

5

Molecules are not Enough

This book contains a collection of essays about biology, most of which have been published before, in varied and often inaccessible places, together with a new concluding chapter on dialectics. The authors have at least four things in common: they are Harvard professors, they have made distinguished contributions to the theory of ecology and evolution, they are dialectical materialists, and they write with wit and insight. Their thesis is that their philosophy is a valuable aid in the practice and understanding of biology. It is not only that Marxism helps in analysing the history and sociology of science; if you are a working biologist, they are saying, Marxism will help you to plan and to interpret the results of research. Crudely, Marxism is good for you. They argue that their own work has been helped by their philosophy. The claim is not only brave but necessary: I would not take them seriously unless they were willing to make it.

I have known and admired both authors for thirty years. During that time, I have worked on many of the same problems that fascinate them. More relevant, I too have been deeply influenced by Marxism, although in my case the start of my second career, as a biologist, coincided with a growing

disillusion with communist politics, and to a lesser extent with Marxist philosophy. Inevitably, therefore, this review is in part autobiographical: it is a debate with a past self.

Any discussion of the value of dialectics in biology must take in Lysenkoism, and it might as well start there. Lysenko is the millstone round the neck of the dialectical biologist. The acceptance of his views, under Party pressure, caused Russian biology damage from which it has not yet recovered, even thirty years later. Levins and Lewontin address these events, as they must. They do not (unlike some Maoists) claim that Lysenko was right: 'Far from overthrowing traditional genetics and creating a new science,' they write, Lysenkoism 'cut short the pioneering work of Soviet genetics and set it back a generation. Its own contribution to contemporary biology was negligible.' They also recognise that Marxist arguments were used to support Lysenko: 'we cannot dismiss the obviously pernicious use of philosophy by Lysenko and his supporters as simply an aberration. . . . Unless Marxism examines its failures, they will be repeated.'

However, they point out, correctly in my view, that Lysenkoism is not to be explained merely as an error of Marxist philosophy, or as a crime committed by a bureaucratic government headed by a paranoid lunatic. The state of Soviet agriculture, the position of academic genetics at that time, the class differences between academic geneticists and agronomists, and the political reactions to collectivisation and to the German invasion, all contributed. It was, they argue, a misuse of Marxism to apply it in support of Lysenko: 'Dialectical materialism is not, and has never been, a programmatic method for solving particular physical problems.' Instead, they suggest that the philosophy provides 'a set of warning signs' against theories that are too narrow, mechanical or abstract.

Now I don't think this will quite do. To see why, one must first understand why at that time Marxists saw Mendelian genetics as undialectical. The orthodox view was that genes influence development, but are themselves unaltered in the process, and hence that the 'Lamarckian' process of the inheritance of acquired characters is an impossibility. Hence the gene is a metaphysical and undialectical