AAAS Montreal Meeting, 26–31 December 1964

The origins of baboon aggression are to be seen in this shot of two juvenile baboons in competitive play. Stuart and Jeanne Altmann took the picture this year in Amboseli, Kenya.

The Social Nature of Man

The social sciences are heavily represented on the program at the forthcoming AAAS meeting in Montreal. Following are résumés of six such events.

Monkey Business

One of the top events at Montreal will be an International Symposium and Conference on Communication and Social Interaction in Primates, which will run from 27 to 31 December.

Research in this field promises to clarify much: origins of primate behavior; how behavior develops in an individual from infancy; how behavior is regulated by the nervous and endocrine systems; capabilities and restrictions that are set by each primate's anatomy; and relations between behavior, social organization, and environment.

So reports zoologist Stuart Altmann, University of Alberta, who arranged the event. Monkeys make good research subjects, both because they are man's closest cousins and because their social systems and behaviors are simpler than man's and thus easier to study.

Altmann reports that, just a decade or two ago, few if any workers were in the field studying the lower primates. But this year there have been more than 20 (including Altmann himself, who was in Kenya).

Laboratory research on monkeys has shown a similar spurt. Equipment is now being used for remote recording of behavior and for telemetering and telestimulation of various physiological functions which affect behavior. Computer techniques and mathematical models of social systems have been developed, which make it possible to test theories of behavior.

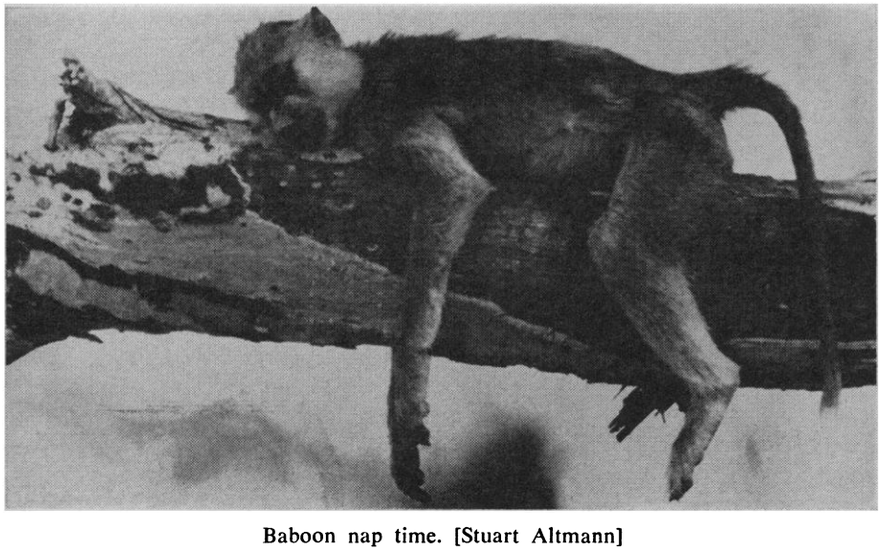
In fact, growth in this research has been so fast, and has occurred in so many fields, that one purpose of the event is to help researchers further coordinate their efforts. Altmann reports that about two dozen scientists from four continents will speak. Disciplines represented will include anthropology, mathematics, neurology, psychiatry, psychology, and zoology.

Chimpanzee Tool-Users

The chimpanzee is a closer cousin than many people realize. Naturalist Jane Goodall, 29-year-old Englishwoman, has found that chimps in the wild use a variety of tools, have at least a 20-word vocabulary, and eat meat as well as plants.

A color film illustrating her findings and showing her laboratory—the Gombe Stream Game Reserve near Lake Tanganyika—will be this year's

Man is not alone as a user of tools: Jane Goodall found this chimpanzee using a stick to extract tasty termite morsels from a mound of earth. She also saw chimps crumple leaves, for use as a "sponge" in collecting drinking water, and saw another chimp use a leaf as a napkin for wiping his mouth. [Baron Hugo von Lawick, © National Geographic Society]



Baboon nap time. [Stuart Altmann]

National Geographic Society illustrated lecture. It will be shown the evening of 30 December.

During nearly 2 years of observing these most intelligent of monkeys, Miss Goodall found proofs that chimps use and even fashion tools. She saw a chimp use a leaf as a napkin, to wipe his sticky hands after eating. She observed a chimp crumple a leaf and use it as a sponge to soak up rainwater in a hollow log. Most impressive was this finding: "I have watched chimpanzees fish [termites from a heap of dirt] for two hours at a time, picking dainty morsels from the straw [used to extract the termites] and munching them with delight. . . . Sometimes a leafy twig is selected, and before this can be used the chimpanzee has to strip off the leaves. In so doing—in modifying a natural object to make it suitable for a specific purpose—the chimpanzee has reached the first crude beginnings of tool making" [*National Geographic Magazine*, August 1963].

Further, Miss Goodall was the first to find conclusively that chimps eat meat in addition to plants. The red colobus monkey is favored chimp game, apparently because it is easy to catch. Miss Goodall also observed a chimp eating a chicken. And she was surprised to see a chimp with the skull of a young bushbuck; this is a surprisingly large animal for a chimp (weighing no more than 130 pounds) to kill.

Automatic Population Control

In an age when "death control" (medicine) is more successful than counterbalancing birth control measures in many parts of the world, more research into population control is needed.

An example of such research is provided by V. C. Wynne-Edwards, Regius Professor of natural history, University of Aberdeen. In a speech in the AAAS lecture series Moving Frontiers of Science, to be given 26 December, he will present his theory on how animal populations are controlled automatically.

Wynne-Edwards concludes that disease is not a prime factor in controlling animal populations. Nor, he thinks, are predators—the lion, eagle, and skua have none, yet their populations are fairly stable.

But starvation is a factor, he says. Birds and other animals fight for nest-

ing and feeding grounds. They limit the population density—winners get exclusive rights to a territory, and its food with it.

Birds "seldom draw blood or kill each other. Instead they merely threaten with aggressive postures, vigorous singing or displays of plumage." The strutting and dancing of the sage grouse is an example.

This, Wynne-Edwards concludes, represents "an automatic restricting mechanism analogous to the deliberate conventions or agreements by which nations, for example, limit the exploitation of fishing grounds."

The difference, of course, is that the animals' control mechanism is apparently not consciously set—and man's mechanisms are. Man must depend on his conscious and deliberate behavior for keeping his population in check. So far, Wynne-Edwards suggests, animals have done a better job.

Humanistic Biology

Many successes in biology have come because researchers have examined the smallest and simplest possible physiological and chemical systems of organisms. But a great deal can be gained by studying the biology of *homo sapiens* as a whole, suggests René Dubos of the Rockefeller Institute. On 29 December Dr. Dubos will give the annual Sigma Xi–Phi Beta Kappa lecture.

Man is superior to his monkey cousins by no order-of-magnitude jump in physiological sophistication, Dubos reports. Yet clearly man has achieved a far more complex society and expresses himself in far grander ways.

Dubos suggests that there are "biological forces in man's nature which are not governed by reason and indeed are not readily apparent, but which constitute nevertheless the most powerful sources of inspiration" both for artist and scientist. Dubos even suggests that out of man's biological nature come social attitudes which in turn "can evolve into ethical principles." Indeed, "all the biological attributes of man are the raw materials out of which are made the creations which are the concern of the humanities. . . . The role of the biologist, as I see it, is to try to recognize the existence of these raw materials, to describe them as completely as possible, to study their interplay, and thus help man to know himself."

Eskimo Origins and Evolution

How are the tribes of Eskimos related? Have they common ancestors?

These and other questions will be answered in a symposium on Archaeological and Ethnological Problems in the Arctic and Subarctic, to be held 29 and 30 December, arranged by Jacob Fried of McGill University, Gordon Lowther of the University of Montreal, and Katherine McClellan of the University of Wisconsin.

Fried explained the thinking which led to the symposium: Archaeologists, ethnologists, and social anthropologists have studied in detail individual sites and tribes. The question now is, how are the tribes related? Where did the Dorset culture come from and how widely did it spread? Knowing that ultimately the eastern Eskimo cultures derived from Western sources, how shall we fill the big gap in sites in the central arctic regions? Far back in time, what early cultural types developed into "Eskimo" cultures and what into "Indian"? What have been the influences of fur traders and trappers, miners, whalers, missionaries, and government personnel?

Environment versus Heredity

"Programs of . . . environmental stimulation early in life [may affect] human capacity for forming concepts and the ability to think, if provided early enough and perhaps during 'critical periods' for the formation of concepts and ideas." This thought underlies a symposium on Early Experiential Deprivation and Enrichment, and Later Development, set for 29 December and arranged by psychologist Dale Harris of Pennsylvania State University.

Harris continues, "while specific programs of training, narrowly conceived, may improve performance in specific ways, such programs often do not do much to change the *level* of a person's capacity for performance or for acquiring skill in performance."

"There is accumulating a new body of evidence that extreme deprivation during periods of infancy may set definite limits on the level of capacity that can be developed by an animal, including the human animal. There is also evidence that increased opportunity to explore a complex environment early in life" may boost ability to achieve at a much later date.

Psychiatric Contributions

A symposium on Cognitive Processes and Psychopathology has been arranged for 26–27 December by a committee headed by Montague Ullman of Maimonides Hospital of Brooklyn. In introductory remarks, Harley Shands of the State University of New York, Downstate Medical Center, Brooklyn, will note that the scientific advances of the past two or three decades have put into serious doubt every old theory of man's thinking processes. Many of the new developments come from the fields of psychoanalysis, linguistics, communication engineering, and psychological development. These influences will be reviewed in the four sessions of the symposium:

1) A session on information theory, keynoted by James Miller of the Mental Health Research Institute, University of Michigan. Miller will review his work on the concept of "information overload" as it relates to psychiatric conditions.

2) A session on "holistic" theories of personality, keynoted by Eugenia Hanfman, authority on schizophrenic language and recent translator of Vygotsky's important book *Thought and Language*. She will discuss her work on the posthumously published writings of Andras Angyal. The discussion following will concern itself in part with the "linguistic relativity" ideas of Sapir and Whorf.

3) A session on thought-disorder as the leading feature of schizophrenia, arranged by Silvano Arieti, author of *An Interpretation of Schizophrenia.* This panel will consider the "pathognomonic" character of signs of thought-disorder in the diagnosis of schizophrenia.

4) A final session on the developmental psychology of Piaget, his "genetic epistemology," with the main address to be delivered by Piaget's longtime principal associate, Professor Barbel Inhelder of the University of Geneva. Miss Inhelder will consider the possible correlations of the Piaget system, constructed on the basis of the observation of normal children, for the understanding of mental illness in a medical setting.

The symposium as a whole is oriented toward furthering the rapidly growing rapprochement of fields in psychology, clinical and nonclinical, which for most of this century have appeared to have very little connection with each other.