

ceived to help pay for its computer.

One purpose of the current study is to determine the costs of setting up terminals and communications systems, and to balance these costs against possible savings for each school. Another objective will be to estimate the benefits that might result from sharing the facilities as compared with the cost of further development of the individual computing centers.

A first report of recommendations is due in about six months, and the terms of the NSF grant set an 18-month time limit on the study.

Concurrently with the computer study, the three schools will look into cooperative library operations—the goal of this inquiry also being increased efficiency and economy. It will be a two-year study funded by a \$126,500 grant from NSF. When it is completed, a written report will be made available to other institutions interested in similar sharing.

Sloan Fellowship

James E. Gunn, assistant professor of astronomy, has received an Alfred P. Sloan Research Fellowship for 1972. Gunn is noted for his studies of quasars and for research that seems to support the validity of the red shift as a yardstick for measuring distance in the universe.

Sloan Fellowships are designed to make possible advances in basic research by young scientists. Gunn, 33, is one of 79 scholars chosen this year from among nearly 600 nominated by their senior colleagues in 46 colleges and universities. Twenty-two other members of the Caltech faculty have received the award since the program was initiated in 1955.

The grants—which average \$8,750 per year for two years—may be used for a number of different purposes: for example, purchase of equipment and supplies; for support of technical and scientific assistance, predoctoral and postdoctoral fellows, and summer work; and in payment for computer time and for relief from teaching duties.

J. Holmes Sturdivant 1906-1972

J. Holmes Sturdivant, professor of chemistry, died in Pasadena on April 21 at the age of 66. With his unmatched genius for design, Sturdivant helped make Caltech the mecca of theoretical and experimental structural chemistry it has been for the past 50 years. The principal experimental technique was X-ray crystallography, and he, more than any other person, created the instrumentation required to probe for the positions of atoms in crystals of a wide variety of chemical and biological materials.

For many years, Holmes taught courses in X-ray crystallography, and among his students were many men who became giants in the field of structural chemistry. Through his undergraduate courses in instrumental analysis, he emphasized the importance of understanding the basic principles of each instrument.

In his early years at the Institute, Sturdivant worked closely with Arthur Amos Noyes. The two men found a remarkable community of personality traits and ideas, sharing an almost reverent attitude toward precise, logical thinking and careful execution of experiments. Along with the late Robert Corey, Sturdivant produced the experimental facts which stimulated the advances made by Linus Pauling and other structural theorists of the 1930's and 1940's.

Holmes Sturdivant was Dr. Pauling's first graduate student. Pauling recalls, "He showed great ability in his work and was responsible in large measure for the development of structural chemistry at the Institute."

Ernest H. Swift, who succeeded Pauling as division chairman in 1958, recognized his contributions toward the administrative operation of the laboratories by naming Sturdivant executive officer for the division. Swift and John Roberts, chairman from 1963 to 1968, agree that "only one who has been a chairman can fully appreciate how indispensable Holmes Sturdivant was to the personnel and the many activities within the division."

Making Caltech a desirable place for the men who have made the Institute a world center for chemical science was no mean task in a place remote from the nation's centers of chemical industry and

most of the other centers of excellence in chemistry. Chemists all over the country have envied Caltech because of the quality of its laboratories, the mechanical and glass shops, the library facilities, the stockrooms, and the secretarial services. Sturdivant was the guiding influence behind creation of these indispensable adjuncts to productive scientific work.

The most obvious evidence of his skill was in the interior design of laboratories, particularly the Church Laboratory of Chemical Biology and the Noyes Laboratory of Chemical Physics. He also carried on a systematic and imaginative program for progressive rehabilitation of Gates and Crellin laboratories. Finally, in the last months of his life, he undertook a design project which was truly alien to his nature. Earthquake damage to the Gates Laboratory resulted in condemnation of the building. Financial stringency required functional replacement at minimal cost. The decision was made to construct a building to house undergraduate laboratory instruction under a painfully austere budget. Working with the architects, Sturdivant designed a building that will serve the instructional purpose, at least for the immediate future, and one that met the budget requirements. His humor is illustrated in his memo to me of February 23: "I suspect that the administration may ask you within a month your preference regarding the name of the new building. It is now known variously as the Chemistry Laboratory Relocation Building, Noyes Annex, Son of Noyes, and the Hovel. It would be mildly insulting to put anyone's name on it. Perhaps Laboratory for Undergraduate Chemistry would do, with the acronym LUC."

Gardening was one of Sturdivant's many interests outside Caltech. Some others were music and the ballet, and he was knowledgeable about both. His professional affiliations included membership in the American Chemical Society, the American Physical Society, and the American Crystallographic Association.

He is survived by his wife, Arletta, of Pasadena. It was his wish that no memorial services be held.

—George Hammond