

on, and vector. Purists might quarrel with this choice, but I would agree with Buchwald that if one truly wants to make sense of the history of electromagnetic theory, unified mnemonic notation is a necessity. Beyond this, Buchwald is concerned to establish the differences between the Maxwellian and the modern formalisms by explicit comparison and contrast, and uniform vector notation is a great help in this. Both for substantive reasons and for the sake of appearances, however, I wish that Buchwald had been more explicit in specifying the relationships between his renderings of the mathematical arguments and the originals, as regards both notation and content. Also, more careful and explicit definition of symbols would have been a help to the reader. These caveats notwithstanding, the book is required reading for anyone with a serious interest in the history of electromagnetic theory and represents a major contribution to the field.

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## Papers from Khabarovsk

**Beringia in the Cenozoic Era.** V. L. KONTRIMAVICHUS, Ed. Balkema, Rotterdam 1985 (U.S. distributor, International Publishers Service, Accord, MA). xvi, 724 pp., illus. \$38.50. Russian Translations Series, 28. From a symposium, Khabarovsk, May 1973. Translated from the Russian edition (Vladivostok, 1976).

The Special Foreign Currency Science Information Program made funds available to the U.S. Geological Survey to translate and publish this collection of papers presented at the All-Union Symposium on Beringia held in Khabarovsk in 1973. Beringia is that area of northeastern Asia and northwestern North America that lies north of 50° latitude between the Lena River, U.S.S.R., and the Mackenzie River, Canada. The interest of some scientists has been focused on this region because of the periodic emergences of the Bering land bridge, each lasting thousands of years, during the roughly two million years of the Quaternary as well as extended episodes during the Tertiary. The dynamics of landmass and sea level that controlled the existence of the land bridge and the exchange of the biota that this connection allowed continue to fascinate.

The Khabarovsk symposium was stimulated by the very successful one convened at the 1965 Congress of the International Union for Quaternary Research in Boulder. The volume that resulted from the earlier symposium (*The Bering Land Bridge*, D. M.

Hopkins, Ed., Stanford University Press, 1967) contained several papers by Soviet scientists, but these gave us only a glimpse of the work being done in the U.S.S.R. The 1973 symposium, followed in 1976 by the publication of the papers (in Russian with English abstracts), more fully displayed the extent of the Soviet research. Contributors from the United States, Finland, East Germany, Hungary, and Switzerland rounded out the picture. Naturally the impact of the volume was limited to those who read Russian or were able to have translations made. Now the complete translation opens the work to a much wider audience.

Some of the papers are short, no more than extended abstracts, and most are rather broad-brush generalizations of the type endemic to symposium volumes. Nevertheless, we can read their conclusions, be introduced to the Soviet literature, and also appreciate how much of the English-language literature the Soviet scientists have incorporated into their syntheses. One difficulty lies in the vagueness of the geographic context, fossils, cores, and even mountain ranges typically not being placed with any precision.

The volume opens with ten papers that deal very generally with geologic structure, vegetation, and the invertebrate fauna of marine deposits. A section of 15 papers on the vegetation and paleogeography of Beringia includes studies of macro- and microfossils as well as contemporary floristics. These tend repetitively to demonstrate continuous and disjunct distributions as a confirmation of the Beringian connection of the two continents. Yurtsev's opening paper is one of the few that fully develops mechanisms and timing of exchanges as well as descriptions. His concept of temporal zonal dynamics in Beringia has already been assimilated into our botanical literature. Faunistic studies are divided into sections on fossil and contemporary taxa. The review of mammalian relationships by Sher is a nice companion to Yurtsev's paper in that Sher also establishes the basic outlines with evidence from both eastern and western Beringia. Eleven papers deal with the migration and evolution of such diverse taxa as esocoid fishes, birds, voles, and of course the megafauna and associated predators. Guthrie's paper on the environmental influences on body size, social organs, and population dynamics of mammals is not a review but original and should be consulted for a fuller understanding of his position in the debate over late-glacial paleoecology. Six papers are devoted to mammals (three of these to interesting karyological studies), three to insects, and one to the helminths of mustelids. Ten papers on human prehistory discuss the movement of antecedent cultures from the

Old World to the New with evidence from archeology and (in one paper) population genetics.

The drawings, graphs, and maps were redrafted, but unfortunately no attempt was made to reduce the clutter of many, so that in the final, smaller, format of the translation volume the obscurity has been preserved or worsened. The reproduction of the photographs, which was mediocre in the original, is often poor. Misspellings and errant word choice are common. Altogether not a particularly good job of production has been done.

Although some conclusions have been modified in the decade since its first publication, the book remains a good reference. I value it for the papers that provide background for the Soviet contributions to the Burg Wartenstein conference of 1979 and the subsequent volume edited by Hopkins and others (*Paleoecology of Beringia*, Academic Press, 1984). The record of the Khabarovsk symposium is a significant link in a growing chain of statements, challenges, and replies that testify not only to sustained but also to increasing interest in Beringian history, here and abroad.

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## Herpetology in the Pacific

**Biology of Australasian Frogs and Reptiles.**

GORDON GRIGG, RICHARD SHINE, and HARRY EHLMANN, Eds. Published in association with the Royal Zoological Society of New South Wales by Beatty, Chipping Norton, N.S.W., Australia, 1985. xvi, 527 pp., illus., + plates. \$59. From a conference, Aug. 1984.

This volume presents papers from a conference held in Sydney in 1984. The program comprised eight symposia that form the sections of the book: Population Ecology, Ecological Biogeography, Phylogeny of Elapid Snakes, Reproductive Biology, Physiological Ecology, Rare and Endangered Species, and Husbandry and Snakebite. The 63 chapters reveal diverse approaches to herpetological research. The treatment of population ecology is disappointing. Many of the papers are purely descriptive, and few integrate information beyond the context of the individual study. Among the exceptions is T. D. Schwaner's account of morphological variation in the populations of tiger snakes on several islands off the coast of South Australia. The islands were isolated from each other and from the mainland by rising sea levels some 6,000 to 10,000 years ago. The snakes on the islands vary in mass