geological Society of America, Boulder, Colo., 1982. vi, 200 pp., illus. $15. Geodynamics Series, vol. 6.

Dynamics of Passive Margins is the final report of one of the ten groups through which the work of the decade-long geodynamics project (jointly sponsored by the International Union of Geological Sciences and the International Union of Geodesy and Geophysics) was organized between 1970 and 1980. This group dealt with the origin, evolution, and structural state of Atlantic-type continental margins, those formed by the breakup of larger bodies such as Gondwana and Laurasia.

I can think of at least three other books devoted, or mainly devoted, to the evolution of Atlantic-type margins that have appeared in the last few years. However, the editor of this one has avoided duplication by emphasizing some aspects that have not been widely discussed in the other books. For example, very different papers by Kosminskaya on Soviet geophysical studies in the Arctic and North Atlantic and Sweeney on studies of the Canadian Arctic margin emphasize that data acquisition is still the dominant problem in Arctic ocean geology. In the face of admittedly slender data, Sweeney opts for an origin of the Canada basin by rotation of the north slope of Alaska (and I would ask, perhaps the Chukotsk and the New Siberian block also?) about a pole near the MacKenzie delta during the early Cretaceous. Suturing of an earlier ocean he attributes to mid-Paleozoic collision between part of Siberia and North America roughly along the line of the coast of the Arctic Islands. These two suggestions fit well with the data in Sweeney's regional geophysical maps and five sections across the Arctic margin and provide a coherent working hypothesis for Arctic evolution.

Keen reviews eastern Canada, again with five sections across the margin, and considers thermal subsidence using data from eight oil wells. She points out that, although we are becoming skilled at modeling the thermal behavior of Atlantic-type margins (at least five practitioners of this skill contribute to the report), we do not yet deal well with early rifting phases. She also pleads for more studies of conjugate margins and of ancient Atlantic margins exposed in mountain belts. Long and Lowell address the slow subsidence of continental fragments isolated near Atlantic margins and find that they are able to model it simply in terms of the greater heat generation of the continental material.

The evolution of the margins of northern Europe, eastern Greenland, Australia, and East and West Africa are all well reviewed with good summary maps and cross sections. Dingle, in discussing Africa, finds that a mid-Cretaceous change from rift to broader basin subsidence (commonly called the steer's head relationship) is universal and finds in this support for Kent's remarkable suggestion of a "fundamental rheological modification of the crustal rocks" at this time. Sloss also argues for episodicity because he finds that rapid subsidence in intracontinental basins tends to coincide with marginal rapid subsidence. He invokes a process of subcontinental melting and uplift (which reminds me of Krenkel's ideas of 60 years ago) alternating with outflow of material from beneath the continents to cause regional subsidence. Alternations of the two processes produced 10^8-year cycles during the older Paleozoic.

Turcotte considers the state of stress at Atlantic margins, pointing out that elevation and density contrasts are sufficient to maintain substantial stresses even on old Atlantic margins. He suggests that this may account for a concentration of volcanoes at these margins, which is not as obvious to me as it is to him.

Bott considers the origin and distribution of stress on Atlantic margins and in the preceding rift state. The latter he regards as harder to interpret, but he suggests that the suction force exerted on an overriding plate during peripheral subduction may have been important in leading to the breakup of Pangea.

Scrutton provides a review of the decade's achievements. Most notable has been success in understanding subsidence generated by the processes of sediment loading and cooling at the margins. Scrutton also contributes a paper on strike-slip boundaries, a topic he has made his own.

The publishers and the authors have produced for $15 a hardbound, informative summary of our present state of knowledge that will prove useful in addressing the next decade's main problem, which I see as an understanding of along-strike variations at Atlantic margins.

KEVIN BURKE
Lunar and Planetary Institute, Houston, Texas 77058

Books Received

Ability Testing. Uses, Consequences, and Controversies. Alexandra K. Wigdor and Wendell R. Garner, Eds. National Academy Press, Washington, D.C., 1982. Two volumes. Part 1, Report of the Committee. x, 242 pp. Paper, $13.95. Part 2, Documentation Section. x, 414 pp. Paper, $24.95.

Adaptive Radar in Remote Sensing. Dag T. Gjessing. Ann Arbor Science (Butterworth), Ann Arbor, Mich., 1981, xii, 154 pp., illus. $27.50.

Advances in Genetics. Vol. 21. E. W. Caspari, Ed. Academic Press, New York, 1982. viii, 374 pp., illus. $36.

Advances in Neuroendocrine Physiology. K. B. Ruf and G. Tolis, Eds. Karger, Basel, 1982. vi, 140 pp., illus. $58.75. Frontiers of Hormone Research, vol. 10.

Advances in Nutritional Research. Vol. 4. Harold H. Draper, Ed. Plenum, New York, 1982, xiv, 344 pp. $39.50.

Algorithms for Graphics and Image Processing. Theo Pavlidis. Computer Science Press, Rockville, Md., 1982. xviii, 416 pp., illus. $24.95.

The Alkaloids. Chemistry and Physiology. Vol. 20.

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