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Chance in Development as a Cause of Variation

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species of turtle. When the turtle is digging her nest or depositing her eggs she is not easily frightened so that it is possible to get very close to the animal and to use a flash light within an inch or two of the body. On several occasions a number of students at the Laboratory were able to watch the entire process from the time the turtle landed on the shore until it returned to the water again. This paper presents more or less in detail the events that took place in the little more than two hours occupied by the turtle in digging the nest, laying the eggs, and concealing the nest.

SOCIOLOGY AS A SCIENCE

HORNELL HART

The term "social science" appears to be taken seriously neither by scientists nor by sociologists. Conditions in social research have justified that lack of confidence, but an increasing group has set about the systematic collection of data on specific social problems and is reaching results capable of objective verification. Three recent studies of the Sociological Division of the Iowa Child Welfare Research Station illustrate this tendency. One of these measures and describes by statistical methods the selective emigration which threatens to impoverish socially certain rural areas of the state. A second study develops by means of partial regression equations the fact that the intellectually and economically successful classes in Iowa have much lower net fecundities than the unsuccessful and the ignorant. A third investigation is developing methods of quantitative analysis of social attitudes and interests.

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CHANCE IN DEVELOPMENT AS A CAUSE OF VARIATION

P. W. WHITING

Variation is ordinarily considered as due to internal hereditary factors interacting with external environmental factors during development. In experimental work with a parasitic wasp considerable variation has been found in certain pure-bred stocks kept at certain constant environmental conditions. Either at other constant environmental conditions or in other pure-bred

stocks this variation does not occur. Variation appearing under uniform conditions of heredity and environment is considered as due to slight irregularities of division and distribution of cells during embryology and to other more or less intangible factors of development. Individual variation resulting from chance in development is on the average predictable, just as is hereditary variation resulting from chance distribution of Mendelian units in gametogenesis and fertilization. It is highly probable that many mental and physical differences in man are due to these intangible factors of development. A knowledge of these factors will be of importance in relation to studies in eugenics such as are being conducted at the Iowa Child Welfare Research Station.

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