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THE IMPORTANCE OF ECOLOGY IN RELATION TO DISEASE¹

By PROFESSOR RICHARD P. STRONG

DEPARTMENT OF TROPICAL MEDICINE, HARVARD MEDICAL SCHOOL

THE scientific study of the mutual relationship between organisms and their environment in regard to pathological processes is obviously a subject of great complexity, and one which may be discussed from many different standpoints. The importance of geographical ecology and of phyto-ecology is apparent in many investigations of this character, for the geographic, the climatic and meteorologic conditions influence the flora, and all these in turn affect the fauna; while both vertebrate and invertebrate animals may act as the intermediate hosts of the disease concerned. Indeed, so closely are animal and vegetable forms of life limited by physical barriers and environment that

it has been proposed to classify climate according to prevalent species.

Again, ecological studies with reference to disease may often require a consideration of the reaction of the organism to environment—physiological or pathological ecology. In the development of parasitism, a transition in the life cycle of an organism may convert a physiological or harmless process into a pathological one.

In regard to the effect of climatic environment upon the human host, it may be recalled that even in the Middle Ages health and disease were firmly believed to be subject to cosmo-meteorologic influences. Soothsayers or authors of this period attributed epidemics of infectious diseases especially to atmospheric and to terrestrial phenomena, such as earthquakes, volcanic eruptions, severe storms or droughts, and even to the

¹ The Maiben Lecture before the American Association for the Advancement of Science, given at Minneapolis on June 25, 1935. (Illustrated with lantern-slides and moving pictures.)

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