

# Book Reviews

## Nomadic Populations of the Sahara

**Nomades et Nomadisme au Sahara.** Recherches sur la Zone Aride, vol. 19. UNESCO, Paris, 1963 (order from UNESCO Publications Center, New York). 195 pp. Illus. Maps. \$3.

This valuable but slightly disconcerting book deals with nomads and nomadism, in the Algerian Sahara and western Libya, in conflict with modern European culture. Although it is presented as the collective work of ten French authors, the volume is in fact a collection of separate studies thrown together with very little editorial coordination or revision. Consequently it is sometimes confused and occasionally repetitious. The editor-in-chief, although nowhere designated specifically, appears to have been Claude Bataillon (of the Lycée Moulay Abdallah of Casablanca), but he should not be held entirely responsible. Indeed, he makes it clear that the various contributions were written hastily and then had to be cut extensively and reshuffled to fit a rigid space requirement. Brevity is a precious thing indeed, but here it was pushed far beyond the point of diminishing returns. The illustrations are good but so few as to be almost useless; the glossary is incomplete; the best source book on the Ahaggar Tuareg, by Benhazera (1908), is an unpardonable omission from the bibliography, and it is only one. Internal evidence suggests that the text was finished early in 1961, for some of the authors seem to have taken it for granted that France would retain administrative control over the Algerian Sahara more or less indefinitely.

The book gets off to a weak start with a somewhat fumbling discussion of nomadic tribal structure, values and attitudes, and external relations. The usual confusion in the use of the term *tribu* crops up once more, the nature of tribal confederations is not made at

all clear, and the former importance of raiding as a communal activity is overlooked. The basic nature of nomadic chieftainship is badly misinterpreted, for permanent administrative chiefs were rarely war chiefs as well. Contrary to what the author says, trans-Saharan trade used to be heavier across the central Sahara than in the West (Bovill, 1933 and 1958); pilgrimage to Mecca was more usual a century and a half ago than it is even today (Lyon, 1821, and others); the revolt of the Tuareg in 1917 was primarily a political reaction against interlopers and only accidentally a religious attack on infidels (Rodd, 1926, and others).

But things get better as one goes along. The broad lines of social structures and marriage customs are well treated on the whole, although the widespread preference for paternal parallel cousin marriage is not brought out. And once again there is an echo of the antiquated belief that consanguineous marriage is biologically dangerous.

However, the most important single factor in Saharan nomad social structure, the universal tendency to social, political, and economic agglutination around strong lineage cores, is duly emphasized. In discussing the nature of religious leadership, Bataillon brings out clearly the important fact that both inherited and individual prestige of personality usually outweigh all purely doctrinal considerations. The powerful organization of the Senoussi, who control Libya, is described clearly and succinctly. The almost equally powerful though far less spectacular Tidjani, of the Algerian Sahara, are not discussed, however, possibly because so very little is known about the exact nature and extent of their activities.

Chapters 4 of part 1, through chapter 4 of part 2, comprise a series of generally good regional studies, each

describing a major ethnic unit with which the author is thoroughly familiar personally. Emphasis throughout is placed mainly on the economic aspects of pastoral nomadism and on the vulnerability of the nomads to modern administrative and commercial encroachment. Sociopolitical structures are handled rather casually in consequence, although the overall pictures are adequate on the whole.

Bisson leads off by describing the Reguibat, northern Moors who lead a pastoral nomadic life of an extreme form. The region they inhabit is so barren that it contains almost no oases; tribal groupings are so fragmented that camp units are often reduced to the dimensions of a single joint family. And yet caravan trade with both Morocco and the western Sudan has long been a major element in traditional Reguibat economy.

Rognon follows with a description of the Tuareg, in which he shows how the combination of pastoral nomadism, caravan trade, and local relations with scattered settlements of sedentary agriculturalists made nomadic life possible in the mountains of the singularly barren Ahaggar (Hoggar) massif. The picture is incomplete, however. Seasonal migration southward into the western central Sudan is overlooked, as is the importance of resident Arab (Chaamba) shopkeepers. And the author (like so many others) seems unaware of the old marital relationships of some "noble" Tuareg families with maraboutic Arab families of the northern central desert.

Toupet, in dealing with the southern Moors of Mauretania, describes their clear-cut class structure in which warriors and holy men exercise absolute control. He also points out how tributary clans can change masters, and sometimes even social rank, so that, in effect, their positions remain fairly fluid within a very rigid general framework. Toupet does not mention, however, the extreme violence that characterizes these people, among whom assassination was often the main means of access to chieftainship until very recently. But on the other hand, he is the only contributor to remark on the very old fluctuating tendency of Saharan nomads in general to drift gradually southward, towards and into the savannah country of the Sudanic *sahel*.

Next, Capot-Rey describes the Touhou (Teda and Daza) of the southeastern central desert. As always, his deceptively easy mastery and pleasant,

flowing style add charm to the value of an outstanding contribution. The extreme fragmentation and quasi-anarchy of Toubou culture are explained clearly and briefly. The overall pattern is shown to be "molecular," with no clear hierarchy of clans, no religious aristocracy, and no hereditary chief or even strong ones, as a rule, above the level of the extended family. The general tendency to operate relatively small caravans regularly over enormous distances, while still maintaining attachment to wretched little sedentary bases, is discussed and shown to be much more developed among the Teda of the Tibesti massif than among the Daza of the lowlands farther south, where life is easier and nomadism consequently more restrained.

Four excellent chapters by Cauneille, Bataillon, Sarel-Sternberg, and Rovillois-Brigol describe, respectively, semi-nomadic tribes of western Libya, the northeastern Algerian Sahara, and southern Tunisia and the breakdown of nomadic tribal organization around Ouargla. All four are good general studies, but they are most important in that they show how seminomads, who already have a foot permanently on the threshold of sedentary semiurban life, can adjust to increasing sedentarization without undergoing the shattering cultural disintegrations that such adjustment provokes in more exclusively pastoral nomadic groups.

Finally, Bataillon sums up in three masterful chapters (one written partly by Verlaque) and a conclusion. The problem posed is this: How can a pastoral nomadic tribe be integrated into modern political and economic administrative structures without demolishing the tribe's entire culture and so destroying it? To this, Bataillon's reply is that is really can't be done. Unquestionably he is right. To be sure, he does his best to sugarcoat the pill. He shows that in the relatively fertile *sahel*, where the southwestern Sahara merges into the Sudan, fully nomadic tribes can perhaps be coaxed into a state of seminomadism, and thence eventually into sedentary life, while still retaining their sociopolitical structures and self-respect intact. But this very argument involves the tacit admission that the great majority of Saharan pastoral nomads are beyond effective help, because their territories are isolated semirefuge areas far removed from the potential zone of adaptation.

In short, pastoral nomadism on the grand scale cannot survive the effects

of modern transportation, centralized administrative control, and economic expansion that syphons off laborers and makes them economically more powerful than the warrior-nomad class. So far no efforts to modify the pastoral nomadic way of life have been really successful. The only hope seems to lie somewhere between two extremes, a strictly hands-off policy, on the one hand, and, on the other, an intensive program to improve pasturage, fodder storage, and breeding methods, and thus make nomadism progressively less necessary. Bataillon closes with these ominous words (freely translated by me): "In the last analysis one must hope that the nomads themselves can find a viable way of life in the midst of buffetings." And I, at least, can only say Amen!

To sum up, we have here available, and for the first time, a broad and reasonably coherent survey of the critical situation of pastoral nomadic cultures in the Sahara, and it is a very good one on the whole. In spite of several factual and interpretative errors, it is well worth the time of any reader who approaches it with due caution as regards details.

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## Solar Energy

**Introduction to the Utilization of Solar Energy.** A. M. Zarem and Duane D. Erway, Eds. McGraw-Hill, New York, 1963. xii + 398 pp. Illus. \$13.50.

"The amount of solar energy reaching the earth each year is over thirty thousand times that presently used in the same time period. In view of the rapidly diminishing supplies of fossil fuels it is clear that we must soon devise means for converting solar energy more economically into useful power. This problem has challenged us for many years but there are still very few applications which are economically sound." This paragraph, which is from the editors' preface to a series of lectures given during the academic year 1954-55 and published in this volume, is as valid today as it was 8 years ago.

The introductory lecture, by Farrington Daniels, is followed by a chapter on energy sources of the future, much of which is from Putnam's 1953 study.

The availability, collection, and concentration of solar energy occupy four chapters, and the conversion of solar energy to various other forms of energy—mechanical, electrical, and chemical—is covered in the next three chapters. Thermal applications of solar energy—the heating and cooling of buildings, the distillation of sea water, and high temperature applications—are then considered (3 chapters). A chapter on the economics of solar energy and a long chapter on space applications of solar energy complete the book.

It is very interesting, in 1963, to look back to a research field as it existed in 1955. This is particularly true of a subject like silicon solar cells: in 1955 the cells were a laboratory curiosity that offered some promise for use in the conversion of solar energy to electrical energy on the earth's surface; today, owing to their use in space programs, they are the backbone of a \$10,000,000-a-year business. The economics of solar energy is another subject about which much has been learned during the past 8 years. (One wishes the contributions had utilized the excellent surveys on this topic which were presented at the 1961 United Nations Conference on New Sources of Energy, even though the papers have not yet been published for general use.) The conversion of solar energy to chemical potential energy is another field about which much more information is available today.

The updating of the various chapters is quite uneven. In his chapter on space applications of solar energy, W. R. Menetrey lists work published as late as December 1961. Another chapter that has been considerably updated is the one by George O. G. Löf on heating and cooling buildings with solar energy; Löf provides very precise descriptions and data on cost for solar houses in Lexington (Massachusetts), Denver, Albuquerque, and Tucson, as well as brief mention of several houses in other locations. Apparently other chapters received less updating during the long delay that preceded the publication of the lectures.

The oldest process for utilizing solar energy, one that each of us uses every day, is photosynthesis. It is unfortunate that this interesting topic is hardly mentioned in the book, for much progress has been made in that area during the last 8 years.

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