ulators, and ineffective political parties. But if democracy has produced disappointments, so have socialism and communism. One cannot avoid parallelisms between Southeast Asia and Latin America.

Indicating the author's opinions would be as unfair as telling the ending of a detective story. Butwell would challenge the reader to weigh the evidence and to formulate his own opinion. It will be difficult to disagree with the fundamental propositions that any *ism* —capitalism, socialism, or communism —will have to improve the lot of the common people, if it is to ride the wave of the future, and that "Southeast Asia needs good leadership and outside help and understanding."

CLAUDE A. BUSS
Department of History,
Stanford University

Northern Pioneer Fringe

Norway North of 65. Ørnulv Vorren, Ed. Oslo University Press, Oslo, Norway; Allen and Unwin, London, 1961. 271 pp. Illus. $5.50.

Northern Norway is the most accessible of all the high-latitude lands. Tourists crowd it in summer, and freighters and passenger vessels call at its ports throughout the year. Yet the area discussed in this book has a southerly limit in the latitude of Fairbanks, Canada's Great Bear Lake, Godthaab in Greenland, and Archangel. The northern limit is in line with Point Barrow, and the ice-filled fjord at Scoresbysund in eastern Greenland.

Within Norway's three counties that lie north of the 65th parallel there are about 400,000 residents, scattered over an area 500 miles from west to east and 450 from south to north. It is rarely realized that the most easterly town, Kirkenes, is due north of Cairo, Egypt.

Little of this region is truly "arctic"; much is not even subarctic. Winters in the Lofoten Islands are about as severe as those of Greece; summers in interior Finnmark can be uncomfortably hot. Northern Norway is, of course, a meeting place of oceanic and continental influences. These are not only climatic but also economic and social. From the sea have come traders and settlers—Norwegians, Danes, Scots, Russians, and others—while from the interior have come Finns and Lapps, usually fishermen and reindeer herders. Today northern Norway has for neighbors Sweden, Finland, and the Soviet Union, while off its coast are the fishing fleets of many other nations.

In terms of military strategy, this northwestern peninsula of Europe has long been significant. From it, during World War II, Nazi bombers harassed convoys as they ran for Murmansk, just south of the arctic ice pack. It still guards the main warm-water route to the Soviet Union.

The area has long been well served scientifically by the Tromsø Museum, whose staff is largely responsible for this compact handbook on all aspects—physical, social, and economic—of the three counties of Nordland, Troms, and Finnmark. The 16 chapters are well written, and there is a notable lack of the overlapping that might be expected in a work by 15 authors. There is some variety of style, and possibly of purpose. Thus, the chapter on vegetation and flora is moderately technical, while that on climate is a model of scientific writing aimed at the general reader.

Poul Simonson's contribution, "The history of settlement," is particularly valuable because it includes material revealed by field work done in the past 15 years. Two chapters—"Lapp settlement and population" and "The reindeer industry"—when taken together provide the best available study in English of the contemporary Lapp. The most important industry in northern Norway is fishing, but it is passing through difficult times. War-time destruction of ports and the fishing fleet, the incursion into coastal waters of foreign trawlers, and the unwillingness, or the inability, of the small operator to modernize his equipment and methods face the government with problems that have not yet been solved.

The most prosperous settlements are those related to mining. Three are outstanding: Mo i Rana, in the south, where there is a modern steel plant; Narvik, which owes its very existence to the export of Swedish iron ore from Kiruna; and Kirkenes, in the far northeast, which is a center for mining and concentrating taconite iron ore. Postwar geological surveys suggest the possibility of expanding copper mining in the area, and hydroelectric resources in some locations might permit establishment of still more prosperous communities.

The Soviet-Norwegian border along the Pasvik River is one spot where the Iron Curtain is not a scene of continuous friction. On the contrary. A Norwegian engineering syndicate is, at the moment, established on the Soviet side of the frontier, while it constructs a power station that will form part of a joint Norwegian-Soviet development of the whole length of the river. Finland is also involved in the operation.

Norway North of 65 is a timely volume, well-planned, interestingly written, and a model for similar volumes that are needed concerning other sectors of the northern pioneer fringe.

TREVOR LLOYD
Department of Geography,
McGill University, Montreal, Canada

"Innate" and "Learned"

Roots of Behavior. Genetics, instinct, and socialization in animal behavior. Eugene L. Bliss, Ed. Harper, New York, 1962. xi + 339 pp. Illus. $16.

This book contains a collection of papers presented at a 1959 symposium sponsored by the research committee of the American Psychiatric Association and held at the AAAS annual meeting in Chicago. The editor writes in the preface that he was given the responsibility of arranging a symposium on some currently important topic and "elected to organize a meeting devoted to animal behavior, not because the ultimate answers to man's behavior were evident in contemporary work in this field, but because the area offered *new techniques* to study the problems of behavior."

There are 31 contributing authors and 23 chapters grouped under four major headings. Part 1, containing six chapters, deals with the genetics of behavior; part 2, with nine chapters, is entitled "Instinctual behavior"; part 3, with four chapters, covers early experience; and part 4, four chapters, takes up social behavior.

The list of authors is impressive. Five are associated with the American Museum of Natural History, and at least five others are, or have been, with the Roscoe B. Jackson Memorial Laboratory. Most of the remainder classify themselves as psychologists and zoologists. Two psychiatrists and two anatomists are included; two others are currently with the United States Public Health Service.

The book is in double-column format, and its chapters, or reports, range from 4 to 27 pages in length. As might be expected in a symposium of this sort,

the contributors seem to have had different ideas about what was expected of them. In addition to varying in length, some chapters cite many references, while one gives none at all. Some have no table or figure; others contain numerous tables or figures, or both. In some cases the material discussed covers only the research of the contributing author. In others the approach to the topic is broader and takes up the work of other investigators.

The activities of more than 50 animals are dealt with. Birds (bullfinch, chicken, duck, dove, goose, parrot, pheasant, pigeon, quail, and song sparrow) and insects (blowfly, caterpillar, cockroach, cricket, dragonfly, *Drosophila,* grasshopper, moth, praying mantis) appear to lead the list. Fishes, ungulates, and several of the rodents and primates are also discussed. Applications to human behavior are made in a number of instances, as in Scott's treatment of social disorganization and war (chapter 11) and in Davis's discussion of human gangs (chapter 23).

The book as a whole may be considered as a study of the influence of heredity and environment upon behavior. Genetic factors are emphasized in the differences between strains or races and between individuals of a species. A great deal of the work, on the other hand, shows how environmental and hormonal manipulations can alter such fundamental activities as sex behavior, maternal behavior, and infant dependence upon the mother. The influence of infantile experiences in imprinting, and in special experimental environments during upbringing, are also covered. Most of the research discussed is experimental, although some naturalistic observations are included. The overall approach is illustrated by a quotation from W. D. Digler, in chapter 3.

"Psychologists have generally been concerned with learned behavior," he writes, "and have neglected the so-called 'innate' elements. Ethologists on the other hand, have traditionally been primarily concerned with 'innate' elements of behavior. The former's interests no doubt have been shaped largely by a primary concern for the behavior of humans, which is felt to be largely learned. On the other hand, ethologists, being zoologists, have been struck by the apparent relative simplicity and rigidity of many behaviors which in these respects resembled structure. It has taken time for some psychologists to realize that innate elements commonly underlie learned behavior and for ethologists to recognize that many of these simple, rigid behaviors are wholly or partly the result of learning. Now there is an ever increasing tendency for psychologists and ethologists to cooperate in their investigations."

In a volume sponsored by the American Psychiatric Association and edited by a psychiatrist, it is interesting to note that Sigmund Freud is cited only twice, and Karen Horney once. The names mentioned most frequently—not including those of the contributing authors—are those of F. A. Beach, E. Clark, and C. S. Hall.

The volume is an excellent example of the mechanics of bookmaking, and it was undoubtedly expensive to produce. However, considering its length of 339 pages, it is certainly overpriced.

WINTHROP N. KELLOGG
Department of Psychology,
Florida State University

Mathematics, Physical Sciences, and Engineering

Lack of Communication

Recent Developments in the Theory of Connections and Holonomy Groups. Katsumi Nomizu. Fasc. 1, pp. 1–49 of *Advances in Mathematics*, vol. 1. Herbert Busemann, Ed. Academic Press, New York, 1962. 102 pp. $3.

The publication of this new series, "Advances in Mathematics," is motivated by the difficulty that mathematicians encounter in communicating with each other. Specialized fields have grown so rapidly that even an active research worker can know only a few of them in depth. Workers in these fields tend to write only for each other, and so it is difficult, if not impossible, for a mathematician to understand or appreciate what his colleague in the office next door is doing. The purpose of this series of monographs is to present the principal ideas in a variety of recent mathematical developments in a form that can be understood by the generally well-educated mathematical public. As such, its appearance is a most welcome event.

The first fascicle, by Nomizu, is an account of an important direction of research in differential geometry, which has occurred in the last decade. Although the author overstates his case when he says this material is "the source of all that is interesting in contemporary differential geometry," certainly no one can be competent in the field without a knowledge of what is in this article.

Connections made their first appearance as the Christoffel symbols of Riemannian geometry; they were then generalized in various directions with the hope that they would provide suitable machinery for a unified field theory. The unification of these divergent trends into a general theory of connections was first accomplished by Ehresmann in 1950, and this article is an account of developments growing out of his work.

The fundamental notions are those of a differentiable manifold M and a fiber bundle with base space M. Then it is possible to define a connection in a fiber bundle, to define its curvature form, and to discuss the several holonomy groups associated with it. For these definitions the reader must be referred to the article itself. As important cases Nomizu then treats the properties of linear, Riemannian, and Kählerian connections.