New York Botanical Garden–Research and Education

See Science, *22 September 1967, for details about registration for the tour to the New York Botanical Garden.*

"Erected for the New York Botanical Garden by the City of New York for the Advancement of Botanical Knowledge—1897–1899," appears on the cornerstone of the Museum Building, and sets in focus the basic and historic commitment of this institution to botanical research. The founder of the New York Botanical Garden, Professor Nathaniel Lord Britton of Columbia University, originally a geologist, was one of the most productive plant taxonomists of his generation, yet in staffing his new institution around the turn of the century, one of his early appointments was a plant physiologist, Daniel Trembly MacDougal. Britton's concept of a much wider spectrum of botanical research than was customary in the major botanical gardens of the world has been adhered to. In fact, the scope of research activities is broader today than it was 65 years ago.

Research at the New York Botanical Garden is supported by income from endowment, special gifts, and by grants from federal agencies, especially the National Science Foundation and the National Institutes of Health. Occasional support has been obtained from the Office of Naval Research, the Atomic Energy Commission, the Arctic Institute of North America, and others.

With a herbarium of more than 3 million specimens and one of the finest botanical libraries under one roof in the Western Hemisphere, the New York Botanical Garden presents outstanding facilities for research in systematic botany by its staff, graduate students, and visitors. For more than 20 years, Bassett Maguire, head curator, has specialized on the floras of tropical America, with especial reference to the great, flat-topped mountains of the Guayana Highland of northeastern South America. He has made or arranged more than 100 expeditions to these Mt. Roraima–type mountains, each with its unique flora. Maguire also conducts monographic research on the plant families Guttiferae, Rapateaceae, Theaceae, and Ochnaceae. In their geography, the field investigations of Howard S. Irwin, curator, on the Planalto of Central Brazil, and of Ghillean T. Prance, associate curator, on the Amazon Basin are neatly coordinated with those of Maguire. In addition, Irwin carries on monographic studies of the Leguminosae, especially of the genus *Cassia,* whereas Prance is a specialist on the tropical family Chrysobalanaceae.

Arthur Cronquist, senior curator, has worked for many years on the flora of the western United States and has contributed extensively to two major but still incomplete publications, *Flora of the Pacific Northwest* and *Flora of the Intermontane Region.* His monographic interests lie in the Compositae, which he has studied in the field throughout the United States and in Mexico.

Brother Alain Liogier, honorary curator of West Indian botany, is occupied with the island of Hispaniola, for which he plans to write a major flora. Caroline K. Allen, research associate, who is a leading authority on the Lauraceae, has traveled extensively in tropical America to see several genera of laurels in their native environment. She is now in Europe in order to investigate original and type specimens in various herbaria. Rupert C. Barneby, honorary curator of western American botany, whose monumental *Atlas of North American Astragalus* was published in the *Memoirs of The New York Botanical Garden* in 1964, is now completing a revision of the leguminous genus *Dalea.* Otto Degener, collaborator in Hawaiian botany, and his wife, Isa Degener, continue their botanical collecting and research for their *Flora Hawaiiensis.* Eugene Jablonski, honorary curator of tropical botany, has recently completed a definitive study of the Euphorbiaceae of the Guayana Highland and is now extending his work to the Amazon Basin and adjacent areas.

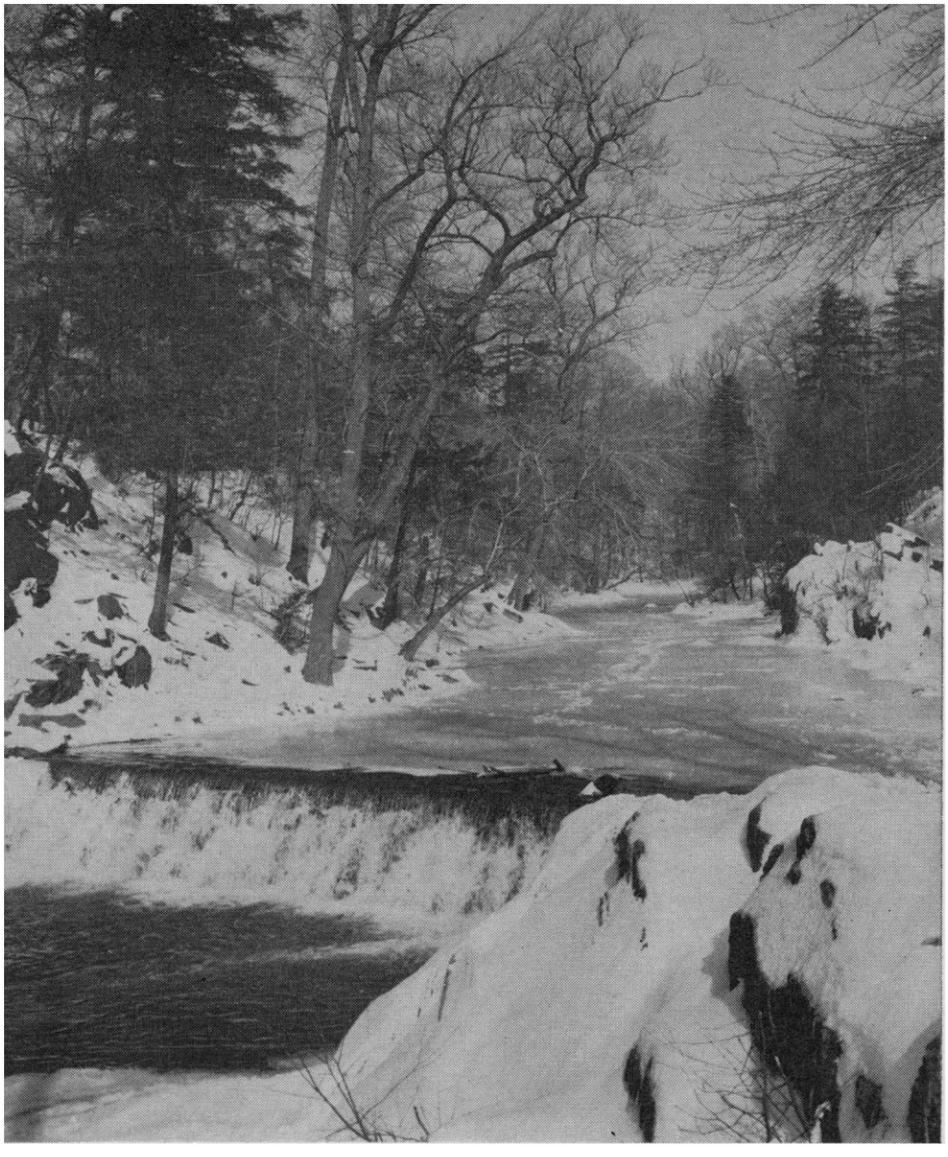
Tetsuo Koyama, curator, has brought to his monographic studies of tropical American sedges, the Cyperaceae, the current techniques of cytology, palynology, and anatomical studies, and background information. He has also collected and made field studies on Cyperaceae in Venezuela.

Herman F. Becker, curator of paleobotany, in addition to his responsibility for the paleobotanical collections, has done extensive field work and research on several Tertiary floras he discovered in Montana.

In the Cryptogamic Herbarium, Clark T. Rogerson, senior curator, conducts morphologic, cultural, and monographic studies on hypocreaceous fungi, the Hypocreales. William C. Steere, director, continues his field studies and research on bryophytes, with especial reference to the geographical distribution of Arctic and Antarctic mosses. He also looks forward to the resumption of cytological research on mosses. Mulford Martin, honorary curator of the Moss Herbarium, works assiduously at keeping the collections in order.

In the Research Laboratory, Marjorie Anchel, senior research associate, works on the chemistry of metabolic products of Basidiomycetes, especially the mushroom, *Clitocybe illudens.* From this fungus, Anchel has isolated and identified several remarkable compounds, including polyacetylenes. Alma A. Barksdale, senior research associate, who has been working for some years on sexual reproduction in the water mold, *Achlya bisexualis,* has completed the herculean effort of isolating an amount of hormone A sufficient for chemical study and identification by Trevor C. McMorris, senior research associate. Very recently (*Nature,* 15 July 1967), McMorris and Barksdale have indicated that hormone A, designated "antheridiol," is a steroid, McMorris has just returned from several months at the University of London, where he worked on the synthesis of antheridiol.

Richard M. Klein, who held for some years the post of Alfred H. Caspary Curator of Plant Physiology, resigned recently to accept a professorship in botany at the University of



Left: The Bronx River passes through the hemlock forest—the only unspoiled reminder of the former metropolitan New York Forest.

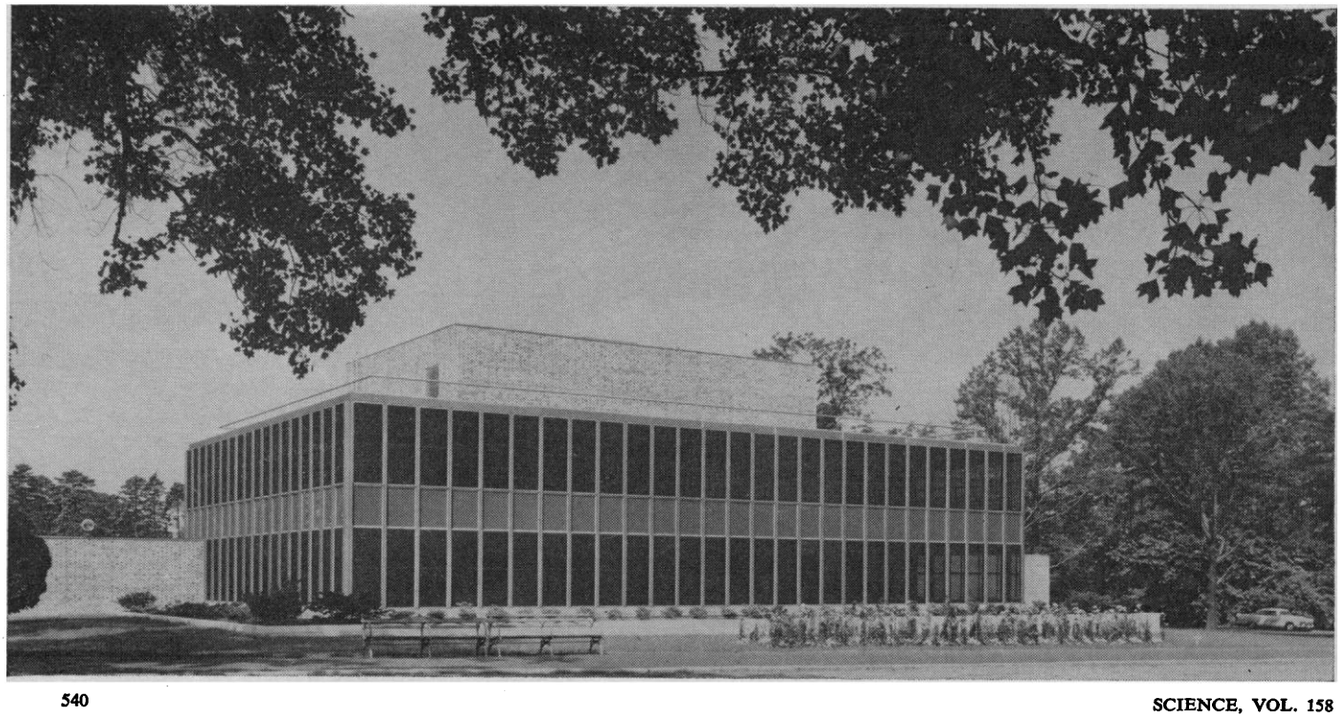
Below: The Research Laboratory provides modern facilities for wide ranging and highly active programs of investigation.

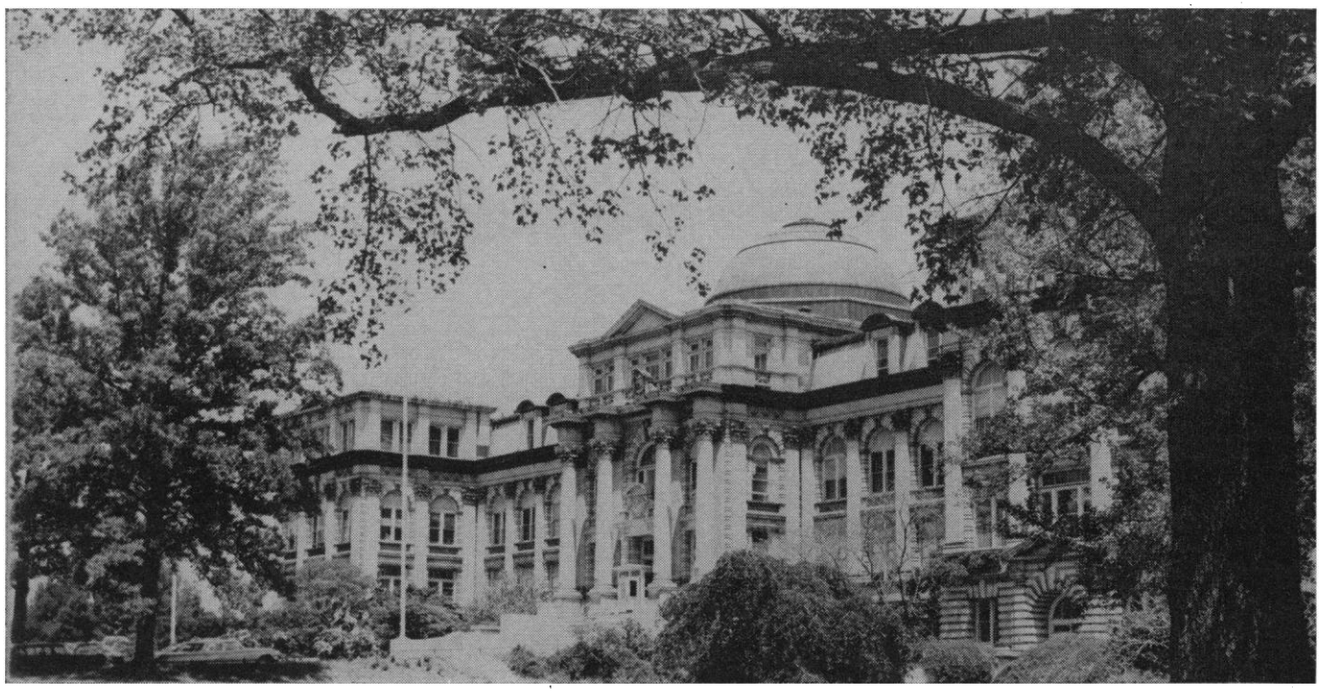
Opposite page, top: The Museum Building at the New York Botanical Garden.

Opposite page, bottom: The tropics and subtropics become reality in the Main Conservatory.

[Gottscho-Schleisner, Inc., Jamaica, New York; New York Botanical Garden]

See Science, *22 September 1967, for details about registration and hotel reservations for the AAAS Annual Meeting. Additional reports on events or symposia taking place during the annual meeting appear in the following issues of* Science: *22 September, "Evolution of the Earth's Atmosphere"; 29 September, "Terrestrial Adaptation of Crustacea"; 6 October, "Behavioral Research–New York Zoological Park"; 13 October, "Weather Modification"; and 20 October, "Norman Bauer Memorial Symposium on Hazards of Iodine-131 Fallout in Utah."*





Vermont, so that his research on the effect of radiation on plants has come to a close at the Botanical Garden. David Davis, research associate, is occupied with an investigation of the basic causes of selective pathogenicity in the *Fusarium*-wilt disease. One of his most interesting results from cross-infection and cross-protection experiments was the discovery that resistance can be induced. P. P. Pirone, senior plant pathologist, is investigating new diseases on several New York street trees, especially *Ginkgo biloba* and the Norway maple, *Acer platanoides*. Annette Hervey, research associate, has for many years maintained the large collection of fungus cultures housed at the Botanical Garden and has assisted William J. Robbins, director emeritus, in his research on tissue cultures from higher plants, largely at the Rockefeller University.

Pierre Dansereau, senior curator of ecology, aided by Virginia Weadock, senior research assistant, and several graduate students and research assistants, carries on, as one of several long-term investigations, functional analyses of vegetation of several parts of the world, from New Zealand through the Azores to Baffin Island.

The research program of the New York Botanical Garden is much enhanced by the presence of graduate students in residence as well as many postdoctoral visitors. The director of the Botanical Garden is ex officio professor of botany at Columbia University, and several other staff members hold the title of adjunct professor. Up to a dozen graduate students, registered at Columbia, do their doctoral research at the Botanical Garden, under the supervision of qualified staff members.

As part of its activities in botanical research and education, the New York Botanical Garden publishes *North American Flora, The Memoirs of the New York Botanical Garden,* and *Botanical Review*. In addition, it publishes *Mycologia* for the Mycological Society of America, *Brittonia* for the American Society of Plant Taxonomists, and *Economic Botany* for the Society for Economic Botany. In an attempt to bring scientifically accurate information about plants to the general public, the Botanical Garden has embarked upon a major program of publication, at first with a series of five volumes, *Wild Flowers of the United States*, of which two volumes have already appeared (*The Northeastern States* and *The Southeastern States*). These books, magnificently illustrated in color, have been written in clear, nontechnical English by a highly qualified expert, H. W. Rickett, long a member of the staff.

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