

the limits of the entities which they have discovered and to arrange them according to their resemblances. The methods employed have been principally those of comparative morphology. The relationships within these entities and the intraspecific structure which is conditioned by the ecology of reproduction have been neglected or but little attended to. Either they have been overshadowed by the practical necessity of creating a workable system, or their study has lagged because of the inadequacy or absence of the necessary techniques. In recent years, however, some systematists, augmenting the orthodox methods by others more suitable, have undertaken to analyze these phenomena. They have become interested not so much in the broader relationships which exist between species and between genera, relationships which can be inferred only from observation and on which no experimental attack is possible, but in the more intimate familial relationships of the individuals which comprise a species. By these studies it is hoped that they may peer beyond the end results of speciation and learn more directly its causes and course. They also believe that thereby a more satisfactory arrangement can be devised.

Several terms have been applied to such studies; they have been variously described as the "new" systematics, as biosystematics and as population genetics. These terms are awkward and are not wholly revealing. None has gained more than tentative acceptance despite the need for a term which can be generally applied. I am venturing therefore to propose the term *genonomy* to connote these laws of the blood relationship, coined from the Greek words  $\tau\omicron$  γένος (the race or offspring) and  $\delta$  νόμος (the law or ordinance). This term can be used in apposition to the term *taxonomy*, which can be defined as the laws of arrangement and employed to connote what Turrill has termed "alpha" taxonomy. If the need is felt for a more inclusive term to embrace both fields of ac-

tivity, I suggest that the term *systematics* be used in this broader sense. As employed at present it is somewhat ambiguous, but more or less synonymous with taxonomy. To illustrate concretely by a study in progress: "The Systematics of *Delphinium Hansenii*" would subsume both its taxonomy and its genonomy. The former would embrace the usual studies of arrangement: nomenclature, differentiation and description of the entities and their geographic distribution. The latter would embrace studies entailed by the familial relationships of individuals, such as their breeding structure, intraspecific variation and its distribution, ploidy, the investigation of certain natural hybrids and the relationship of the entities involved in the polyploids and hybrids.

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#### ISOLATION OF INFLUENZA A BY INTRA-ALLANTOIC INOCULATION OF UNTREATED THROAT WASHINGS

WE wish to report that in this laboratory it has been possible to isolate and identify influenza virus A from untreated, unfiltered throat washings by intra-allantoic inoculation of developing chick embryo. The Hirst red cell agglutination-inhibition test was used for identification.

During a current epidemic twenty untreated unfiltered throat washings freshly collected in 20 per cent. normal horse serum saline have yielded four positive agglutinations on the first passage. One of these was verified as Influenza A by the agglutination-inhibition test.

Details of further studies will be published later.

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## SCIENTIFIC BOOKS

### NATURALIST AT LARGE

*Naturalist at Large*. By THOMAS BARBOUR. 314 pp. Little, Brown and Company, Boston. 1943.

WE use the expression "emergent evolution" to designate apparent mutations, which are really due, not to any change in the germ-plasm, but to a new combination of genes, giving a result which may be as wonderful as it is unforeseen. We must suppose that the elements which, coming together in the right manner and proportion, gave us Thomas Barbour, existed in his ancestors, even in those remote ancestors who would now be called savages. We are filled with

a sense of wonder and mystery when we think of these early origins, destined to find their highest significance in a future then remote. If we ask what these elements were, we find the answer in Barbour's book. An intense curiosity about the phenomena and significance of animal life, a desire to discover facts hitherto unknown, a very keen sense of the beauty of nature, a remarkable capacity for friendship—all these faculties, separately or in combination, must have served Barbour's ancestors well, but it was a happy chance that brought them together in a single outstanding individual. But even so, nurture had to be added to