Proceedings of the Board of Regents Meeting held on September 22, 1980

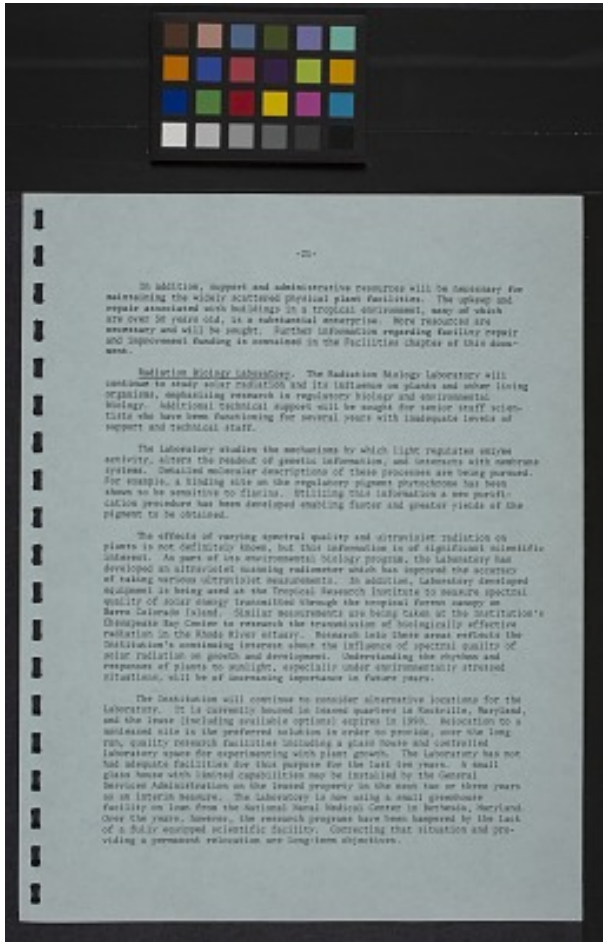
In addition, support and administrative resources will be necessary for maintaining the widely scattered physical plant facilities. The upkeep and repair associated with buildings in a tropical environment, many of which are over 50 years old, is a substantial enterprise. More resources are necessary and will be sought. Further information regarding facility repair and improvement funding is contained in the Facilities chapter of this document.

[[underline]]Radiation Biology Laboratory[[/underline]]. The Radiation Biology Laboratory will continue to study solar radiation and its influence on plants and other living organisms, emphasizing research in regulatory biology and environmental biology. Additional technical support will be sought for senior staff scientists who have been functioning for several years with inadequate levels of support and technical staff.

The Laboratory studies the mechanisms by which light regulates enzyme activity, alters the readout of genetic information, and interacts with membrane systems. Detailed molecular descriptions of these processes are being pursued. For example, a binding site on the regulatory pigment phytochrome has been shown to be sensitive to flavins. Utilizing this information a new purification procedure has been developed enabling faster and greater yields of the pigment to be obtained.

The effects of varying spectral quality and ultraviolet radiation on plants is not definitely known, but this information is of significant scientific interest. As part of its environmental biology program, the Laboratory has developed an ultraviolet scanning radiometer which has improved the accuracy of taking various ultraviolet measurements. In addition, Laboratory developed equipment is being used at the Tropical Research Institute to measure spectral quality of solar energy transmitted through the tropical forest canopy on Barro Colorado Island. Similar measurements are being taken at the Institution's Chesapeake Bay Center to research the transmission of biologically effective radiation in the Rhode River estuary. Research into these areas reflects the Institution's continuing interest above the influence of spectral quality of solar radiation on growth and development. Understanding the rhythms and responses of plants to sunlight, especially under environmentally stress situations will be of increasing importance in future years.

The Institution will continue to consider alternative locations for the Laboratory. It is currently housed in leased quarters in Rockville, Maryland, and the lease (including available options) expires in 1990. Relocation to a nonleased site is the preferred solution in order to provide, over the long run, quality research facilities including a glass house and controlled laboratory space for experimenting with plant growth. The Laboratory has not had adequate facilities for this purpose for the last ten years. A small glass house with limited capabilities may be installed by the General Services Administration on the leased property in the next two or three years as an interim measure. The Laboratory is now using a small greenhouse facility on loan from the National Naval Medical Center in Bethesda, Maryland. Over the years, however, the research programs have been hampered by the lack of a fully equipped scientific facility. correcting that situation and providing a permanent relocation are long-term objectives.



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