
Book reviews

Population Genetics and Molecular Evolution (Papers Marking the Sixtieth Birthday of Motoo Kimura). Edited by TOMOKO OHTA and KENICHI AOKI, 1985. Tokyo: Japan Scientific Societies Press and Berlin: Springer-Verlag.

Most population geneticists would agree that, subsequent to the foundations laid by Fisher, Haldane and Wright, Motoo Kimura has contributed more to the theoretical development of their subject than any other. There would be no controversy about the importance of Kimura's mathematical analyses of finite populations or of his neutral theory of molecular evolution, but there is still heated debate about the generality of the neutral theory. Thus he has contributed a major body of knowledge and been a major stimulus to the collection and interpretation of new knowledge. This volume reports a conference held in Japan to honour Motoo Kimura's sixtieth birthday on 13 November 1984. Both the titles and the authorship of the papers illustrates Kimura's influence: many are contributed by notable Japanese population geneticists, working at home or abroad, and it is Kimura who has made population genetics a fashionable science in Japan.

Several of the papers are essentially biographical. In particular there is a memoir by Kimura explaining how he became interested in population genetics and eventually went to study with James Crow at Madison. Kimura's formal training was in plant cytogenetics; his mathematics was largely self taught, stimulated by a desire to read Wright's papers, notably that of 1931. (Another account of this appears in Provine's recent biography of Sewall Wright.) Crow contributes two chapters, one some anecdotes on Kimura, the other a discussion of the scientific standing and influence of the neutral theory. Apparently after Kimura reported his Ph.D. work at the Cold Spring Harbor Symposium in 1955, Wright stood up to pay him the compliment 'that only those who had tried to solve such problems, as he had, could appreciate the magnitude of Kimura's work'.

The 25 or so scientific papers included report a whole range of studies, some being essentially reviews, others reports of new work. They give a broad

coverage of current problems in population genetics and molecular evolution, but not surprisingly, there is little on selection. A few papers involve very formal mathematics, but the rest should be accessible to the numerate population geneticist. With the exception of a few of the Japanese, the authors are well known.

Only a few papers can be mentioned, so as to give the flavour. For example, Ohta reviews her elegant analyses of variation in multi-gene families, Nei his group's work on human molecular evolution, Mukai his analyses of neutral populations of *Drosophila* and Ikemura discusses codon usage. Kimura himself analyses the fixation time of slightly deleterious mutants at one and two loci. Among the non-natives, Watterson discusses estimation of divergence times between species and Charlesworth the evolution of transposable elements. There are two interesting papers using bacteria as a model: Selander discusses enzyme polymorphisms and Hartl selection in chemostats. The whole volume has been put together well by the editors Tomako Ohta and Kenichi Aoki, and should serve either as an introduction to newcomers or as a review and development of a large component of population genetics.

Finally, I shall quote from the science writer Nigel Calder, who contributes a chapter: 'During the preliminary work [in 1972 on a TV programme on evolution], the BBC producer and I were...with John Maynard Smith and Richard Lewontin...I remember Maynard Smith saying to Lewontin; "I wonder if we should tell them about Kimura". The two evolutionists looked at each other doubtfully, as if wondering whether to burden the BBC with such a controversial person.' They did, to the subsequent consternation of Ayala and Dobzhansky!

This is a nice book. It will tell you something about Kimura as a person. It will tell you much about the influence he has had through the work of others.

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