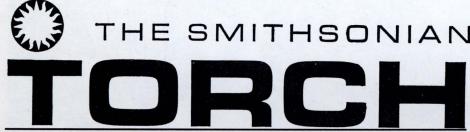
The history-making X15 rocket plane took its place last week under two other history makers, the Wright flyer and Spirit of St. Louis, in A&I. Secretary of the Air Force Robert Seamans presented the experimental plane, first manned vehicle capable of flying in both air and space, to NASM in ceremonies on June 10, exactly ten years after its first flight. In its 198 flights since then it set records for speed—4,520 miles an hour—and altitude—354,200 feet. Both are still unequaled.



## Bay Facility to Observe Anniversary



Smithsonian Institution, Washington, D.C.

No. 6, June, 1969

### Regents Decide Against Bid For Mid-America Branch

The Board of Regents has voted to offer the Smithsonian's assistance in development of a museum at Hot Springs, Arkansas. The Board decided, however, against establishment of a branch of the Smithsonian at Hot Springs as proposed by the West Central Arkansas Development District.

The proposal had included constructing a building to the Smithsonian's specifications—to be known as the Mid-America Center of the Smithsonian Institution—and paying both for facilities and salaries of Smithsonian professional and technical staff. (See November TORCH.)

Consultant Brian O'Doherty conducted an initial study for the Smithsonian on all aspects of the proposal, including feasibility of the project, potential location, purpose, design, possible audiences, financial aspects and other related matters. David Chase of the Smithsonian staff has carried it forward in recent months.

Citing the growing commitments of the Smithsonian in Washington and the inherent difficulties of assuming responsibility for so remote an operation as the proposed Mid-America Center, the Regents decided against adopting the proposal as a Smithsonian project.

# Davis Named Acting Director Of Art Bureau

Robert Tyler Davis takes over as Acting Director of the National Collection of Fine Arts this month, succeeding David W. Scott, who resigned effective May 31.

Davis has been Assistant Director since September. He came to the Smithsonian from French & Co., the New York art dealer for whom he had been a museum consultant.

A graduate of UCLA and Harvard, Davis has also studied at the Sorbonne and has taught at the University of Rochester, McGill University, and the University of Miami. He has served as director of the Portland (Oregon) Museum of Fine Arts, and Vizcya, the Dade County Art Museum.

"I have accepted Dr. Scott's resignation with full awareness of the great contributions that he has made to the Smithsonian and to the National Collection of Fine Arts," Secretary Ripley stated. "When

(Continued on page 2.)

However, they did offer the cooperation of the Smithsonian, under the provisions of the National Museum Act, in the planning and design of the Center.

"I am confident that we can work together to create a new institution in Hot Springs that will be worthy both of the traditions of the Smithsonian and of the enthusiasm of Arkansas," Secretary Ripley stated in a letter to the West Arkansas Development District reporting

## Chesapeake Center Will Celebrate THE SMITHSONIAN With All-Day Open House June 28

The Smithsonian's Chesapeake Bay Center for Field Biology will celebrate its fourth birthday Saturday, June 28 with a day-long invitational open house.

Maryland Governor Marvin Mandel, members of the Maryland Congressional delegation, the scientific community and citizens of the area in which the Center is located have been invited to view its operation and facilities and take part in the anniversary program.

The Chesapeake Bay Center is a 700acre waterfront research facility dedicated to preserving and enhancing the quality of man's environment through programs of ecological study and educa-

The Center is situated on the western shore of the Chesapeake Bay just south of Annapolis, Maryland, in an area of great ecological significance as well as historic and economic importance. It presents a wide selection of typical local ecosystems—from marshes, abandoned pastures, and upland hardwood forests to land still in cultivation.

Scientific programs at the Center are guided by an academic consortium in which the Johns Hopkins University and the University of Maryland have joined with the Smithsonian. The widest participation by other institutions as well as individual scientists is invited.

The Smithsonian acquired this land and established the Chesapeake Bay Center for Field Biology in June 1965 through the generosity of private individuals and foundations. Both public and private funds carry forward today's farranging programs.

#### PRIMARY OBJECTIVES

To advance existing knowledge of the area's biological populations communities and ecosystems, and their environmental relationships, through:

- Methodically inventorying plants and animals—on land and in adjacent estuaries—to provide a scientific base for the study of all aspects of the natural environment. Future conditions, both in the short and long terms, will be measured against these yardsticks or baselines.
- Conducting the sponsoring appropriate ecologically oriented research.
- Using the Center as an outdoor laboratory to teach ecology on both the undergraduate and graduate levels.
- Sponsoring seminars, colloquia, public talks and demonstrations in ecology for both participating students and the general public.
- Controlling and recording amounts of chemical fertilizer applied to the Center's cultivated land in order to study the effects of nutrient run-off on the adjacent estuaries.
- Using the personnel, research, and facilities of the Center to assist local county and civic organizations in planning rational land use for the community.

### Folklife Festival, Director Rinzler Both Shaping Up

When folklife festival director Ralph Rinzler said that he had conducted a "crash study" of Pennsylvania culture for this year's festival everyone else in the room cringed.

Rinzler had indeed crashed, literally, in early April, on his way to Pennsylvania, and as a result a room in George Washington University Hospital had become festival headquarters, complete with files, record player for auditions, and a mandolin dangling from a traction bar. He was allowed to go home at the end of May, and both he and the festival are shaping up nicely.

The third annual Festival of American Folklife produced by the Division of Performing Arts will take place on the Mall July 1 through 6. Some 200 craftsmen and musicians from more than 20 states will help keep their traditions alive by doing their thing for the public.

Special features of this year's festival will include a focus on the regional folkways of Pennsylvania, a tribute to blue grass music, the music of black America, an Illinois "Toby" tent show and crafts exhibits on corn culture and wool.

There will be crafts demonstrations and informal concerts throughout each day and more organized concerts each evening. The National Park Service's annual July 4 fireworks display on the Washington Monument Grounds will be followed by a mass square dance on the Mall, with the First Maryland Fife and Drum Corps leading the crowd to the dance in Pied-Piper fashion.

A taste of American culture in the literal sense will be available at the festival. Foods from Pennsylvania Dutch red beet eggs to southern fried chicken and collards will be available to eat on the spot, and other Pennsylvania delicacies such as sausages and bread will be on sale in take-home quantities.

Although the basic format of the festival will be the same, Rinzler says "We are trying to be more didactic this year, with a more meaningful organization. We will try to show the roots, say, of Bill Monroe (one of the founders of blue grass who will appear at the July 3 concert)."

According to Rinzler, it is easier to run a festival from the hospital, away from the bustle and distractions of the busy Division of Performing Arts offices. And he has had the festival's assistant director, Mrs. Marian Hope, and coordinator, Miss Mimi Carr, keeping everything organized and in control.

And then there was that other advantage, of having his mandolin always close at hand, overhead on the traction bar.

## Hoffman Advises Film Producers

Dr. John N. Hoffman, associate curator of the Division of Manufacturers and Heavy Industries, played an important behind-the-scenes role in the making of a major new motion picture, "Molly Maguires."

Dr. Hoffman was a technical advisor for the \$8 million Paramount picture, which concerns the violent efforts of a secret band of immigrant coal miners to unionize in the last century. The film stars Sean Connery, Samantha Eggar and Richard Harris.

The MHT curator provided technical information on the way Pennsylvania miners dressed and lived in the turbulent "Mollies" period. Actors and art directors consulted with him, and Paramount technicians designed many of the props based on his research and knowledge.

#### CURRENT RESEARCH

Research under way today is oriented towards both land and water ecosystems and their interrelationships. Work is being conducted in the following areas:

• Water quality

(Continued on page 3.)

#### S. I. Movie Honored

"Festival in Washington," the first film produced by the Smithsonian Institution Motion Picture Unit, Office of Public Affairs, has won the top award of the Council of International Non-Theatrical Events (CINE).

The Golden Eagle Award will be presented to Public Affairs Director Frederic M. Philips and producer John O'Toole this fall. In the meantime, CINE will enter the movie, which documents last year's folklife festival, in various film festivals abroad.

### To Zoo's Apes, 'Mother' Means Louise Gallagher

by Mary M. Krug

Louise Gallagher "always wanted a red-haired daughter."

And now she has one—a two-monthold darling with long arms, a wrinkled, old-lady face, and thick auburn hair covering her body.

Mrs. Gallagher is Mrs. Bernard F. Gallagher, wife of the Zoo's animal keeper foreman. Manis, the baby, is an orangutan

Manis is Mrs. Gallagher's first orang, but far from her first ape. She has been substitute mother to the Zoo's primates for the last 12 years. She has embraced with enthusiasm a job that would probably make other wives run crying to the marriage counselor.

It all started with Vickie Jean, a chimpanzee whose mother was unable to raise her. Mr. Gallagher proposed to bring her home with him from work each evening. Mrs. Gallagher was working herself at the time, and the Gallaghers' daughter Sherrie was only 3½ years old, but Mrs. Gallagher took on the care of the 6-month-old primate. "Within three days that was my baby," she recalls. "I even started inventing reasons to stay home and take care of her."

Up until that time Mrs. Gallagher had been firm in her belief that "you couldn't treat any animal like a child," but she soon learned that the way to handle a young ape is to treat it as if you were raising a human baby. In fact, she notes, with the gorillas she had to be even more particular with sterilizing than with her own daughter.

So good a job did Mrs. Gallagher do with Vickie Jean that the chimp's baby brother Donny was entrusted to her the following year. And there has been little let-up since.

The neighbors, at both her present and previous address, have adjusted to the situation with great equanimity. Each ape has been "accepted as the Gallagher baby," she notes, and the neighborhood children treat them as such, "never as they would a puppy or kitten."

The next door neighbor has a human baby almost exactly the same age as Manis and "we compare." The orangutan is closer to the development rate of a human baby than are other apes, who were quicker. Manis can scoot now but will not crawl until about six months. She will soon go into a playpen.

When Manis is sick—and her ailments have included the usual childhood scourge colic as well as asthma—she is treated by a regular pediatrician, whose name Mrs. Gallagher thought it best not to divulge. "He meets me," she said. "Some of his other patients might not understand if I went to the office."

All of the babies have an actual physical need for love and cuddling, but Mrs. Gallagher has learned that orangs are the most affectionate of all. Manis reaches out for her "mother" and clings, especially when there is a stranger present. And when she is not clinging to her mother she clutches a small pillow for security.

Mrs. Gallagher has dressed all of her babies like little humans, and this has led to some understandable doubletakes by strangers. She wheels her charges in a baby carriage. When passersby ask for a peep, she plays it straight and waits for a reaction. "I enjoy tricking people," she says.

A classic reaction came when she took her first gorilla to the grocery store. With its bonnet, sweater, and blanket, only its face was visible. A neighbor, who was aware of the true contents of the blanket, burst into laughter as she overheard another shopper exclaim to her companion, "My God in heaven, I'd love to see what that girl's husband looks like!"

This Harlem view by Leonard Freed is representative of the works in "The Concerned Photographer," an exhibition of the selected works of Werner Bischof, Robert Capa, Freed, David Seymour and Dan Weiner in A&I until August 24. There is an admission of 50 cents for adults and 25 cents for children to benefit the Anacostia Neighborhood Museum.

Contrary to the assumption of most people, the apes do not swing from the chandeliers or climb on the drapes. In fact, Mrs. Gallagher believes they are easier to discipline than children. The first time they start to climb on the sofa, she disciplines them. Then they are no more trouble.

In fact, people have given her more trouble about raising her charges than the animals have. The Gallaghers had to get an unlisted telephone after repeated calls from individuals who demanded directions to the house so that they could bring their children to see the baby, or who were offering unwanted advice on raising it or were other varieties of nuisance.

Another trouble with the mother role is ending it. The apes are with Mrs. Gallagher night and day for at least six months, and then they must learn to make the change from cribs and ruffled diapers to cold, bare cages.

They do not have to go through this shock all at once. On their first Zoo visit Mrs. Gallagher goes into the cage and feeds them there. They are acclimated over a period of days to being left alone in their new surroundings, and so far none has taken easily to being exposed to the public with no clothes on. Leonard gorilla even tried to hide behind a blanket the first time he was placed nude in the cage.

Mrs. Gallagher keeps records for Zoo director Ted Reed on each baby's growth rate, health, and behavior. Although she has had no formal zoology training, her talent for mothering has drawn favorable notice of the National Institutes of Health, which has asked for advice on raising its chimps. She did such a satisfactory job on Vickie Jean, that the Detroit Zoo, which had purchased the chimp, bought her brother Donny sight unseen when it learned that Mrs. Gallagher had raised him, too.



Mrs. Gallagher and Manis

The notes she has kept may come in handy if Mrs. Gallagher ever gets around to doing the book her friends have encouraged her to write. But being almost continually faced with diapers to change, bottles to warm, and colicky apes to rock during the night, Mrs. Gallagher is going to have to delay her debut as an author, and just keep gathering material. So far, that's all right with her.

Photo by Mary Krug

#### MNH Honors 81 Volunteers

Eighty-one individuals—about a third of them teenagers—have been cited by the Museum of Natural History for outstanding volunteer assistance to the museum.

Specially designed certificates "in recognition and appreciation of valuable services rendered as a volunteer assistant in the scientific pursuits of the Museum of Natural History" were presented to the group in ceremonies in the office of Director Richard Cowan.

The wide range of interests of these volunteer assistants is reflected in the recommendations for the awards, which cover such diverse activities as "sorting archeological refuse materials from hearths of the ruins of Ponape, Caroline Islands, Micronesia," "discovering and calling attention of the museum to the existence of a cave fissure containing Pleistocene vertebrate fossils," and "channeling vertebrate fossil material from the Canal Zone to us from the Miocene exposures."

"This corps of volunteers not only has added very materially to the resources of the museum but, clearly, is a reservoir of goodwill which provides support for the programs and interests of the museum in many intangible as well as tangible ways," Assistant Director Paul Knierim noted.

The museum awards will be presented twice a year. The next occasion will be in late August, just before the summer volunteer help returns to school.

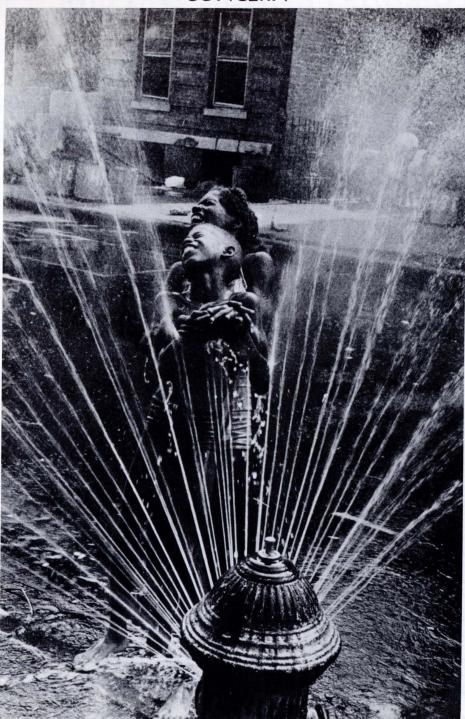
### David Scott

(Continued from page 1.)

David Scott assumed the directorship of the National Collection in 1964, it was a small bureau barely visible in the foyer of our Museum of Natural History. Last month it celebrated the first anniversary of its opening in its permanent home—a dramatic transformation for which Dr. Scott deserves a major share of the credit.

"Dr. Scott's resignation follows upon a meeting of the National Collection of Fine Arts Commission. At that meeting the Commission responded to my earlier request for full discussion of the charter and future directorship of the NCFA. It is my hope that, with the help of the Commission, we will be able to appoint a successor to David Scott who will preside over the next phase in the NCFA's development with the same dedication which David Scott brought to the phase we have just completed."

CONCERN



## Bay Area Ideal for Study of Ecology

(Continued from page 1.)

- Distribution and abundance of native and introduced aquatic vegetation
- Productivity of plankton in the bay and rivers
- Fish populations, varieties, distribution, rate of growth, and predatorprey relationships
- Diseases of aquatic plants
- Ecology of aquatic birds, especially ducks, geese, and swans
- Studies of land plants and animals
- Vegetation mapping
- Population studies of birds and relation to plant communities
- Underlying mechanisms of vegetation change
- Host-parasite relationships of birds, viruses, and blood parasites

### DESCRIPTION OF THE CENTER

The 700-acre Center presently consists of two tracts owned by the Smithsonian Institution. The topography ranges from rolling upland to nearly level lowlands and swamps. The sandy-loam soil supports forests of differing ages and compositions interspersed with cultivated and abandoned fields. The shoreline includes sandy beaches, eroding bluffs, and extensive brackish marshes. The lower portion of one watershed, Muddy Creek, is surrounded by Center land. This affords it some protection and provides access for researchers to one of the small estuaries of the Chesapeake Bay. Directly across the estuary are densely populated residential communities, a contrasting type of land use valuable for comparative study. The Center also includes the complex of small islands known as Poplar Island near the eastern shore of the Bay.

Thus, the natural life of the Center is diverse, reflecting the varied environmental conditions of the central Atlantic region generally.

Plans also exist for acquiring landintervening between the two Smithsonian tracts and adjacent to them to provide a research center with even broader ecological coverage.

#### **FACILITIES**

The headquarters building contains a lecture hall, offices, open work space with tables, storage areas, a small workshop, a developing library and museum, and dormitories and kitchen facilities for both men and women. Roads and trails provide access to the upland areas. A large dock is available for mooring vessels. Two small boats are available, a 16-foot Boston whaler with a 55 HP motor and a 15-foot aluminum skiff with a 20 HP motor. The whaler is equipped with a winch for aquatic and bottom sampling. Improvements in these modest facilities are either under way or planned.



The Center, with its Bay estuaries, forests, beaches, and swamps, interspersed with cultivated and abandoned fields, is picturesque as well as fertile territory for the life scientist.

#### **ADMINISTRATION**

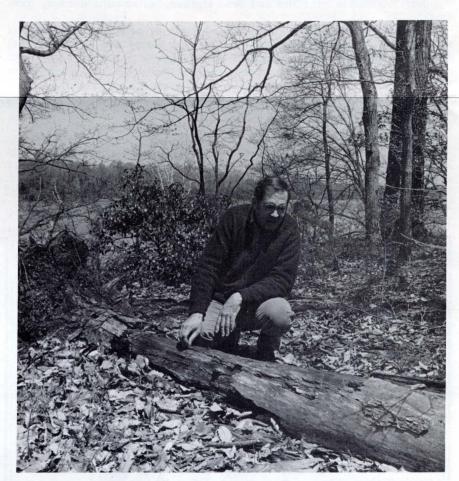
The Chesapeake Bay Center for Field Biology is managed by Director Francis S. L. Williamson. He and his staff are members of the scientific faculty of the Smithsonian.

The academic consortium—The Johns Hopkins University, the University of Maryland, and the Smithsonian—is central to scientific programming. Two members each for the three cooperating institutions plus three outside members constitute the Center's Scientific Advisory Committee.

The Center welcomes applications from pre- and post-doctoral researchers and visiting scientists to participate in research programs. Along with staff investigators, applications for use of the Center for

educational purposes are also solicited.

It is hoped that the Center, through its program of research and education, will become a significant focal point for education institutions, local State and Federal agencies, legislative bodies, and other segments of society concerned with the quality of our environment.



Dr. Frank Williamson, director of the Chesapeake Bay Center, keeps a close watch on the changing face of the natural surroundings. The fallen tree can tell him much about the life cycle of the area.



Storrs Olson is resident manager of the Chesapeake Bay Center. An ornithologist, he is studying a bird skull in the headquarters building, which contains a lecture hall, offices, dormitories and kitchen facilities in addition to work space and study areas.



The canvasback duck, prized by hunters, is an important part of the ecology of the Chesapeake Bay Area, its favorite wintering ground

## Kwapong Offers Perspective on Man, Beast

Man and beast and their social behavior were compared for three full days last month by the world's top scholars in the field at the Smithsonian's third international symposium. Dr. Alex A. Kwapong, Vice-Chancellor of the University of Ghana and chairman of the symposium, offered the following synthesis of the proceedings at the closing banquet:

We have come to the end of the Third International Symposium of the Smithsonian Institution on Man and Beast and have had our rich feast of Comparative Social Behavior. On this occasion, as a man trained in the classics, my mind naturally—or should I rather say instinctively?—goes back to the most accomplished of Plato's dramatic dialogues, the *Symposium*.

As you will recall, in this intellectual banquet or dinner party, Plato has immortalized, with as much artistry and poetry as with philosophy, the nature and origins of love. That Symposium was, of course, not like our own, "scientific" or international, but an all-Athenian party given by the tragic poet Agathon in his house to his eight guests of whom Socrates was the most important. I recall the Symposium not only because of its relevance as a literary genre or because like our own it was characterized by wit, friendliness and intellectual integrity; but also because of the brilliant fantasy or jeu d'esprit on human evolution which Plato has put into the mouth of the comic poet, Aristophanes.

Man today, says Aristophanes, has evolved from the first human creatures who were originally of three sexes, male, female and hermaphrodite. When these rebelled against the gods, Zeus bisected them as a punishment for their pride. Man today is therefore but a mere half of his original tripartite whole and 'Love is the desire and pursuit of the whole', that is, man's endeavor to reunite himself to his former lost half.

It is a beautiful and humorous fantasy and Plato does not, of course, expect us to take it too literally or seriously.

Every generation and every people have their own mythology on the origins and nature of man. And in all these, man's kinship with and origins from the beasts have been a recurrent theme. This is, for example, particularly true of the view of life of the Akan people in Ghana to whom I belong, in whose language and culture, through proverbs and folklore, Man's inter-connection with Beast is richly portrayed. And in all this, the tendency to anthropomophize, that is, to cast Beast in the mould of Man, is no less strong than the tendency to zoomorphise or make a Beast out of Man.

As I look back on the papers that we have heard this week and the various discussions that these have generated on the relations between Man and Beast, it has become clear to me that we keep these two tendencies to anthropomorphize and zoomorphise clearly in mind and to be conscious of their limitations as well as their possibilities. In our enthusiasm to embrace the new discipline of ethology, the biological study of behavior, it seems to me that it is essential for all of us to take seriously one of the clear points on which there has been a consensus, and it is this: We need to bring Man and Beast together, but we must also keep them apart.

Every educated man of today, whatever his hue or nationality, now accepts without question the fact that Man "has evolved, slowly and gradually, from ancestors which were far more similar to other mammals than Man is now. This means that everything Man is and does must have evolved, through a long series of minute evolutionary steps, from what his animal ancestors were and did. Man has diverged very gradually from monkey or apelike stock to what he is now, just as modern, closely-related animal species have diverged from common stock." (Tinbergen, Oxford, 1964).

This process of divergent gradual evolution has produced Man—Homo sapiens—who, until the recent advances of ethology, was often said to be "unique," that is to say, so essentially different from animals, that he was something altogether new; and that he was divided from animals by a deep and unbridgeable chasm.

To a layman like myself, one of the salient conclusions which has emerged from the various presentations during the Symposium, each based upon different premises, is that man is unique only in the sense that he is "strikingly different"

Iceman Mystery Loses Steam

The "Minnesota Iceman," that strange creature from Rolling Stone encased in Permafrost, who has puzzled the scientific community for the past few months (see April TORCH), is a fake. A hoax. A fraud. A fabrication.

So says the Smithsonian, which learned from informed sources that the much publicized soul on ice was made from latex rubber and hair by a group of exhibits specialists on the West Coast.

"It is a fantastic, magnificent fabrication," the SI was told by a man involved in the Iceman's creation. "It makes King Kong and the Frankenstein Monster mere toy manufacture rejects by comparison," he said.

The cost: \$3,500.

Dr. John Napier, MNH primatologist, who has spent considerable time and correspondence on the case, now says he is "ninety-nine and forty-four one-hundredths percent sure" that the Iceman is a fabrication.

One question, however, still remains unanswered:

Who posed for the model?

from the other animals. Man is unique all right, but he is an animal of a kind. In Tinbergen's paraphrase of George Orwell's dictum "all animals are unique, but Man is more unique than others." (Ibid).

In body and functions, Man is very similar to other mammals; his uniqueness lies, however, in the matter of behavior, and it is his brain that is unique and functions in a unique way and has produced his language, culture and his civilization. But this culture is as much rooted in man's biology as in his environment. This insight into the importance of biological factors in cultural evolution is one of the crucial contributions made recently by the science of ethology to human understanding.

Man, as a result, possesses the unparalleled ability of handing on his experience from one generation to the next, and thereby radically changing his environment, both physical and social. This cultural evolution is, of course, much faster than genetic evolution. Next Sunday, the astronauts of Apollo 10 take off on the penultimate journey that should land man on the moon. Yet these astronauts have not genetically evolved any differently from Cro-Magnon Man. However much we may individually adapt to these technological changes, the fact remains, nevertheless, that there are limits imposed by our hereditary animal constitutions on the rate at which human behaviour can be adjusted and modified and that we are all conditioned by the much slower speed of genetic evolution. "Man's limited behavioural adjustability has been outpaced by the culturally determined changes in his social environment and that is why man is now a misfit in his own society."

It is in this context that I have found particularly illuminating and rewarding the discussion on "aggression" during the Symposium. The nature and scope of "aggression" in animals have, I think, been placed in reasonable perspective, and shown to be a complex process of interaction between factors, both internal and external, both genetic and environmental. "Aggression" is not a simplistic, mechanistic process nor is it the only pebble on the animal behavioral beach (if I may be allowed this mixed metaphor). Competition and "aggression" in the world of non-human primates is also accompanied by fear and withdrawal and, as John Crook has so vividly shown, by cooperation within the group. "Men, like monkeys" and I quote him, "appear to cooperate best when at their most competitive. Nevertheless, human beings again, like monkeys, are socially mobile and may change the frame of reference from a narrow sectarian concern to broader avenues of wider significance. An understanding of the forces controlling the maintenance of social position in relation to human needs in terms of identity, in-group membership and role transfer in relation to self-esteem would much improve our chances of social control."

It is from this perspective that we may view the issue of war and peace and international cooperation. Far from giving way to despair and defeatism, I am encouraged by the results of the Symposium. The development of behavior is very complex, so far, much progress has been made in analysing it in animals, but with respect to men, only a small beginning has been made.

I would like to suggest, in all humility, as a classical scholar from a continent which is the home of the australopithecine ancestors of man, the hamadryas baboon which has been so extensively studied and the Bushmen of the Kalahari desert, of whom we have heard and seen so much during this Symposium, that what is needed very much today is also a serious and "truly scientific and powerful anthropology" of "Homo Industrialis" or "Technology Man", whether in America, Europe or elsewhere. Man, the Cultural Animal, should once more take the centre of the modern stage, instead of technology and the impersonal computer. That, it seems to me, is what the restless youth in their violent gropings and fumblings, appear to be saying today. The problem "moves back to an economic and educational level," again in John Crook's words, "with a focus on the needs of humanity as a whole."

Education and scientific research, human understanding and cooperation, these are among the means by which Man has risen above the Beasts. It is by these means that we can hope to bridge the dangerous gap which now divides the rich nations from the poor. The difference, however, between now and the previous centuries, is that the world has been knit together by instantaneous communications, and we are all each our brother's keeper. That is the final point I would like to make and, of course, I am Socratic enough to believe that the "increase and diffusion of knowledge" is one of the highest ends of man; and for this, we are grateful and indebted to Smithson and all of you who have laboured, so successfully, to bring Smithson's ideal into fruition.

We have been reminded by Marvin Bressler that to achieve this synthesis, social biology and sociology must come together in sympathy as a "unified life science that would define the nature and limits of human variability." That is a proposition which, I am sure, we all very much share.

And here I may be permitted, in concluding these brief remarks, to end as I began by going back to ancient Athens. Let me remind you of Sophocles' great hymn in his *Antigone* which the Chorus sing to the ingenuity and limitations of

Wonders are many on earth, and the greatest of these Is man, who rides the ocean and takes his way Through the deeps, through wind-swept valleys of perilous seas

That surge and sway.

He is master of ageless Earth, to his own will bending
The immortal mother of gods by the sweat of his brow,
As year succeeds to year, with toil unending

Of mule and plough.

He is lord of all things living; birds of the air,

Beasts of the field, all creatures of sea and land

He takes, cunning to capture and ensnare

With sleight of hand;
Hunting the savage beast from the upland rocks,
Taming the mountain monarch in his lair,
Teaching the wild horse and the roaming ox
His yoke to bear.

The use of language, the wind-swift motion of brain He learnt; found out the laws of living together In cities, building him shelter against the rain

And wintry weather.

There is nothing beyond his power. His subtlety
Meets all chance, all danger conquers.
For every ill he has found its remedy,
Save only death.

O wondrous subtlety of man, that draws
To good or evil ways! Great honor is given
And power to him who upholds his country's laws
And the justice of heaven.
But he that too rashly daring, walks in sin
In solitary pride to his life's end,
At door of mine shall never enter in
To call me friend.