

## GEOBOTANICAL AREAS OF THE POLAR REGIONS

[Review by S. W. Greene\* of V. D. Aleksandrova's *The Arctic and Antarctic: their division into geobotanical areas*, translated by Doris Love. Cambridge, Cambridge University Press, 1980, xiii, 247 p, illus. Hardcover £15.00.]

This is an English translation of the 29th Komarov lecture, delivered by V. D. Aleksandrova in 1974, which was first published in 1977 as *Geobotanicheskoye rayonirovaniye Arktiki i Antarktiki* (Leningrad, 'Nauka'). Since few western botanists have a working knowledge of Russian, and as an extensive literature pertaining to plant life of the tundra is in this language, the translation provides a welcome introduction to the views of its distinguished Russian authoress and those of many of her compatriots. An excellent feature is the liberal citation of original sources, and the provision of an extensive 33-page bibliography; over half of the estimated 600 references are to the Soviet literature. Like all translations, however, there are the inevitable textual difficulties resulting in places in a 'strange sounding' prose. For example, a constantly-used Russian word such as *plakor* has no corresponding English expression and it was obviously difficult to capture the exact meaning: 'The expression zonal, mesic association, habitat, etc . . . is used to describe the zonal type of growth on mesic habitats, neither too wet, nor too dry, neither too sheltered nor too exposed, and covered by neither too little nor too much snow . . .' (footnote p 8-9). The use of words and phrases such as cryoxeromesophilous, definite ecobiomorph, and hekistothermal mesophyllous dwarf shrubs will add to the strangeness for many readers.

Dr Aleksandrova in her foreword explains that her aim is to review the extensive literature which has accumulated over the last 50 years and ' . . . to formulate a division of the polar lands into geobotanical areas and in examining, from a uniform point of view, the vegetation cover of the circumpolar territories of the Arctic northward from the forest limit to the farthest points of the land and of the Antarctic southward from the line of the Antarctic convergence'.

In her opening chapter, Aleksandrova enumerates and discusses the way authors in the USSR and those from elsewhere have classified Arctic vegetation and divided the northern polar area into botanical divisions, regions and/or zones. Thus, in the west, classifications have been based mainly on the degree of closedness of the vegetation, whereas Soviet botanists have, in general, based theirs on physiognomic and floristic physiognomic lines. Aleksandrova prefers to use ' . . . a complex of diagnostic characteristics, including the combination of definite ecobiomorphs and geographical groups of species, the composition of the characteristic synusia . . . and the characteristics of the structure'. Using these criteria, land north of the limits of the boreal forests is grouped into two major circumpolar regions: a more southerly tundra region and a more northerly polar desert. The tundra region is further sub-divided into two circumpolar sub-regions: sub-Arctic tundra and Arctic tundra. The more detailed sub-divisions are considered in the next chapter.

Chapter 2 presents an account of the Arctic tundra regions with further sub-division into circumpolar belts, provinces, sub-provinces and districts. This chapter is undoubtedly the most valuable part of the whole work, comprising over half the total number of pages with more than half of it dealing with the geobotanical divisions within the USSR. Through it the reader is introduced to a lot of material which has not previously been translated into English and is not readily accessible. The next chapter deals with Arctic polar deserts, and again it is the treatment of the Soviet provinces which will be of greatest interest to the reader familiar with the non-Soviet parts of the high Arctic.

In chapter 4 attention is turned to the Antarctic, the northern boundary of which is taken as the Antarctic Convergence. Using the 'complex of characteristics' applied to the Arctic, the Antarctic is divided into two circumpolar geobotanical regions: the region of sub-Antarctic cushion plants to the north, corresponding to what has been called elsewhere the sub-Antarctic botanical zone; and the more southerly Antarctic polar desert, or the Antarctic botanical zone as it is more familiarly known. The authoress rightly remarks that 'neither type of landscape or the nature of the vegetation can be used for identification with the tundra of the northern hemisphere'. But there is perhaps an unfortunate implication that the bogs on the sub-Antarctic islands are composed mainly of cushion plants. This is in fact not true; rush and sedge mires with a bryophyte understorey (rarely *Sphag-*

\* Institute of Terrestrial Ecology, Natural Environment Research Council, Bush Estate, Penicuik, Midlothian EH26 0QB.

*num*) are the normal type of plant community. On the other hand, the regions of the Antarctic polar desert is considered to agree in all essential characteristics with the vegetation type of Arctic polar deserts. The final concluding chapter is all too brief and the book ends with a list of latin plant names and a useful index.

The most serious defect of the whole work is the total absence of photographs, and the poor quality of the small number of accompanying maps which are too small to give good detail. Also, there is much to argue about in the classification itself. For example, the translator queries the exclusion of Iceland from the tundra zone. Why has the southern tip of Greenland also been excluded? Why is no comment made about the classificatory position of the vegetation of the Falkland Islands and other islands of the Southern Ocean which are usually included in the southern cool temperate zone? Yet, in spite of these defects, in time this book is likely to be looked upon as something of a milestone in polar botanical literature. Due to the translator's efforts, many will have been introduced to information and ideas which up to now have been lost sight of in Soviet literature because of the language barrier. And thinking on the classification of polar vegetation can only be enriched as a result of the stimulating overview presented here. This book is a 'must' for all students of plant geography, especially of the cooler parts of the world; all those involved in its production and publication are to be congratulated.

### THE ORTHODOX CHURCH IN ALASKA

[Review by Marvin Falk\* of Barbara S. Smith's *Russian Orthodoxy in Alaska: a history and analysis of the church archives in Alaska with an annotated bibliography*. Anchorage, Alaska Historical Commission, 1980, x, 171 p. Softcover. US\$ 12.00.

The Russian Orthodox Church has had enormous cultural, linguistic, social and even economic influence in Alaska. The arrival of the first Orthodox missionaries in 1794 predated the establishment of the Russian American Company. The Church became the primary agent of formal education, developed written forms for a number of native languages, and became an integral part of everyday life throughout most of the Russian-administered territory. Over time much of the Church's work was carried out by natives and creoles as well as by the Russian born. Its influence has never completely disappeared and is present today, sometimes working in subtle ways. Very little is generally known in detail because a complete history of the Church has yet to be written. This is not surprising since much of the primary documentation has not been available, and only a few scholars up to now have devoted their time to the study of the Orthodox Church in Alaska. The primary documents are very rich indeed, and they can serve those interested in demography and social history in much the same way as parish records have served in the study of medieval or early modern societies in Europe. This material is especially useful when it is combined with other independent observations, good oral histories when possible, and the best archaeological, ethnographical and anthropological studies.

An exciting discovery has been the recent collation of documents and records of the Kvikhpak (Yukon) River Mission by the Alaska Diocese of the Orthodox Church. This material has been filmed through a joint effort which included the state, the Western Interstate Commission on Higher Education and the University of Alaska. Barbara Smith, who arranged and described the material, has expanded upon her original 1974 report to produce *Russian Orthodoxy in Alaska*. She includes a brief history; a description and inventory of the archival collection, now housed at St Herman's Theological Seminary in Kodiak; a chronology; and a selected bibliography with annotations. With the exception of the Kvikhpak inventory, her subject is the Orthodox Church in Alaska as a whole. She provides the best available guide to the names and assignments of Orthodox clergy. She briefly describes other archival collections and passes judgement on what has been published about the history of the Church. The text is handsomely printed with a number of useful maps, illustrations and photographs of church structures. It is not an exhaustive reference guide to the whole of the published or manuscript literature, nor is it meant to be. It is, however, an excellent place to begin for those interested in serious research as well as those who want a general orientation.

\* Elmer E. Rasmuson Library, University of Alaska, Fairbanks, Alaska 99701, USA.