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About the Institute

The Hunt Institute for Botanical Documentation, a research division of Carnegie Mellon University, specializes in the history of botany and all aspects of plant science and serves the international scientific community through research and documentation. To this end, the Institute acquires and maintains authoritative collections of books, plant images, manuscripts, portraits and data files, and provides publications and other modes of information service. The Institute meets the reference needs of botanists, biologists, historians, conservationists, librarians, bibliographers and the public at large, especially those concerned with any aspect of the North American flora.

Hunt Institute was dedicated in 1961 as the Rachel McMasters Miller Hunt Botanical Library, an international center for bibliographical research and service in the interests of botany and horticulture, as well as a center for the study of all aspects of the history of the plant sciences. By 1971 the Library's activities had so diversified that the name was changed to Hunt Institute for Botanical Documentation. Growth in collections and research projects led to the establishment of four programmatic departments: Archives, Art, Bibliography and the Library.

Hearty Varieties of Botanists Flourish at a Convention Here

By McCANDLISH PHILLIPS

A convention of botanists might suggest a rather placid prospect—a hushed assembly of petal gazers.

Visitors who strolled into the main lounge at Rockefeller University yesterday, right into a clutch of botanists, found them to be as hearty and buoyant as big-game hunters.

The scholars had come from all over: Sir George Taylor, director of the Royal Botanic Gardens of Britain, from London and Dr. Joseph Ewan of Tulane University from New Orleans.

What had drawn them was a rich botanical feast. It was spread out in Abby Aldrich Rockefeller Hall and two side rooms in an exhibition called "Three Centuries of Botany in North America."

The exhibition reaches back to 1588, when Thomas Hariot made the first botanical notations in "A Brief and True Report of the New-Found Land of Virginia."

His slender volume, published that year in London, is one of 75 major works on display. They trace the history of botany, including botanical illustration and description, in North America. The exhibition will be open to the public on weekdays from 9 A.M. to 5 P.M. from tomorrow until April 14.

Rockefeller University, a center of science research and instruction that grants only doctoral degrees, is set on a 14-acre campus whose crest looms above the East River. Its entrance gate is at York avenue and 66th Street.

Dr. Detlev W. Bronk, president of the university, remarked that the New World had been a vast "treasure house of unfamiliar wildlife" when it was opened up. "A great many people came over and described our wild flowers," he said.

"Here is the last, great, definitive work—an enormous undertaking, a landmark," Dr.

Bronk said, nodding toward the centerpiece of the exhibit: The first of 10 volumes in a \$1-million book project, "Wild Flowers of the United States," edited by Dr. Harold William Rickett, senior curator of the New York Botanical Garden in the Bronx.

"I didn't write the book, the book wrote me," Dr. Rickett said, explaining that nearly 15,000 species would be illustrated and described in the work that has taken four years and will require five more.

Dr. Ewan, a professor of biology who teaches the history of botany at Tulane, could hardly contain his joy at the completeness of the exhibition. "If you're any antiquarian at heart, here it is just avalanched upon you," he said. "This is a rare collection of rarities. They should wear out the rugs looking at it, that's what they should do."

About 400 people nearly filled the university's Caspary Auditorium to hear addresses by Sir George and by Dr. Frans Stafleu, secretary of the International Bureau for Plant Taxonomy at Utrecht, the Netherlands.

Before the "craze for illustrated flower books," Sir George said, the public ignored the best of them. "Early volumes of the Botanical Magazine were eagerly torn to pieces to make table mats and lamp shades. Finer works fared little better: Their dismembered pages passed swiftly and profitably from the windows of expensive shops to the walls of smart dining rooms."

Noting that the catalogue of a large English nursery offers 307 species of North American flora for British gardens, Sir George lamented that the number of species commonly planted does not exceed 20.

Criteria for an Optimum Human Environment

Almost every current issue of the major science journals contains evidence of an overwhelming interest in one urgent question: Shall a single species of animal, man, be permitted to dominate the earth so that life, as we know it, is threatened? The uniformity of the theme is significant but if there is consensus, it is only as to the need for concern. Each discipline looks differently at the problem of what to do about man's imminent potential to modify the earth through environmental control. Proposals to study ways of directing present trends in population, space and resource relationships toward an "optimum" for man are so diverse as to bewilder both scientists and the national granting agencies.

ARROGANCE TOWARD NATURE

It is no thirst for argument that compels us to add a further view. Rather it is the sad recognition of major deficiencies in policies guiding support of research on the restoration of the quality of our environment. Many of us find the present situation so desperate that even short-term treatments of the symptoms look attractive. We rapidly lose sight of man's recent origins, probably on the high African plains and the natural environment that shaped him. Part of the scientific community also accepts what Lynn White has called our Judeo-Christian arrogance toward nature, and is gambling that our superior technology will deliver the necessary food, clean water and fresh air. But are these the only necessities? Few research proposals effectively ask whether man has other than these basic needs, or whether there is a limit to the artificiality of the environment that he can tolerate.

In addition, we wish to examine

In his arrogance toward nature, man is gambling that his superior technology will provide the essentials of food, clean water and pure air. What are the risks of such a gamble? Are these the only necessities? Drs. Illis and Loucks are professors of botany at the University of Wisconsin, Madison. Mr. Andrews is an affiliated student in archeology and anthropology, St. John's College, Cambridge, England.

which disciplines have the responsibility to initiate and carry out the research needed to reveal the limits of man's tolerance to environmental modification and control. We are especially concerned that there is, on the one hand, an unfortunate conviction that social criteria for environmental quality can have no innate biological basis—that they are only conventions. Yet, on the other hand, there is increasing evidence suggesting that mental health and the emotional stability of populations may be profoundly influenced by frustrating aspects of an urban, biologically artificial environment.

There have been numerous proposals for large-scale inter-disciplinary studies of our environment and of the future of man, but such studies must have sufficient breadth to treat conflicting views and to seek to reconcile them. We know of no proposal that would combine the research capabilities of a group studying environmental design with those of a group examining the psychological and mental health responses of man to natural landscapes. The annual mass migration of city man into natural landscapes which provide diversity is a mat-

ter of concern to the social scientist, whose research will only be fully satisfactory when joined with studies that quantify the landscape quality, the psychology of individual human response, and the evolutionary basis of man's possible genetic adaptations to nature. The following summary of recent work may provide a basis for scientists in all areas to seek and support even greater breadth in our studies of present and future environments for man.

"WEB OF LIFE"

Two major theses are sufficiently well established to provide the positive foundation of our argument. First, we believe the inter-dependency of organisms, popularly known as the "web of life," is essential to maintaining life and a natural environment as we know it. The suffocation of aquatic life in water systems, and the spread of pollutants in the air and on the land, make it clear that the "web of life" for many major ecosystems is seriously threatened. The abrupt extinction of otherwise incidental organisms, or their depletion to the point of no return, threatens permanently to impair our fresh water systems and coastlines, as well as the vegetation of urban regions.

Second, man's recent evolution is now well enough understood for it to play a major part in elucidating the total relation of man to his natural environment. The major selection stresses operating on man's physical evolution have also had some meaning for the development of social structures. These must be considered together with the immense potential of learned adaptations over the entire geologic period of this physical evolution. Unfortunately, scientists, like most of us moderns, are city dwellers dependent on social conventions, and so have become progressively more and more isolated from the landscape where man developed, and where the benchmarks pointing to man's survival may now be found. They, of all men, must recognize that drastic environmental manip-

CRITERIA FOR AN OPTIMUM HUMAN ENVIRONMENT

Cultural views of optimum environment must
be reformulated on biological bases

Hugh H. Iltis, Orie L. Loucks, and Peter Andrews

Almost every current issue of the major science journals contains evidence of an overwhelming interest in one urgent question: Shall a single species of animal, man, be permitted so to dominate the earth that life as we know it is threatened? The uniformity of the theme is significant, but if there is consensus it is only as to the need for concern (1). Each discipline looks differently at the problem of what to do about man's imminent potential to modify the earth through environmental control. Proposals to study ways of directing present trends in population, space, and resource relationships toward an "optimum" for man are so diverse as to bewilder both scientists and the national granting agencies.

It is no thirst for argument that compels us to add a further view. Rather it is the sad recognition of major deficiencies in the policies guiding support of research on the restoration of the quality of our environment. Many of us find the present situation so desperate that even short-term treatments of the symptoms look attractive, and we lose sight of man's recent origins and the natural environment that shaped him. Part of the scientific community also accepts what Lynn White has called

Drs. Iltis and Loucks are professors of Botany, University of Wisconsin, Madison. Mr. Andrews is an affiliated student in Archeology and Anthropology, St. John's College, Cambridge, England.

PILOT PROJECT IN ENVIRONMENTAL SCIENCES

Ecology Subcommittee

Discussion No. 5: The Optimum Human Environment and Its Relation to Modern Agricultural Preoccupations

Discussion Led by: Hugh H. Iltis, Professor, Department of Botany

We are meeting here to discuss the biological bases for human existence. In so doing, we are trying to reformulate our cultural concepts of man's ancient relationships to his natural environment. That similar dialogues are going on all over this campus and in many parts of the world is evidence for the overriding urgency of the problem. The problem is one of a single species of animal who is making the earth unfit for habitation by conquering it.

The city-dwelling American, in particular, has been so removed from an intimate relationship with nature through the spectacular advances of science, industry and agriculture that he tends to lose sight of his very real dependence on nature (a dependence brought forcefully home by last summer's water shortage in New York, by the famines in India, by the pollution of air in Los Angeles, etc.). The more complex science and technology become, and the more extensive their use, the more far-reaching will be their destructive effects on nature, and the more difficult it will be to assess those effects, to stop them, or reverse them. The more successful science becomes the more difficult also will it be to ask the pertinent questions and expect any sensible answers. Technological success corrupts the ability to see the human animal in proper biological perspective. Technological success has become a technological plague.

It would be blind not to acknowledge the immense debts of modern man to this technological destruction. In mastering the environment, the fabulous inventiveness of modern agriculture has allowed a cultural explosion that continues to this day. In fact, it has made our civilization possible. Agricultural technology of the 19th and 20th centuries, from Liebig and the gasoline engine to hybrid corn, weed killers and pesticides, has crashed an exploitative sound barrier of increased production and prosperity in favored regions of the world whose long-term effect for good (and for evil) we must now try to assess.

Because of this success, some of our chemical or agricultural leaders now firmly hold that we can feed the world, that we can do anything we wish. Because of the population explosion, we must bend

The Optimum Human Environment and its Relation to Modern Agricultural Preoccupations¹

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