

ricultural cooperatives is proposed (chapter 5); whether native governments can do what, it is inferred, they need to do to launch an effective cooperative movement is by no means certain. The essentiality of birth control is recognized (chapter 6), though not, perhaps, the need for immediate and effective action if "peasants" are to be freed from the "incubus" of the stork as well as from that of "land-owners and grasping middlemen"; "birth control" is inaccurately described as "expensive," even though the high return on investment in voluntary sterilization and other control measures has been well demonstrated.

Major though not exclusive emphasis is placed upon investment, of which about \$30 billion is needed annually, given a capital-output ratio of 4, population growth of 2 to 3 percent per year, and an increase of 4 to 5 percent per year in per capita income (chapter 7). The underdeveloped countries can supply some \$10 billion (chapters 7 and 8); hence presumably the developed world, now supplying about \$6 billion public and \$2 billion private funds, might furnish much of the balance (chapters 9 and 10).

Moussa suggests that *total* investment in French Tropical Africa continues to approximate 3.2 times French public investment in this region (page 91), even as total income approximates 3.2 times primary income. The role of private investment seems to be underestimated (chapter 10), though profit-sharing formulas are discussed (chapter 3), and the adverse effects of recent expropriation are noted. Moussa notes that public and private investment are complementary, but he neglects another aspect: because public and private investment also compete for available savings, adequate investment criteria are needed.

Technological and intellectual aid, along with psychological and political conditions, are discussed. While aid is described as a "world problem," greater emphasis is put upon the "political stakes" for which East and West supposedly are competing. Sources of waste in foreign aid programs are neglected; and no cold assessment is made of the supposed "political stakes" that underdeveloped countries now play to such good advantage.

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## Sinhalese, Tamil, and Veddah

### The Physical Anthropology of Ceylon.

Ceylon National Museum's Ethnographic Series Publication No. 2. Howard W. Stoudt. P. E. P. Deraniyagala, Ed. The Museum, Colombo, Ceylon, 1961. 180 pp. Rs. 7.50.

The appearance and disappearance of exotic peoples who inhabit large areas is frequently best studied in smaller refuge areas where both immigrations and the subsequent circumstances of their evolution are more starkly delineated. Ceylon, like Madagascar and Greenland, is such an insular laboratory, and it has been judiciously utilized to explore the human biology and population history of its inhabitants. The basic anthropometric data on which this volume is based were collected by J. R. de la Haule Marett, prior to World War II, in which he lost his life. Fortunately the value of the study was appreciated, and the data were sent to E. A. Hooton. After Hooton's death, W. W. Howells and E. E. Hunt made the data available to H. W. Stoudt. P. E. P. Deraniyagala, W. M. Krogman, and C. S. Coon provided substantial assistance in seeing this study brought to a successful conclusion a quarter century after its inception.

At the time of the first European conquests, Ceylon was occupied by three racial groups: Sinhalese, Tamil, and Veddah. Veddoid peoples have long enjoyed popularity in anthropological literature, in part because of their similarity to Australian aborigines and their morphological antiquity. Now, for the first time, an adequate series of Veddahs is described, and evidence is presented that this original group is disappearing as a result of intermixing with Sinhalese and Tamils. Reduction of the death rate by elimination of malaria, coupled with a high birth rate, is producing a high rate of population growth for the island as a whole. This study of morphological variation provides an indispensable benchmark for future assessments of the population.

There is an especially sophisticated discussion of problems of morphological differentiation, with attention to genetics, physical environment, cultural environment, diet, and nutrition. A section on breeding habits, with tabular analyses of biological and geographical relationships of the subjects'

parents and of the frequency of mating between the various village and caste groups, firmly establishes, in quantitative fashion, the Mendelian nature of the groups measured.

Among the findings are a tendency toward Mongoloid characteristics at higher altitudes, the absence of an expected size increase in recent Tamil immigrants, larger body size in areas that have soils of limestone origin, stature increase resulting from heterosis, and greater geographic variation within castes than between castes in the same area. Human biologists and ethnologists will find a wealth of good data and interpretation on the several groups of this expanding island population.

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## Standard Text Revised

**Introduction to Physical Geology.** Chester R. Longwell and Richard F. Flint. Wiley, New York, ed. 2, 1962. 504 pp. Illus. \$7.95.

The greatest changes in this second edition of one of the most successful textbooks on physical geology are in the overall size and format, in the number of illustrations (increased by about 50 percent), and in the price (also up about 50 percent). Of these changes, the increased illustrations will be the most welcome, because this book now ranks as one of the best illustrated texts in the field.

The order in which the material is treated is standard. The authors have added material in places and thus have enlarged the book over the original edition (1955), but the organization remains the same. This has tended to make the book more detailed without making it more technical, and some geologists will regret the failure of the authors to really integrate modern chemistry and physics into physical geology. This criticism, however, can be applied to all of the books in this field. What seems to be needed is the weaving through the text of some fundamental principles, such as viscosity and the concepts of equilibrium and stability. The authors have attempted this, but more thorough revision is needed. Terms are defined in the text, and a glossary is omitted. Unfortu-