

## OBITUARY

PROFESSOR PHILIP M. SHEPPARD, D PHIL, FRS (1921-1976)

Philip Sheppard's most enduring human achievement was to apply his interest in the workings of natural selection to the solution of a medical problem: by considering the way natural selection operates on blood groups through the interactions of mother and foetus, he and Sir Cyril Clarke invented and then successfully developed the 'Liverpool jab' which prevents rhesus haemolytic disease of the newborn, up to now a major cause of miscarriage, infantile death, and brain-damaged children.

Professor Sheppard's research in evolution was very much in the Darwinian tradition: a blend of experimental science and natural history which greatly valued the accumulated wisdom of naturalists, both amateur and professional. He thought of Lepidoptera as extremely valuable research tools in this respect, and used them more than any other group: in contributing to evolutionary biology by using Lepidoptera he contributed immensely to the field of lepidopterology, in which his monumental achievement (again mainly in collaboration with Sir Cyril Clarke) has been the elucidation of the genetics and evolution of mimicry, chiefly in three of the extraordinary polymorphic *Papilio*, now rounded out by studies of *Hypolimnas* and (posthumously) of *Heliconius*. This work has been a brilliant confirmation and extension of the theories of mimicry propounded by A. J. Nicholson, R. A. Fisher, and E. B. Ford, with the last of whom Sheppard did his doctoral research in Oxford (taking a D Phil in 1951) after serving during the second world war first in the RAF (Volunteer Reserve) and then as a prisoner of the Third Reich (he used to say, when lecturing on warning coloration, that what a man regarded as palatable depended on how hungry he was).

His first studies included a now justly famous demonstration (in collaboration with A. J. Cain) that characteristics which most biologists thought of as trivial (in this case the colour and striping of the shells of terrestrial snails) could be of considerable adaptive importance to the organism and could be subject to detectable natural selection. This aspect of his work has been the one most widely followed by other workers, Cain and he having founded in effect, a college for the study of micro-evolution in snails. His book, *Natural selection and heredity*, which integrates this work into that of the 'English' school of evolutionary genetics, has been widely used by students.

Sheppard spent some time on fieldwork, research and teaching in South East Asia, the United States, Finland, Trinidad, Brasil and other parts of the neotropics; most of his work was carried out at the University of Liverpool, which he joined as a senior lecturer in 1956, becoming Professor of Genetics in 1963. There he embarked on his wonderfully fruitful collaborations with C. A. Clarke on the genetics of people and of butterflies. He was elected to a Fellowship of the Royal Society in 1965, and was awarded the Darwin Medal in 1974.

During his long fight against leukaemia his abnormal energy and enthusiasm for scientific enquiry continued with no noticeable diminution. Much work remains to be published by colleagues: the appended bibliography (which is probably incomplete even for earlier works) shows an outline of his achievements.

## Publications of P. M. Sheppard

1950. Cain, A. J. & P. M. Sheppard. Selection in the polymorphic land snail *Cepaea nemoralis*. *Heredity* 4: 275-294.
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