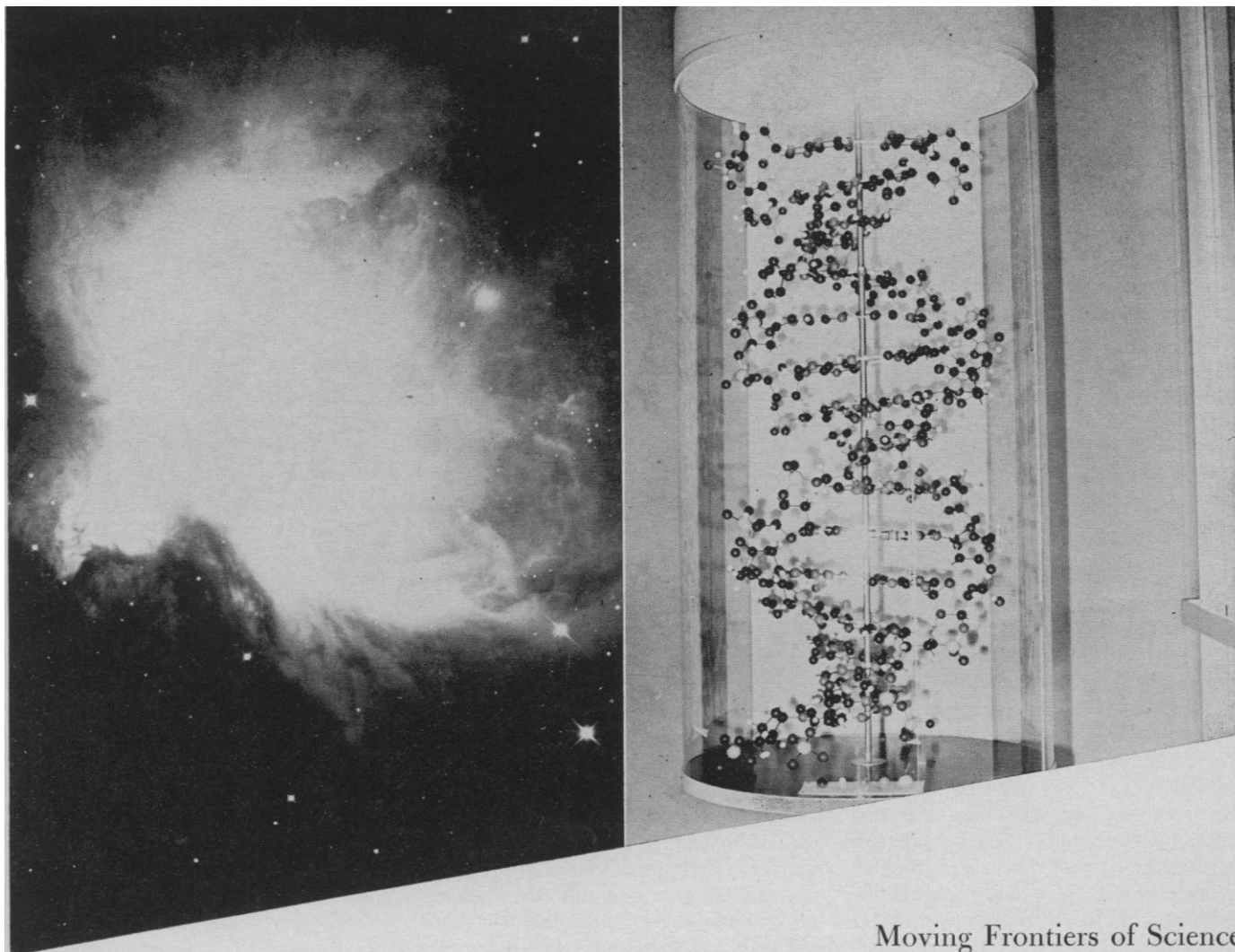




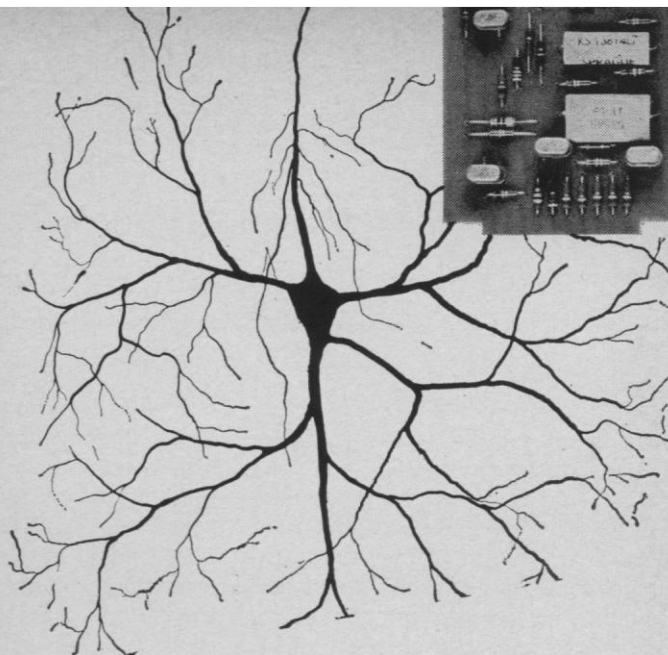
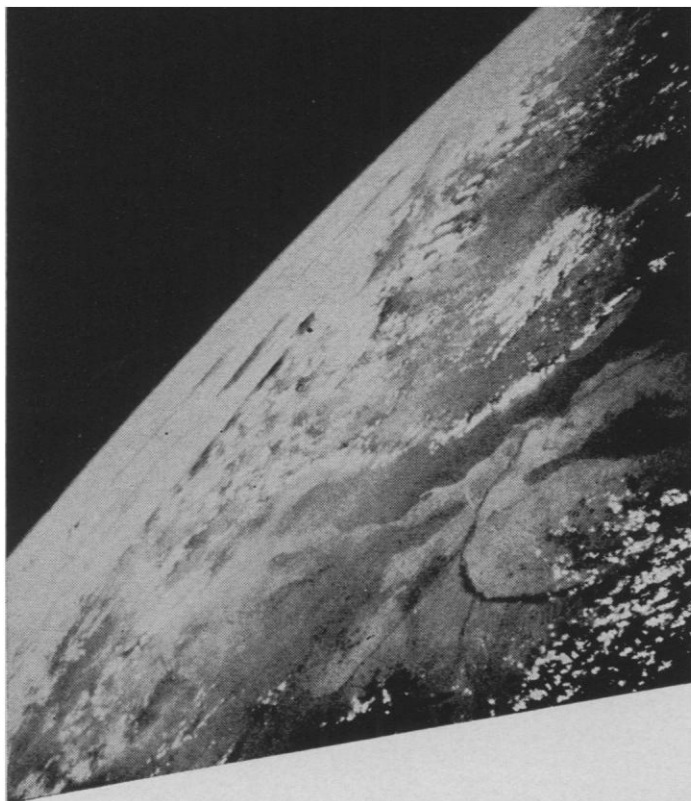
(Left to right) The Orion Nebula. Model of the DNA molecule. Center of Africa taken from Mercury-Atlas 4 spacecraft as it orbited the earth. Schematic drawing of a cortical neuron from a cat's brain ($\times 10,000$) and an artificial neuron (inset, about 60 percent of actual size). The artificial neuron is being used for research in hearing and seeing. [Picture credits, left to right: Official U.S. Navy Photograph, the Franklin Institute, National Aeronautics and Space Administration, Bell Telephone Laboratories.]

One of the features of the eighth Philadelphia AAAS meeting (26–30 December) will be “Moving Frontiers of Science,” a series of specially planned lectures. The first session of this year’s symposium (26 December) will cover one of the world’s newest frontiers when Homer E. Newell, director of the Office of Space Sciences, National Aeronautics and Space Administration, speaks on “Space Science: Past, Present, and Future.” In this new age of satellites, planetary probes, and manned space ships, Newell’s work is concerned with the interdisciplinary aspects of space science problems. Some of his objectives are “to investigate the earth and its atmosphere, and the influence of the sun on the earth; to study the nature and history of the solar system; to search for life in the solar system; to extend astronomical researches to new wavelengths; and to contribute to the study of cosmology.” His talk reviews the significant results of past activities, some of the future plans of

the space program, and the role of space science in the scientific community.

Speaking the same day on a subject closer to earth, Sterling B. Hendricks, chief scientist, Mineral Nutrition Laboratory, U.S. Department of Agriculture, chooses “Biological Timing.” Hendricks’ varied research activities, including photoperiodism, have resulted in discoveries about “biological clocks” in plants and animals. Such “clocks,” which tell plants when to bloom and animals when to change to their winter fur, are evident in all living things. Last summer Hendricks was invited to speak in Canberra, Australia, at the opening of Ceres, the world’s newest phytotron. These phytotron laboratories, used for the study of plant growth under a wide range of closely controlled climatic conditions, aid in the solving of problems related to nutrition, pathology, breeding, and genetics.

In addition to these space and earth problems, the frontier series will also cover man and his problems in basic research. William O. Baker, vice president-research, Bell Telephone Laboratories, will discuss the “Coupling of Independent Industrial Research and Science” (28 December). He will review the development of basic research studies as conducted by industry and later compare it with other resources for new science. Basic research in industry can claim a rich harvest. For example, the Solid State Physics Group at Bell continued independently work which had been stimulated by government programs during World War II. Their research on



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The AAAS will hold its 129th annual meeting 26-30 December.

the electrical properties of semiconductors led to the transistor, one of the major advancements in electronics. Nylon, petrochemicals, and the tungsten filament are just a few of the other by-products of basic research in industry.

As the final speaker in the series, Sydney Brenner of the Laboratory of Molecular Biology, Medical Research Council Laboratory (England), in his talk on "Perspectives in Molecular Biology," reports on deoxyribonucleic acid, or DNA. DNA, present in all living cells except red blood cells and certain viruses, claims its importance from the fact that it transmits hereditary information and supervises physical functions of all living creatures. Its significance is indicated by the fact that this year's Nobel Prize in Medicine and Physiology was awarded for the discovery of the molecular structure of this substance of heredity. Continued research on the coding of DNA may some day lead to the answers to a question which has always perplexed man—the origin of life.

"Moving Frontiers of Science" this year again reflects the aim of the AAAS meeting committee by presenting highlights from a cross section of the scientific world. This symposium, although celebrating its eighth anniversary at the eighth Philadelphia meeting, has been given under its present title only six times. It was initiated in 1955 at the Atlanta meeting when the then newly formed committee on AAAS meetings decided that a special program should be included which would be of importance to science as a whole. Thus, the first

such symposium, "Crisis in Science Education," was planned. Papers by Charles Dollard, a former president of the Carnegie Corporation of America, Arthur S. Flemming, then director of the Office of Defense Mobilization, and Alan T. Waterman, director of the National Science Foundation, stressed the importance to our national growth and security of stronger emphasis on science in our educational system. They noted that too few college students chose science as majors and the number of qualified science teachers was decreasing.

During the early years of "Moving Frontiers of Science" presentations, the scientific world was passing through another phase of its development. Space was replacing atomic energy as the most conspicuous field of scientific research.

Because of the worldwide competition in space, the general symposium compared the structure of science and scientific organizations abroad with those of the United States. The speakers discussed the pros and cons of each system, the differences existing among the systems, and how such differences were caused by the geographical, institutional, and financial situations of each country. It was also pointed up that while all the national systems were "different enough, all nevertheless rest on the basis of a common assumption of freedom."

More detailed information on the Philadelphia meeting will be published in *Science* for 7 December. Complete details will be available in the General Program, to be published early in December.