Russian Geography

Physical Geography of Asiatic Russia. S. P. Suslov. Translated from the Russian by Noah D. Gershevsky. Joseph E. Williams, Ed. Freeman, San Francisco, Calif., 1961. xv + 594 pp. Illus. $15.

The Soviet Union. The land and its people. George Jorré. Translated by E. D. Laborde. Longmans, New York, ed. 2, 1961. 372 pp. Illus. $7.50.

When I asked a Soviet geographer to comment on the Suslov translation, he remarked that the original was a useful volume but that now, of course, it was out of date. The first edition appeared in 1947, but the translation is based on the second edition which appeared in 1956. Much of the actual translation was done by Clayton L. Dawson, under the supervision of Noah D. Gershevsky. In the editorial foreword, Joseph E. Williams remarks about Suslov: "never before has a geographer set about his work with such a determined effort to understand all the physiogeographic forces acting in a given area."

S. P. Suslov's *Physical Geography of Asiatic Russia* might be regarded as a regionalized amplification of Berg's *Natural Regions of U.S.S.R.* (1937). It is a detailed delineation of the total landscape in the 15 regions east of the Urals and is well supplied with 50 maps and 168 illustrations. The coverage is comprehensive, for Suslov has analyzed the entire natural landscape, ranging from geology through meteorology, vegetation, and mining to zoology. This is more an encyclopedic survey than an objective evaluation, but it provides the best description in English of Western and Eastern Siberia, the Far East, and Central Asia.

The scope of the book is suggested by the subdivisions of the chapter on the mountain region of Central Asia. This chapter covers geologic history, mineral resources, glaciation, earthquakes, climate, relief-forming processes, hydrography, vegetation zones, and mountain landscapes. The discussion of permafrost covers 18 pages, but the limited attention given to mineral resources is shown by the fact that there is but one reference each to petroleum and iron. Coal is not listed, although it is mentioned under the Kuznets basin; there is no reference to water power.

The Soviet Union, by Georges Jorré, now appears in a second edition, translated from the French and revised by E. D. Laborde. The original volume, by the late Professor Jorré (University of Toulouse), was one of the best textbooks when it was first published in 1950; the revision incorporates new statistical data with additions in the regional chapters.

Jorré's book is divided into four parts: the physical setting, the expansion of the Russian world, the economic system, and the main natural regions. The last part is subdivided along vegetation lines. The book is well balanced and interestingly written.

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Tobacco and Man

Tobacco: Experimental and Clinical Studies. A comprehensive study of the world's literature. P. S. Larson, H. B. Haag, and H. Silvette. Williams and Wilkins, Baltimore, Md., 1961. xii + 932 pp. Illus. $20.

Since the 16th century, when tobacco was introduced into Europe, its use has been a controversial matter. Robert Burton in his 17th-century *Anatomy of Melancholy* called the tune by saying "Tobacco, divine, rare . . . a sovereign remedy to all disease, a virtuous herb if it be well qualified, opportunely taken, and medicinally used, but as it is commonly abused by most men, 'tis a plague, a mischief. . . ." All the significant scientific information on this controversial subject has been well explored by the keen pharmacologists at the Medical College of Virginia. They have written this huge volume, comprising an analysis of over 6500 scientific references. It is well organized for ready reference to specific detail.

In these days when it is increasingly important for science to have comprehensive and critical reviews, this volume on tobacco offers an interesting example of what may be coming. Here in one place is all the pertinent information available on the effects of tobacco and its alkaloids on living material, and especially on human beings. There are over 100 pages, with three columns on a page, for the listing of references; full titles and full pagination are included.

The analysis goes directly into the problem of the absorption and fate of alkaloids and other substances in tobacco as they are ingested, by inhalation or by other means, into the body. Then follows a consideration of the effects of tobacco and its alkaloids on the special senses, the nervous system, skeletal muscle, blood, the cardiovascular system, the respiratory system, the urinary tract, the gastrointestinal tract, the oral cavity, metabolism, the endocrine glands, and the reproductive organs. The pages are large and double-columned; the material discussed so far in this review covers nearly 400 pages.

The authors consider the local actions of tobacco, its detailed toxicity and hypersensitivity, tolerance, and habit. The immunology of tobacco is discussed, and there is a general survey of the effect of smoking tobacco on the human organism as a whole. There follows a consideration of tobacco and disease, not only from the standpoint of generalities, but also with reference to specific diseases. Consideration of lung cancer in relation to tobacco smoking is handled judiciously and fairly. There is even a chapter on medical uses of tobacco, and there are helpful appendixes on the biological and chemical methods for the estimation of nicotine, as well as notes on the pharmacology of certain derivatives of nicotine.

Certainly, for anyone desiring detailed information regarding the effects of tobacco, this volume must be a prime source. Its only failing is its lack of a historical survey covering some 400 years of accumulated writings on tobacco, most of which relate to various conflicting opinions on its merits. The initial introduction of tobacco into various parts of the world has always been as a medicine. Indeed tobacco remained in most of the pharmacopeias until the late 19th century. Nevertheless, by the 18th century, it was clear that tobacco was used more for amusement than for its medicinal virtues. Its potential dangers were well appreciated by the early 19th century.

Not the least of the interesting aspects of tobacco has been the extensive use of its chief alkaloid, nicotine, in the physiological analysis of the components of the autonomic nervous system. This was initiated by the famed English physiologist, John N. Langley (1852–1925). The authors discuss this fully and include references to 30 of Langley's contributions on this important matter.

For many years the authors of this

great compilation have been engaged in studying various aspects of the effects of smoking tobacco and of nicotine. This volume, which is so well organized and indexed, and which has such a comprehensive bibliography, will long remain a well appreciated record of their endeavor.

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Agronomists' Treatise

Tropical and Subtropical Agriculture. vol. 1 and vol. 2. J. J. Ochse, M. J. Soule, Jr., M. J. Dijkman, and C. Wehlburg. Macmillan, New York, 1961. liv + 1446 pp. Illus. $35.

These boxed, cloth-bound volumes, are printed in easily read type on good quality paper. The authors, from the University of Miami and the University of Florida, have prepared a treatise that will be useful to college students, farmers, technicians, and crop administrators.

The first 368 pages contain general information on climate, physiography, soils, cultural practices, diseases and pests, and the economic possibilities relative to crops. The rest of the book treats important crops such as bananas, citrus and other fruit crops, spices, beverages (coffee, cacao, tea), rubber and cinchona, oil crops, fiber crops, sugar cane, rice, maize, sorghum, and tobacco. There are 285 illustrations.

It is not an easy task to review the two volumes, and I obtained the cooperation of experienced agronomists and horticulturists at the Agricultural Experiment Station and at the College of Agriculture of the University of Puerto Rico as well as a few others. Their comments follow:

"The authors strive to cover a vast field in two volumes. The depth and extension of the discussion has therefore been sacrificed to the scope. This is in part remedied by the appended bibliography, although this implies additional search on the part of the reader.

"Commendable features are the glossary, and the author-subject-common plant indexes. Too much space has been sacrificed in listing the names of plants in various languages and dialects at the beginning of the discussion of each crop. Such information could have been assembled in small print in an appendix, and much needed space could have been saved for more useful information."

"Sea Island and Egyptian cotton are not the same. Sea Island *Gossypium barbadense* (L) Var. Maritima Watt., is perhaps the most valuable of all the different species.

"Egyptian cottons, as a class, are not so fine as Sea Island, but are superior to that of the American uplands for goods that require a smooth finish. In general, the data are accurate, but there is not enough information. As to the best fiber crop, the book is all right in a general way, but it lacks information on important fibers like flax and linen. The information about soybeans and sesame is accurate, although brief."

"*Bixa orellana*, commonly known as achiote or annatto, is an important plant in the tropics. Its seeds are used for coloring in food, cosmetics, and other items. In Puerto Rico alone, $200,000 of achiote seeds are imported annually from the Dominican Republic, Mexico, and other producers. No mention of this plant is found in the book.

"The statement concerning the quality of fruits obtained from six different forms of trees of *Carica papaya* does not seem to be appropriate.

"The statements describing flower biology, breeding and selection, and so forth of *Coffee arabica* and other species should have been kept separate in order to make the views easier to understand."

"Tobacco. Flue-curing is not used in cigar-wrapper tobacco, but in bright cigarette tobacco. The method described in the rest of the paragraph, extending to page 1307 refers to flue-cured (bright) tobacco. Cigar-wrapper tobacco is wilt-fired (charcoal or Lp-gas) during the first four or five days to remove excessive moisture and obtain light brown colors. Thereafter, the cure is completed by air-curing in more or less the same way used in dark air-curing.

"On page 1308, first line. Tobacco is usually fermented in a warehouse, not in a barn."

"The rest of the section on tobacco is very interesting; the topic is very well dealt with, in a short concise exposition."

"Rubber. This is a good chapter, fairly detailed but disappointing; it lacks modern information about physiology of rubber formation."

"Oil crops. Good, but the dwarf-tall hybrids developed in Ceylon are neglected. Also, in view of the growing economic importance of coconut diseases, quite a bit more information on this could have been included."

"Sugar cane. A good chapter, but tensiometers and gypsum or nylon blocks are used in the commercial irrigated sugar fields in Hawaii for water control of the sugar cane plant."

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Showmanship

Physics for the Inquiring Mind. The methods, nature, and philosophy of physical science. Eric M. Rogers. Princeton University Press, Princeton, N.J., 1960. 778 pp. Illus. $8.50.

Eric Rogers's course in physics for nonscience students at Princeton University has been famous for many years: it is probably the best known and most deservedly popular course of its kind in the country. Now he has put it down in a very handsome book, for all to see and possibly attempt to emulate.

In general terms, the physics is sound, the plan of organization novel but well thought out, the presentation ingeniously varied, often toward the end that the student can acquire ideas with a real sense of participation in the development. There is much use of familiar analogies to sports and other activities. The illustrations reflect some of the author's great showmanship with demonstrations. There are literary allusions and occasionally historical references to "tie in" the physics. The style is breezy and informal, so that the reader is carried along through what would otherwise seem a frightening amount of print, although some may not feel comfortable with such conceits as "the neutrino . . . *he*," and the like.

The ingenuity which produces so many useful parallels and analogies is always in danger of attributing to the discoverer of a scientific idea the motivation desired for pedagogical purposes. For example, there is no evidence, so far as one can see from the original paper, that Maxwell introduced the displacement current for reasons of mathematical symmetry; indeed, his justification, when he got around to giving one, involved the familiar condenser paradox with the circuital form of Am-