SUMMARIES OF ARTICLES

The History of Ideas Revisited

John C. GREENE

The mechanical view of nature was a fusion of Pythagorean-Platonic, Atomist, and Judaeo-Christian conceptions of nature. In its dynamic Cartesian form it undermined the static Christianized Aristotelianism of Linnaeus and Cuvier and the Platonism of Naturphilosophie and gave rise to the idea that living forms, including man, were products of a law-bound system of matter in motion. But evolutionary theory introduced ideas of progress, struggle, chance, individuality, and mind-in-nature that were incompatible with a mechanistic conception of nature, thus creating a tension in evolutionary thought that remains unresolved to the present day. This tension is illustrated from the writings of Darwin, Julian Huxley, Ernst Mayr, and others, including some Marxian biologists.

The Death of Darwin ?

Ernst MAYR

John Greene's claim that Darwin's theories and ideas are obsolete, rests on misunderstandings. In philosophy and in the history of ideas Darwin was a great innovator and it completely misinterprets his thought to consider him a representative of the Galilean-Cartesian tradition. By introducing population thinking Darwin liberated us from the Platonian essentialism. Evolutionary progress for the Darwinian is not a teleological process, but the description of the adaptive elaboration of organisms from the simplest bacteria to highly complex multi-cellular organisms with a central nervous system and parental care.

All of Darwin's major theses have been confirmed by modern evolutionary biology. Indeed, Darwin's thought is still very much alive.

Intervention

François JACOB

Professor François Jacob agrees with Ernst Mayr in considering that Professor Greene does not understand the true nature of Darwinism.

Commentary on Greene and Mayr

Stephen Jay GOULD

The differences existing between Greene and Mayr on their interpretation of Darwinism are briefly commented upon here : two main reasons are explained to elucidate the disagreement between the author and Greene.

The Future of Darwinism and Synthetic Theory Charles DEVILLERS
(« Neodarwinism »). *A Reply to J. C. Greene.*

J. C. Greene's criticisms of the structure of Darwinism and the so-called Neodarwinism are almost exclusively founded on a lecture of the writings of Darwin and J. Huxley. Several authors among the most recent ones are practically ignored.

Contrary to J. C. Greene's conclusions the main basis of the Synthetic Theory are sound and the Theory still plays an important role in our understanding of the process of evolution, even though it has to evolve to keep pace with the progresses of our knowledge in the molecular genetics and in the genetics of development ; on the other hand it has to revise the real importance of Natural Selection and adaptation in the realization of evolutionary change.

Some of J. C. Greene's critics concerning the use and abuse of a certain vocabulary with anthropomorphic connotations are worth mentioning such as : progress in the course of evolution ; perfection in adaptation ; existence of lower and higher groups in classification... Actually, the history of the organic world can be completely described with no recourse to the term « progress » as it was and is still too largely used. Evolution from Bacteria to Insects or Vertebrates is a process of « complexification » in structures as well as in functionings along with an increasing capacity for occupation of an increasing number of environments (ecologic niches). In this restricted, non-anthropomorphic sense we may speak with J. Huxley of a progress which is in no way regular and continuous.

Concerning the role of Natural Selection, it is the only system of forces whose action can be observed in natural as well as in experimental conditions.

However, that does not imply that Selection would be the all powerful directing force of evolution. We have to take into account these constraints to evolutionary change as generated by the building (ontogenesis) of organisms.

As enunciated by some recent authors « organism largely controls its own evolution ».

With these considerations in mind, along with some other ones we may be confident of the future. An improved theory of the evolutionary mechanics is being built, not on the ruins of Darwinism and Synthetic Theory but on these sound foundations as established by Darwin and the « Fathers » of the Synthetic Theory.

Reflections upon a controversy

Jacques ROGER

The author follows John Greene's analysis of the relationship between mechanical philosophy and teleology. In the second section of the paper, he tries to analyse the relationship between Darwin's thought and modern Darwinism. Finally he discusses the problems of progress, human values and teleology in evolutionary theory. As a conclusion, he considers John Greene's analysis as a legitimate one, but the fate of a scientific theory depends on scientific work, not on historical analysis.