H. Burr Steinbach is an experimental zoologist and general physiologist who took his Ph.D. degree under Heilbrunn at the University of Pennsylvania in 1933. He conducted postdoctoral research at the University of Chicago and at the University of Rochester as a National Research Council fellow; then, between 1935 and 1946, he taught at the University of Minnesota, Columbia University, and Washington University, St. Louis. In 1947 he returned to Minnesota as full professor and remained there for 10 years, with a sabbatical as a Guggenheim fellow in England and at the University of London in 1956. In 1957 he returned to the University of Chicago as chairman of the department of zoology.

For many years he has spent the summer at Woods Hole, Mass., where he has devoted himself to research at the Marine Biological Laboratory. He has been as intimately connected with the Woods Hole laboratory as with any institution at which he has taught during the academic year, and he is a trustee of the laboratory and a member of the corporation.

Steinbach has fulfilled several significant special assignments. In 1953–54 he took a year's leave from the University of Minnesota to serve as assistant director for biological and medical sciences at the National Science Foundation in Washington. He has been editor of the *Biological Bulletin* and president of the Society of General Physiologists. He is now president of the American Society of Zoologists. Further, he is chairman of the Division of Biology and Agriculture of the National Academy of Sciences–National Research Council, where his term expires on 30 June 1960. He is not a newcomer to this division, having played an important role in the organization of the American Institute of Biological Sciences, which originally was a part of the division. At present he is also a member of the National Science Foundation's Divisional Committee for Biological and Medical Sciences.

H. Burr Steinbach

His research papers have ranged from studies on the ontogeny of enzyme systems and intracellular localization of enzymes through acclimatization phenomena in fish to active transport of ions across cell boundaries and the origin of bioelectric potentials. His recent interests are concerned with the general biochemistry and ecology of the alkali metals and their compounds. He has also written on some aspects of the history of science.

The varied interests and activities of these two men, coupled with their editorial experience, make them valuable additions to the Board.

Dupont Grants

Grants totaling nearly $1.2 million have been awarded to 139 universities and colleges in the Du Pont Company's annual program of aid to education. The entire program is for fundamental research by universities and for strengthening the teaching of science and related liberal arts in the 1959–60 academic year.

Du Pont nearly doubled its grants for unrestricted research in the physical sciences because of the growing need for this type of work, which the company has been supporting since 1949, and because of the flexibility of this form of support. These funds may be used for fundamental research in any way the institutions wish, including the support of graduate students that the company has previously aided through a separate series of postgraduate fellowships started in 1918. The universities determine the research to be undertaken and are free to publish the results.

For this work, the company gave $450,000 to 36 universities in grants ranging from $5000 to $20,000 for fundamental research in chemistry, chemical engineering, physics, mechanical engineering, and metallurgy. An additional $27,000 was awarded for 18 summer research grants of $1500 each. The purpose is to enable individual staff members of 17 universities to undertake research of their own choosing in chemistry and engineering during the summer.

As has been the case in recent years, the largest part of Du Pont's program is to help strengthen the education of scientists and engineers. Grants totaling $696,000 were awarded to more than 100 colleges and universities to support the teaching of science and mathematics as well as other subjects. These awards include:

1) $4000 each to 76 colleges to help maintain their records of strength in chemical or technical education. Each grant provides $2500 for chemistry teaching and $1500 for advancing the teaching of other subjects.

2) $4000 each to 23 major universities to help strengthen undergraduate teaching of courses that contribute to scientific and engineering education.

3) $3000 each to 12 medical schools to support education and research in biochemistry.

4) $184,000 for 46 postgraduate teaching assistantships, chiefly in chemistry, shared by 42 universities.

5) $80,000 for fellowships and scholarships for prospective high school teachers of science and mathematics. This includes 26 postgraduate fellowships at seven universities and 54 summer scholarships for undergraduates at six colleges.

Grants for other university work round out the total program. The total increase over the grants for the present academic year is about $45,000.

Space Handbook

A 250 page document, titled *Space Handbook: Astronautics and Its Applications,* has been made available by the House-Senate Committee on Astronautics and Space Exploration. The booklet, in its four parts and 29 chapters, covers in outline the history of thinking and work in regard to space activities, scientific and technical considerations in regard to current work in this country and others, and possible future uses for space vehicles operating at and beyond the periphery of the earth's gravitational field. The work was done by the Rand Corporation of Santa Monica, Calif., a private, nonprofit research organization specializing in study and evaluation of matters affecting national security. John W. McCormack, chairman of the committee and representative from Massachusetts, requested the study to aid the new Congress, the new congressional Committee on Science and Astronautics which succeeds his committee, and the public in gaining the best possible appreciation of the state of astronautics and the future trends.

In addition to an introduction, the document has sections on technology (covering such subjects as vehicles, propulsion systems, power sources, communication), on applications (presenting the use of satellites for observation, meteorology, navigation, and exploration), and on astronautics in the United Kingdom and the People's Republic of China.

The Space Handbook can be obtained from the Superintendent of Documents, Government Printing Office, Washington 25, D.C., for 60 cents.

"Giant" Fossil Man

During the past quarter of a century there have been repeated discoveries in Southeast Asia of very large fossil primate teeth of the Pleistocene epoch. These have been attributed to truly gigantic animals by some students. Von Koenigswald (1935, 1939) thought the huge teeth which he discovered in Hong Kong "drugstores" (= *Gigantopithecus*), Kwangsi Province being their probable provenance, belonged to a giant ape, whereas he regarded the two jaw fragments with teeth which he discovered at Sangiran, Java (= *Meganthropus*), as those of a giant protohominid. Weidenreich (1945, 1946) went even further, concluding that both *Gigantopithecus* and *Meganthropus* were not only giants but actually hominids on the line leading to true man. On the basis of tooth size, he estimated that the Javanese "giant" was much bigger than any living gorilla and that the Chinese "giant" was correspondingly bigger—one-and-one-half times as large as the gargantuan Javanese, and twice as large as a male gorilla. In this connection, it may be noted that adult male gorillas are known to attain a weight of 600 or more pounds. Weidenreich postulated, therefore, that the ancestors of man were giants—this standing in contrast to the general paleontological rule that ancestral forms tend to be smaller than their descendants. Pei (1957), referring to a recently discovered jaw with teeth from Luntsai Mountain in Kwangsi, South China, which is almost certainly a specimen of *Gigantopithecus,* reverted to von Koenigswald's idea of a giant ape which he estimated as having had a stature of "some 12 feet." Large-toothed forms, notably *Paranthropus crassidens,* also occur among the australopithecines; but no serious claims of gigantic body size have at yet been made for these South African hominids.

The crux of the problem involves the question of whether tooth-size is in any way indicative of body-size. Von Koenigswald, Weidenreich, and Pei have all assumed that there is a positive correlation; but of this they have had no proof. With this in mind, S. M. Garn and A. B. Lewis [*Am. Anthropologist,* **60**, 874 (Oct. 1958)] compared tooth size with stature among several groups of living men and between living men and certain other, fossil hominids (*Pithecanthropus; Sinanthropus;* and three australopithecines—*Paranthropus robustus, P. crassidens,* and *Plesianthropus*). They found little indication of a marked positive correlation between tooth size and body size in living men, even when allowance is made for nutritional differences. Evidently, therefore, these dimensions are effectively independent in various human races, as they are in pigs (Herre, 1951) and in various breeds of dogs (Starck, 1954). Moreover, it was found within a population that tooth size is unrelated to body size and therefore again nonpredictive. The tallest human populations actually possess teeth that are among the smallest. Similarly, the available data for the fossil hominid forms—for which stature was estimated from limb-bone fragments—fail to support the concept of a simple proportionality between size of teeth and size of body; instead, they reveal a negative relationship.

Thus, there is no indication that tooth size is a clue to body size in either *Homo sapiens* or nonsapient hominids and, consequently, no evidence to support the notion that the Chinese and Javanese megadonts were giants. Indeed, the authors conclude that if the australopithecines are any guide the ape from Luntsai Mountain had a stature of scarcely more than 5 feet. Garn and Lewis suggest that "it may well be that the forms with giant teeth, both from Africa and Asia, had the task of grinding nutrients and calories from tough and bulky vegetable material, but without the gastro-intestinal adaptations of herbivores." This might account for a disproportionately large dentition.—W.L.S., JR.

Films

Two new science films have been announced. The Peabody Museum of Harvard University has released "The Hunters," a 71-minute motion picture of anthropological interest. It is the first of a series of films on the South African Bushmen. The pictures were taken by the Peabody Museum of Harvard University–Smithsonian Institution Kalahari Expeditions, from 1950 through 1958. Arrangements can be made for either its purchase or rental, in color or black-and-white, by writing to Contemporary Films, Inc., 267 W. 25 St., New York 1. N.Y.

"Time," a new science film for classroom use, has been released by the Audio-Visual Center, Indiana University, Bloomington, Ind. Through live photography, models, and animation, the film portrays scientific time determination, timekeeping, standard time zones in the United States, Daylight Saving Time, Greenwich Time, and the International Date Line. Teachers of science, mathematics, and geography in grades five through nine will find the film useful in teaching units concerned with time. It can also be used in beginning astronomy courses in high schools and colleges.

Experimental College

An experimental college will be established by Wayne State University, Detroit, Mich., with the assistance of a $700,000 grant from the Ford Foundation. The grant will help finance the planning and initial evaluation of the college, which will open in September 1959. It is being formed to develop an improved program in general education. Clarence H. Faust, vice president in charge of the foundation's education program, commented: "During the past quarter of a century, there have been practically no new experimental institutions concerned with further development of undergraduate programs of general education."

The major innovation of the new college is that all students will be required to take work in the natural sciences, social sciences, and the humanities throughout their four undergraduate years. Within these areas, the customary division of subjects into academic courses will be largely discarded. Instead, traditional academic studies will be combined to form courses covering basic fields of knowledge. Training in English composition will be an integral part of all studies in the curriculum.

The college will also experiment with new arrangements for the better utilization of faculty time and for improvements in the conditions of learning. Courses will be taught through a combination of large lecture classes, small discussion groups, and independent study.

The college will stress independent study. In the senior year, students will participate in a colloquium (discussion-group course) in which they will pursue about half their studies without direct instruction from the faculty. Since the amount of time students spend on independent study will increase as they move through the program, instructional costs will be highest during the freshman year and lowest during the senior year—the reverse of the prevailing instructional-cost pattern.

The college will inaugurate its program with the freshman class to be admitted in the fall of 1959. As these students advance, the college will initiate other stages of its program. At the end of a 4-year period, it will be conducting a full college course and will have an estimated enrollment of about 1200 to 1500 students.

The total cost for the first 5½ years of the college is estimated at $2,645,000.