have all the charts gathered together into one bound volume.

The introductory section is profusely illustrated and generally well done. It includes informative discussions of lunar physics, the history of lunar cartography, mapping techniques, the lunar landscape, and techniques of lunar flight. The origin of many geologic surface features is discussed, and part of a geologic map is shown, but the description is confused by the inclusion of some rarely used Russian stratigraphic names.

The atlas is a fine reproduction of the earth-based lunar map series and is therefore very useful. It would have been even more useful if Apollo landing site maps had been included. The introductory background information is most interesting and well illustrated, although the section on geological interpretation could have benefited from a heavier editorial hand.

HAROLD MASURSKY
U.S. Geological Survey
Center of Astrogeology,
Flagstaff, Arizona

Environment and Evolution

Annual Review of Ecology and Systematics. Vol. 1. RICHARD F. JOHNSTON, PETER W. FRANK, and CHARLES D. MICHENER, Eds. Annual Reviews, Palo Alto, Calif., 1970. x, 406 pp., illus. $10.

It is a cliché that a systematist should also be an ecologist, or, conversely, that an ecologist should be also well versed in systematics. So it seems that the editors and the members of the editorial committee hardly need to justify their decision to publish this new series, the choice of its title, or the range of topics included in it.

In evaluating this first volume, one must remember two *raisons d'être* of review articles. The first is to enable researchers (and teachers) to absorb easily a vast amount of information that has not previously been organized in a logical fashion, or, if it has, that needs to be brought up to date. This sort of review is useful primarily in fast advancing fields, where, though the specialist is usually capable of glimpsing the forest, the generalist sees only the trees. Typically also this sort of review resembles a miniature textbook; in other words, it is rather dull but it ought to guide the uninitiated into an unfamiliar terrain by giving him numerous and unbiased bibliographical references. The second type of review is that which attempts to arrange a body of facts and ideas—be they few or many—around a novel theme in such a way as to open up vistas to specialists as well as to other workers. Typically this kind of review is less informative but more speculative, perhaps even boldly so, and makes good reading even if some of the hypotheses it contains may be only as lasting as sand castles.

Of the 15 papers in the book 7 fall in the first category and 5 in the second. Five of the "type 1" reviews should prove useful to their intended readers: Hull's impartial analysis of the dispute between the evolutionary, the phenetic, and the phylogenetic taxonomists; Crovello's guidelines to the study of character variation; Bourlière and Hadley's summary of the descriptive work being done on productivity of African savannas; Brown and Orians's methodical survey of the ways in which mobile animals space themselves out in relation to the availability of resources; and Clemens's overview of the mammalian lineages that appeared and diversified during the Mesozoic.

I found all five of the "type 2" essays thought-provoking, although they are uneven in freshness of outlook. Lewontin examines the levels at which natural selection acts (molecules, organelles, cells, gametes, individuals, and higher levels such as kin and population). He makes the point that selection may be at work in opposed ways at two or more levels, and emphasizes the correlation between purely ecological and genetical aspects of selection: little new here for the seasoned ecologist or systematist. Writing on pollination mechanisms in angiosperms, Stebbins is dogmatic in approach and sweeping in his conclusions, but he remains stimulating. He suggests several avenues for further studies, among them the significance of pollination of primitive angiosperms by beetles. To me, the most interesting papers of the book were those of Brock, of Enright, and of Harper, Lovell, and Moore. Brock's descriptions of high-temperature habitats cover some of the most intriguing aspects of these environments, including their origins, their evolutionary effects on living things, and the possibility that hot springs may be comparable to islands. In an original essay Enright tackles the problem of endogenous rhythms from an evolutionary angle in an effort to uncover the selective advantages of certain rhythms (circadian, tidal, lunar, annual) in ecological terms. Harper, Lovell, and Moore explore the variability in seed size and shape, then review the genetic basis for the observed patterns, before speculating on the possible adaptive properties of various seed sizes and shapes.

I wonder seriously whether the five papers not mentioned above ought to have been published at all (either they are not review papers, or they cover topics that needed no review, or they fail in their intended goals). Moreover, I believe that some of the other articles could more appropriately have been published in already existing, more general, journals and books that accept reviews, such as *Biological Reviews*, the *Quarterly Review of Biology*, *Advances in Ecological Research*, or *Evolutionary Biology*.

At this stage in the ecological and systematic game we possibly do need a medium for comprehensive reviews intended specifically for this joint audience. But for such a book to be really useful, the topics to be reviewed should be selected with utmost care to avoid duplication with material covered in other series, the manner of reviewing a given topic should be assessed before the author starts writing, and the articles retained for publication should meet a truly high standard. If future issues of *Annual Review of Ecology and Systematics* have fewer pages but a proportionately greater amount of worthwhile material than the first, then researchers in ecology and systematics might have at their disposal a valuable *instrument de travail.*

FRANÇOIS VUILLEUMIER
Biology Department, University of Massachusetts, Boston

Evaporites

Salt Deposits. Their Origin and Composition. O. BRAITSCH. Translated from the German edition (1962) by P. J. Burek and A. E. M. Nairn, in consultation with A. G. Herrmann and R. Evans. Springer-Verlag, New York, 1971. xiv, 300 pp., illus. $19.80. Minerals, Rocks and Inorganic Materials, vol. 4.

When Braitsch published his monograph in Germany in 1962, I was delighted to find it to be a lively, personal, and surprisingly open-minded treatment of marine evaporites. Since