# Book Reviews

## Science Studies in the U.S.S.R.

**Soviet Sociology of Science.** LINDA L. LUBRANO. American Association for the Advancement of Slavic Studies, Columbus, Ohio, 1976. vi, 102 pp. Paper, $4.95.

Linda Lubrano's book is an extensive review of the Soviet literature in *naukovedenie*, or social studies of science. It is meticulously done and fairly portrays what Soviet scholars in that field have been producing over the last 15 years. The author views her enterprise as a service to American scholars, who, as she rightly remarks, are less aware of Soviet work in the field than the Soviets are of Western scholarship. Apart from the intrinsic interest of the work, however, *naukovedenie* is of interest because its history and status have been unusual for a social science in the Soviet Union.

Today's *naukovedenie* is the product of an exchange of ideas that has taken place between the East and the West during the last four decades. Marxist social analysis of science was first presented by the Soviet delegation to the History of Science Congress in London in 1931, making a profound impression on the primarily Western audience. The Soviet contribution appeared in London in a book called *Science at the Crossroads*. J. D. Bernal and a group of radical British scholars then picked the ball up and returned it some years later in the form of the now classic *Social Functions of Science*. By that time, however, there was hardly anyone in the U.S.S.R. to continue the dialogue. The Soviet scholars who had enjoyed the support and encouragement of Bukharin in developing social studies of science apparently had to pay the price for choosing such a spiritual leader. Nothing was heard about Soviet *naukovedenie* or, moreover, about those who had been its enthusiasts for almost three decades after the early 1930's. It was not until the transitory de-Stalinization of the early 1960's that *naukovedenie* was rediscovered in the U.S.S.R. and that Soviet scholars were again able to have some contact with their Western colleagues. By this time, however, this scholarly field had to be entirely imported from the West.

The homecoming of *naukovedenie* was brought about mostly by natural and exact scientists, influenced by the "science of science" movement developed in Britain and the United States, and in particular by the work of Derek de Solla Price of Yale, who had pioneered a quantitative approach to science studies. Not having entered through the channel of social science institutions, *naukovedenie* was beyond the control of social scientists. As part of the general scientistic movement, it was praised by its new adepts as offering a hope for a science-based science policy and a long-awaited guarantee against arbitrary political meddling in science affairs. From such a position, the practitioners of *naukovedenie* could afford to voice radical (by Soviet standards) criticisms of obstacles they perceived in the path toward "a more efficient science," criticisms that others might see as applicable to Soviet society at large. For instance, after extensive calculations of publication and citation rates one *naukoved* could conclude, and have it printed in his country, that lack of free contact with the West is detrimental to the progress of Soviet science. The situation of Soviet science studies was conducive, at least in the 1960's, to an exceptional ideological, that is political, laxity. Perceived as an adjunct of the exact sciences, *naukovedenie* was able to acquire not only the autonomy but also some of the prestige of those subjects. It found itself under the political protection of members of the scientific elite, since it was expected to confer scientific legitimacy on science policy-makers and their policies. However, the relationship was inevitably precarious. The continuous institutionalization of *naukovedenie*, combined with the diminution of the political significance of science in the Soviet Union, have led to the demotion of *naukovedenie* to the status of other social, that is "'ideological,'' disciplines in the U.S.S.R.

Although Lubrano does not deal directly with the evolution of the discipline, she nonetheless conveys to the reader a sense of the changing discourse in *naukovedenie*. She aptly shows how legitimization of "the leading role played by the Communist Party in the political management of scientific research and development" leads one Soviet author to conclude that together the Communist party and Soviet government are expected to "create and perfect a new type of social organization of science" (p. 78). Yet, as one sees in the book, party controls are meant to go farther than "just" social organization.

> Since the acquisition of "objective truth" is considered to be in the best interests of society, it is essential that the scientist have the "correct *partiinyi* [partisan] approach" to his research. . . . Natural scientists and sociologists are told that they must be "irreconcilable" to "bourgeois distortions" in their respective fields.

The authors of that passage, Lubrano continues, declare that *partiinost* (partisanship) "does not in any way limit the creativity of scientists, because (by definition) the interests of Communist ideology and science coincide in the search for objective truth" (p. 79).

Of great value is a chapter on institutions for research on *naukovedenie*. The author examines major *naukovedenie* institutions through the writings they have sponsored or published. Among other things, her examination shows how the orientations of scholars working for the Academy of Social Sciences under the Central Committee of the Communist Party differ from those of their colleagues in provincial universities such as that at Rostov-on-the-Don. Some institutions whose members have contributed to *naukovedenie* are ignored by the author, and this is also telling. The path-breaking work in scientometrics done by Nalimov and his group at the Moscow State University is not mentioned in this chapter, the reason being that Nalimov, a professor of statistics at the university, did his scientometric work as a side interest and never attempted to associate himself with or to develop a professional *naukovedenie* institution.

Occasionally, Lubrano leaves the official confines of *naukovedenie*, and in the last, somewhat more interpretative chapter she brings in the opinions of two dissidents, Andrei Sakharov and Zhores Medvedev. Her comparison of their ideas on the role of science in Soviet society with those of the professional representatives of *naukovedenie* is insightful and refreshing. She sheds some light on what *partiinost* means in at least one field of scholarship, namely social studies of science.

The publication of Lubrano's book is timely, for *naukovedenie* was one of the areas of Soviet-American cooperation encompassed by the Nixon-Brezhnev agreements. These agreements are due for renewal, and *Soviet Sociology of Science* enables those concerned to get an almost first-hand impression of what has been done in that field in the U.S.S.R.

While there exist several dozen cover-to-cover English translations of Soviet scholarly journals, *naukovedenie* has not been included in them. Lubrano's book therefore fills a gap and, moreover, may encourage someone to undertake a historical and sociopolitical analysis of this unusual Soviet science of *naukovedenie*.

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## Ungulate Ecology

**The African Buffalo.** A Study of Resource Limitation of Populations. A. R. E. SINCLAIR. University of Chicago Press, Chicago, 1977. xii, 356 pp., illus. + plates. $20. Wildlife Behavior and Ecology.

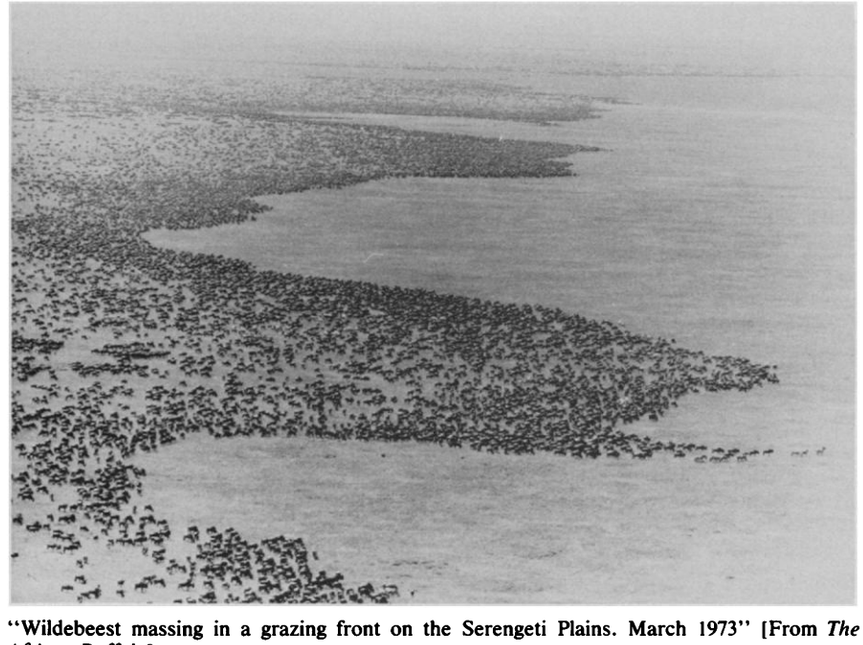
The tribe Bovini of the family Bovidae has been somewhat neglected in recent studies of ecology and behavior notwithstanding the fact that *Bos taurus* has been domesticated for 5000 years and the true wild cattle of Asia have existed in an almost commensal state with mankind for an even longer period. The African buffalo *Syncerus caffer* is the focus of this volume, but a considerable quantity of data from the Asiatic water buffalo *Bubalus bubalis* have also been integrated in the text.

The author conducted fieldwork in the Serengeti over a period of some eight years. The length of the study, the execution of the fieldwork, and the analysis of the data mark this as a classic in ungulate biology.

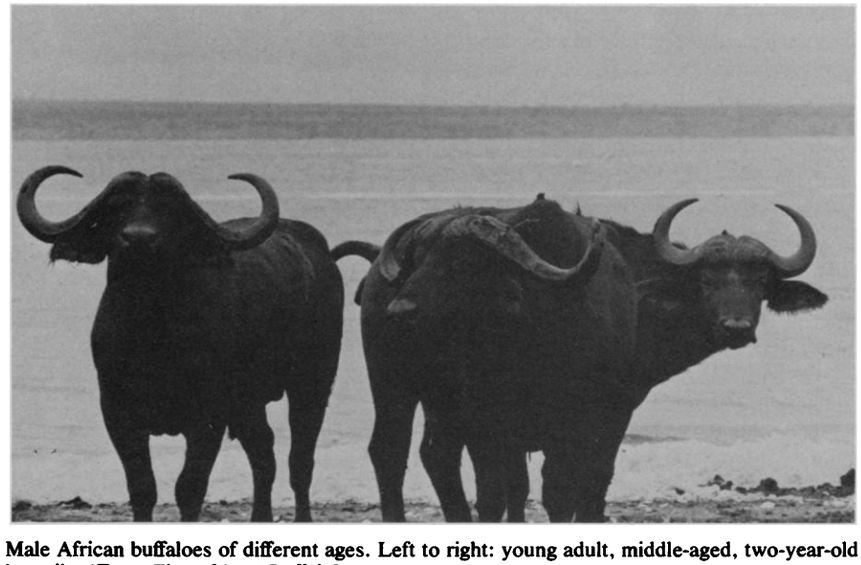
The African buffalo is one of the largest mammals found on the African continent, exceeded in size only by the giraffe, the rhinoceros, and the elephant. Its efficient ruminant digestive system allows it to draw energy from structural carbohydrates. It should be no surprise, then, that where sufficient water for drinking is interspersed with grasses and forbs for grazing the buffalo may reach a point of dominance in terms of biomass within the ecosystem. It is as an adult large enough to deter significant predation, and its social system involves group defense of juveniles against predators. In the absence of disease its numbers can approach the carrying capacity of the habitat. The species is, in short, the perfect subject for analyzing one aspect of population regulation, namely regulation through food as a density-dependent mechanism. This is exactly what Sinclair sets out to do, and he does it admirably.

Sinclair reviews the evolutionary history and present distribution of the Bovini and then proceeds to a detailed analysis of the habitat requirements and feeding ecology of *Syncerus*. Social behavior, reproduction, and growth are all covered in the first seven chapters. The last four chapters address themselves to the population dynamics.

Buffalo population densities vary from region to region depending on the length of the growing season, which at this latitude depends ultimately on rainfall. Mortality increases in adult age classes as density increases, and when this mortality is coupled with fluctuations in the juvenile mortality the resultant death rates serve to regulate the populations. Food supply is now the major regulator of density, but prior to 1963 the major regulating influence was the bovine disease rinderpest. Adequate veterinary prophylaxis addressed to domestic grazing stock in the early '60's was indirectly instrumental in releasing the African buffalo populations from regulation through pandemic disease. Sinclair then goes on, by analyzing the forage quality, to explore the manner in which the food supply controls population. During the dry season forage quality declines and buffalo are forced to draw upon their fat reserves. Decline in nutritive intake and a constant parasite load act synergistically to promote mortality. Predation accounts for only 30 percent of the annual



"Wildebeest massing in a grazing front on the Serengeti Plains. March 1973" [From *The African Buffalo*]



Male African buffaloes of different ages. Left to right: young adult, middle-aged, two-year-old juvenile. [From *The African Buffalo*]