

During the summer of 1959, at the University of Oklahoma, I will be engaged in a National Science Foundation program for high-school science teachers. The National Science Foundation course (which is one of several to be offered at the university at that time) is on cosmogony and evolution. It deals with the scientific theories of the origin and development of an expanding physical universe; the appearance of the basic "particles" (hyperons, protons, electrons, and so on); the emergence of atoms, molecules, and extragalactic nebulae; the stars and the planetary systems; the formation of the earth; and the emergence and evolution of life. In the course of this project we shall discuss scientific method and shall present the astronomical, physical, chemical, geological, biochemical, and biological details in such a way as to tie them in meaningfully with the history of the universe and of our earth.

We feel that among young people are many who may be readily motivated by the questions: "How did it all begin?" "How did the stars come to be?" "Where did the earth come from?" "Where and how did life arise?" With such a central theme, it becomes reasonable to hope that the technical and often boring details of mathematics and the specialized natural sciences will become more significant and interesting to the highschool student; the parts of knowledge will be acquired within a meaningful whole that should be more ego-involving for the student.

We have selected about 35 high-school science teachers, both men and women, from all parts of the nation (the majority are from Oklahoma) and ranging in age from the mid-20's to the early 50's.

We shall utilize the help of an astronomer, a biochemist, and a geneticist. The institute will be given jointly by David Kitts, a geologist-paleontologist, and by me (a philosopher of science and physicist). We have had consultation with Sidney Fox of Florida State University on the chemical origins of life, and we plan to demonstrate (ultimately for highschool science-teaching purposes) the emergence of amino acids and so on under conditions simulating the supposed natural conditions on earth prior to the origin of simple life forms.

We shall utilize all available audiovisual aids, including Atomic Energy Commission materials on atomic and nuclear theories, and astronomical observatory facilities, laboratory demonstrations, and scientific charts and literature on relevant subjects. Our highschool teachers will help us work out the best ways of implementing our program in the high schools. Obviously, we are going to need a great deal of help from the high-school administrators, and perhaps from government agencies, if this program is eventually to be deemed valuable enough to be introduced into the high-school teaching system.

CARLTON W. BERENDA Department of Philosophy, University of Oklahoma, Norman

## **Flycatchers and Warblers**

In the legend to Fig. 4 of D. J. Struik's interesting historical article [Science 129, 1103 (1959)], illustrations 2, 3, and 4 on the plate reproduced from Alexander Wilson's American Ornithology are described as "flycatchers." It is true that Wilson listed these birds in the genus Muscicapa, but this name is now confined to the flycatchers of the Old World. The birds portrayed on Wilson's plate 26 are members of the New World family Parulidae, the wood warblers. Their resemblance to the true flycatchers is superficial and has resulted from convergent adaptations to the flycatching habit.

It may be of interest to note that the three warblers shown on this plate are members of a genus named *Wilsonia*, in honor of the artist, by the great 19th-century ornithologist Prince Charles Lucien Bonaparte, nephew of Napoleon I. Illustration 4 on the plate is *Wilsonia pusilla* (Wilson), commonly called Wilson's warbler.

KENNETH C. PARKES Carnegie Museum, Pittsburgh, Pennsylvania

I am grateful to Parkes for his correction, which will be helpful to all who have wondered what kind of "flycatchers" were represented in Fig. 4 of my article.

It may also interest shell collectors to know that the Fusus corneus of Fig. 2 is now called Colus stimpsoni (Mörch) and the Fusus cinereus, Urosalpinx cinerea (Say), for which information I have to thank W. J. Clench of Harvard University.

I also received a letter from Thomson King, director of the Enoch Pratt Free Library of Baltimore, Maryland, who objected to my expression "Robert Fulton's inventions" for the successes of the steamboat; he stressed the merits of James Rumney and James Fitch and concluded with "It is rather ironical that Fulton actually invented and gave a demonstration for the English Admiralty of a submarine, hand driven. Now thousands of people believe he invented the steamboat and apparently no one knows that he really did invent the submarine." D. J. STRUIK

Massachusetts Institute of Technology, Cambridge, Massachusetts