

importance of statistical concepts in physics. Schrödinger referred to Boltzmann's ideas as "my first love in science," and wrote some 30 or 40 papers in statistical mechanics in the course of his career. Scott manages to refer to most of these papers, giving a definite impression of the range of Schrödinger's interests in this field. I think, however, he might have done better to analyze a few of them at enough length to demonstrate Schrödinger's way of handling a problem or developing an idea. Scott is not at his best in treating historical questions. His discussion of the development of wave mechanics is only a chronicle, in which one paper after another is described briefly. He does not convey much sense of just what problems these papers were written to solve, or why Schrödinger's contemporaries should have found them exciting or puzzling or disturbing.

When Scott turns to an analysis of Schrödinger's views on the interpretation of quantum mechanics he has more to contribute. He tries to disentangle the essentials of Schrödinger's position from some of the more extreme and inadequately qualified statements that Schrödinger sometimes made in semi-popular articles. Scott traces Schrödinger's criticisms of the theory over a period of 20 years or more. He gives

a very fair analysis of those points where Schrödinger was refuted by Born and Heisenberg, who were spokesmen for the viewpoint of the overwhelming majority of theorists, and those points that are still unresolved. No attempt is made to deal with most of the large literature on these problems.

Schrödinger had a lifelong interest in philosophy but, as Scott remarks, "his writings reveal relatively few *formal* points of contact between physics and philosophy; . . . the principal connection is in the person of Schrödinger himself." Scott provides a physicist's introduction to those brilliant but tantalizing little books in which Schrödinger touched on a great variety of issues, from the nature of life to the Greek presuppositions of science, offering insight, challenge, and sometimes mystification.

Scott has succeeded in providing a useful introduction to some of Schrödinger's main concerns. Let us join him in hoping that someone will now go further and give us a full-length picture of Schrödinger, that "glittering, many-sided man," in a style incisive and vigorous enough to match Schrödinger's own.

MARTIN J. KLEIN

*Department of the History of Science  
and Medicine, Yale University,  
New Haven, Connecticut*

## Quantifiable Data for Anthropology

**Ethnographic Atlas.** GEORGE PETER MURDOCK. University of Pittsburgh Press, Pittsburgh, Pa., 1967. vi + 128 pp. \$4.95.

This is an atlas without a single map. But the 862 societies of concern—tribes and ethnic groups—are listed according to precise geographical location. Murdock is well known for his pioneering in the problems of comparative cross-cultural research. At Yale he organized the Human Relations Area Files, a summary codification of the content of human cultures across the world, and at Pittsburgh he founded the journal *Ethnology*, in which sections of the data brought together in this atlas have appeared.

The purpose of the atlas is to provide a summary overview of societies for which detailed ethnographic descriptions exist. The materials are coded so that the anthropologist interested in cross-cultural comparison can obtain a quick insight into the kinds of clustering of institutions which the various

societies listed exhibit. Murdock considers both the individual societies themselves and the general area to which each belongs, a necessary safeguard since there may be contact or diffusion of cultural elements among societies placed closely together. Murdock divides the world into 412 culture areas, or cultural clusters, seeking thereby to encompass the entire ethnographic universe. The various societies are listed according to cluster and then summarized both as to location and cultural content. Coded tables relating to the content of the various societies make up most of the volume.

To illustrate the kind of data which the atlas contains, one may select a fairly familiar people, the Navaho of the southwestern United States. They, like each of the other groups summarized, are assigned a code number and a coded location. There follows a series of topical columns covering a wide range of data about the group. Topics

considered include, among others, subsistence, type of family and social structure, patterns of authority and politics, inheritance, linguistic affiliation, settlement and demographic pattern, games, and house type. Thus for the Navaho it may be noted that they possess a modified dependence on gathering, give some attention to hunting, none to fishing, a fair amount to agriculture and to sheep raising. The codes show a small and extended family, with strong emphasis on the matrilineal clan, and preferential matrilineal cross-cousin marriage. They practice no genital mutilations, do not segregate their males, lack a belief in a high god, have an uncomplex but well-defined political structure. Add to this considerations of Navaho material culture, with such occupations as weaving and basket-making, not to mention a complex house type, and it may be clear that Murdock has succeeded in bringing a great deal of material together. Nor can the atlas be regarded as complete; additional categories can yet be appended. To find data on a particular society means, it is true, a rather unhandy riffling back and forth to see what the column numbers and codes mean, but it is evident that no other arrangement would permit the compression of such extensive information into so little space.

Considerable research is now being done in anthropology that involves the testing of cross-cultural hypotheses with the use of quantifiable data. In the Human Relations Area Files and in this atlas there is a ready source of materials susceptible of statistical review and computer analysis. For such endeavors the atlas may prove most useful, and one must compliment Murdock on the prodigious amount of work he has done in assembling this vast body of data.

Comparison of human behavior has always been implicit in cultural anthropology and ethnology. Murdock in this regard offers a refined approach. Yet there is a dimension which his scheme must inevitably miss, since it must limit itself to formal structure and content. The imposition of categories can be misleading; "matrilineal institutions," for example, overtly similar, may function quite differently in different social systems. Treatment of form and content alone reveal little of the depth or intensity of institutions among different groups of men.

ROBERT F. SPENCER

*Department of Anthropology,  
University of Minnesota, Minneapolis*