BOOK REVIEWS, continued

The Agricultural Research Service

This book presents the story of the Agricultural Research Service, from its unofficial beginnings with George Washington's experiments on soils, seeds, and fertilizers, to the continuing controversy about the effects of pesticides, which rose from the publication of Rachel Carson's "Silent Spring." The author, who was information director of theARS for 12 years, also attempts to explain both the research and regular duties of the organization. In a chapter entitled "Functions of the Agricultural Research Service," he discusses ARS's six main areas of work—farm research, marketing research, nutrition, consumer, and industrial-use research, research in foreign countries, regulatory and control programs, and management programs. In two other chapters he describes in more concrete terms some of the specific achievements of the ARS, among them Edward F. Knipping's sterility principle for eradicating insects, which was highly successful with the screwworm fly, and the development of a method for producing penicillin in large quantities. The book also contains four appendices, a bibliography, and an index.—JDS.

Hydraulic Resistances of Drain Pipes

Hydraulic flow experiments were carried out using five different PVC pipes. The results of hydraulic resistance measurements with full flowing drain pipes under pressure showed that a straight line relationship existed between log λ and log Re. Resistance equations showing higher exponents for R and S than are found in the normally used Manning formula were derived from this relation. An equation showing the relation between discharge, hydraulic head, and length of the drain line was derived for a constant inflow per unit length of drain. The experiments covered a range of Reynolds numbers sufficient for all practical cases of drainage.—JDS.

Entrance Resistances of Plastic Drain Tubes

Model tests on different types of plastic pipes were performed in order to investigate factors determining entrance resistance. The use of larger pipe diameters tended to decrease entrance resistance better than an increase in the amount of perforation. A single sheet of fiberglass reduced entrance resistance, not because of its effects as a filter, but because it formed a more permeable layer around the pipe. It was concluded that thicker filters were more effective than larger diameters or more perforations. A perforation of two rows or 450 mm²/m was usually sufficient.—JDS.

Oestrogenic Constituents of Forage Plants

This lithograph presents a study of how oestrogenic activity in forage plants is associated with reproductive problems in farm animals. Although it is difficult to assess the scope of the problem, the situation is more serious than was previously thought. The author proposes that more study be given to "the nature of the physiological responses to oestrogenic pastures and to their correlation with chemical assay." He also asserts the possibility that forages may contain minute amounts of other highly potent oestrogens which have not yet been detected, and that interrelationships between plant disease and oestrogenicity may be extremely important in relation to infertility problems.—JDS.

The Coconut Palm

This survey of the scientific and practical aspects of coconut production is one of the series "Techniques Agricoles et Productions tropicales," which produced books on the banana, the oil palm, spice plants, the pineapple, and rice. New information includes attention to the various aspects of the coconut in West Africa. Some of the more general subjects covered are vegetative and biologic breeding, climate and soil needed for growth, propagation, products and by-products, and world production and trade. Other information is contained in 31 tables, 47 line drawings, 76 photographs, and a bibliography.—JDS.