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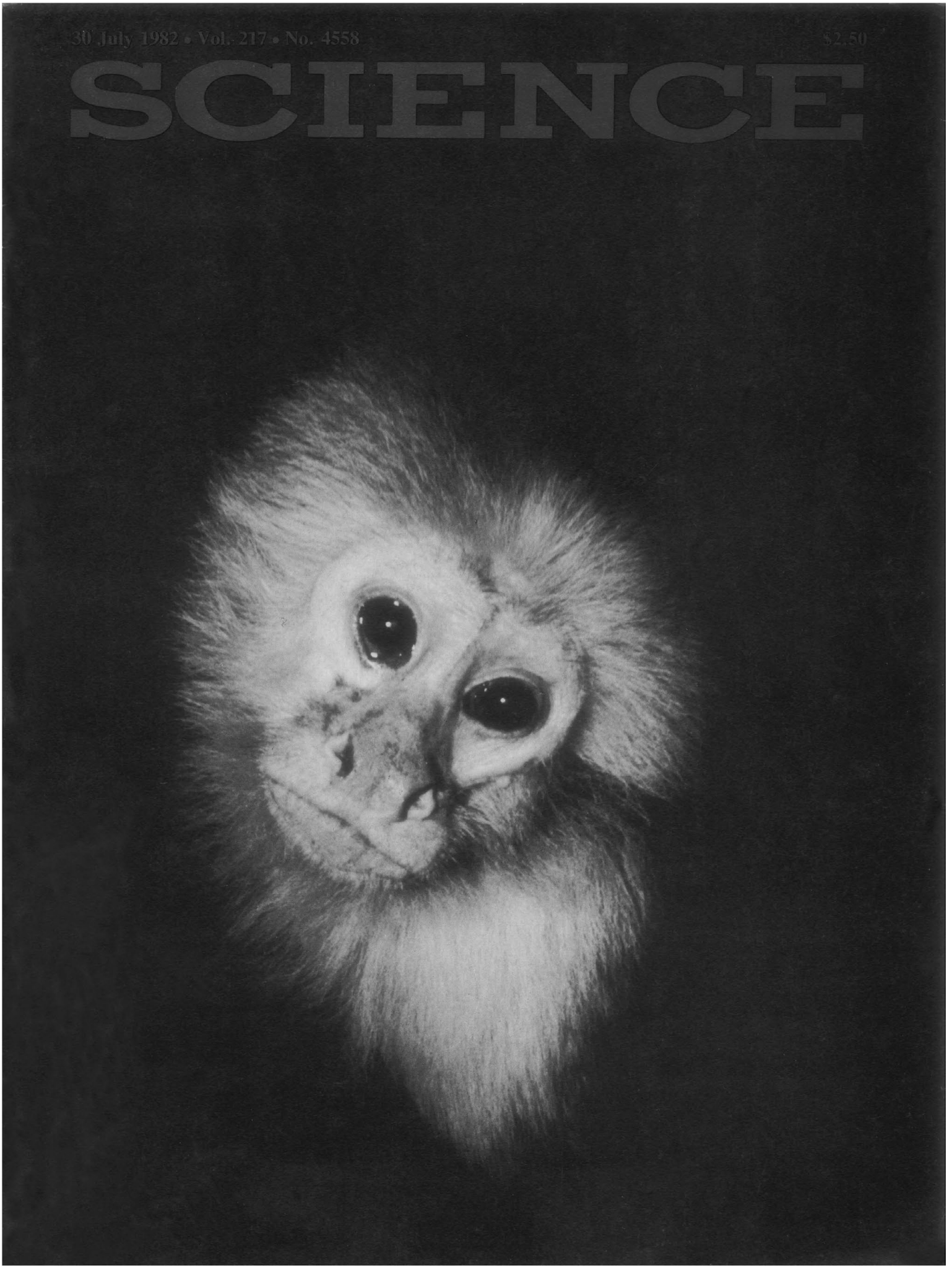
SCIENCE



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Therapeutics. Combating disease more effectively is, for SmithKline Beckman, a primary commitment. On the heels of our pioneering success against ulcers, a novel anti-arthritis compound will soon be marketed in several countries. Above (left) a scientist tests new cardiovascular agents.

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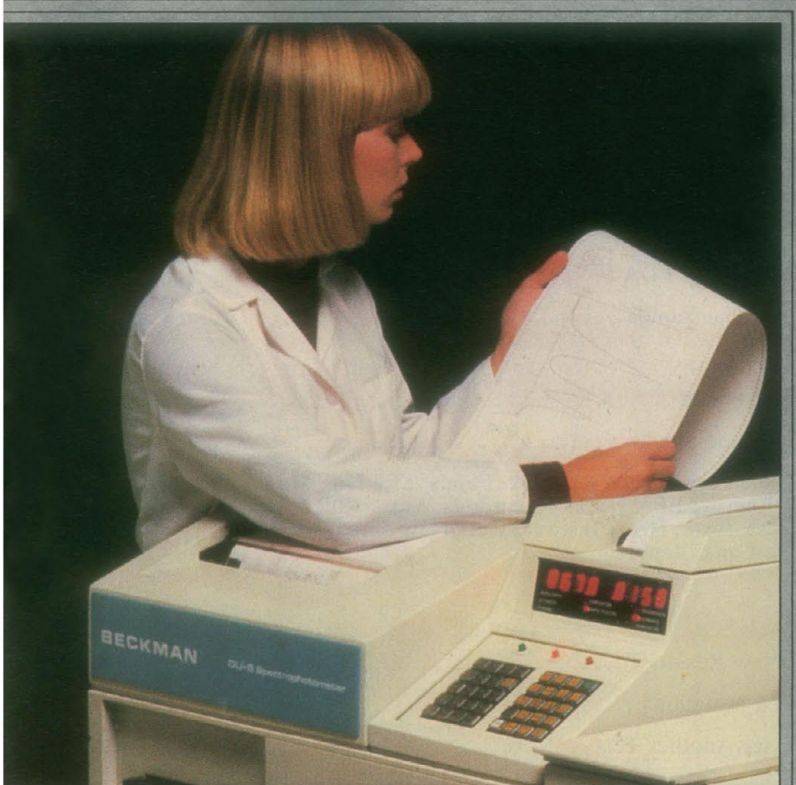

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Discovery. Advances in health care and human well-being today demand broad capabilities, so Beckman Instruments and SmithKline have now united. With complementary technologies and scientific skills, we are converging on key discoveries about life processes.

Look into SmithKline Beckman. And look into the future.

Technologies

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AMERICAN ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE

COVER

"Bobo," a 47-year-old male monkey (*Cebus capucinus*) believed to be the oldest documented monkey alive. Like most monkeys in excess of 20 years of age, he exhibits impairments in recent memory conceptually similar to those of aged humans. He is currently part of an integrated program designed to study factors responsible and methods for treating this and other age-related dysfunctions of central nervous system origin. See page 408. [Raymond T. Bartus, Lederle Laboratories, American Cyanamid Company, Pearl River, New York 10965]

30 July 1982, Volume 217, Number 4558 **SCIENCE**

Health and Behavior

It is our good fortune to live in a time when the nature of living organisms is rapidly being elucidated. Recent advances in molecular and cellular biology exceed what anyone could have imagined as recently as a few decades ago. They link up with other fronts, such as neurobiology and human behavior.

Nowhere are the needs and opportunities for progress in the biobehavioral sciences clearer than in problems of health and behavior. These matters are documented in a new report from the Institute of Medicine (IOM), National Academy of Sciences.* Behavioral factors contribute to much of our burden of illness. Half of the mortality from the ten leading causes of death in the United States is strongly influenced by life-style. Known behavioral risk factors include cigarette smoking, excessive consumption of alcoholic beverages, use of illicit drugs, certain dietary habits, insufficient exercise, reckless driving, nonadherence to medication regimens, and maladaptive responses to social pressures.

One powerful stimulus to the biobehavioral sciences has been the remarkable progress of neurobiology pertinent to behavior, recognized in the Nobel Prizes of 1977 and 1981. There is now an unprecedented array of molecules, cells, circuits, systems, techniques, and concepts available for research on problems related to behavior and health. One crucial linkage of the biomedical and biobehavioral sciences is in the study of the final common pathway through which the brain controls the endocrine and autonomic nervous systems. Over the past several decades, much has been learned about these systems and their roles in mediating human responses to changing circumstances. A landmark in this line of inquiry was the characterization of several hypothalamic hormones. This research also contributed to an advanced technology for peptide analysis. Coinciding with the discovery of receptors in the brain, it led to a burst of neuropeptide discoveries in the past few years. This rapidly moving frontier is of great significance in understanding brain function and behavior—for instance, responses to stress. It illustrates how advances in neurobiology stimulate the scientific study of behavior.

Another opportunity arises from research on learning, a major thrust of psychology since its inception as a science. In recent years, a theory has emerged that clarifies the social context of human learning, is a balanced synthesis of cognitive psychology and behavior modification, and draws on experimentally verified principles of learning. Such principles are now being used in clinical and field experiments that test ways of changing behavior that affects health. During the past 30 years, epidemiologic studies have delineated objective measures as indicators of the likelihood of developing coronary disease and stroke—that is, risk factors such as high blood pressure, tobacco smoking, and obesity. Several large-scale studies have found that many people can diminish their health-damaging behavior and thereby decrease the likelihood that they will develop serious cardiovascular disease.

The IOM report assembles informed assessments by many leaders in the biomedical and behavioral sciences and highlights promising lines of scientific inquiry pertinent to understanding, treating, and preventing behavior-related components of the burden of illness. The report deals with diverse problems including smoking, alcohol, stress, aging, cardiovascular diseases, diabetes, mental disorders, sleep, work, and social disadvantage. Given the deep national concern about health and strong data linking behavioral factors and health problems, the delineation of these scientific opportunities indicates a logical response to this great challenge. Therefore the present low level of funding of such research deserves careful reexamination. Broadening of the life sciences in the context of health and behavior can have a profound impact in the remainder of this century.—DAVID A. HAMBURG, *Director, Division of Health Policy Research and Education, Harvard University, Cambridge, Massachusetts 02138*

*Institute of Medicine, *Health and Behavior: Frontiers of Research in the Biobehavioral Sciences* (National Academy Press, Washington, D.C., 1982).

1982 AAAS Westinghouse Science Journalism Awards

Rules

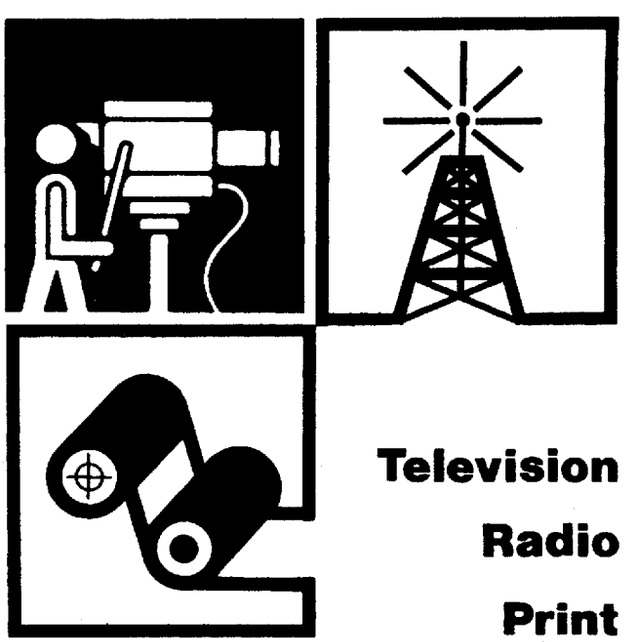
The aim of this competition is to encourage and recognize outstanding reporting on the sciences and their engineering and technological applications in newspapers, general circulation magazines, radio, and television. The following categories are not eligible: items on the field of medicine, items published originally in AAAS publications or produced by AAAS; reports by employees of the AAAS or Westinghouse Electric Corporation.

Print

- An entry for a newspaper competition may be any of the following: a single story; a series of articles; or a group of three unrelated stories, articles, editorials, or columns published during the contest year. A magazine entry may be a single story or series published during the contest year.
- A completed entry blank must be submitted together with seven copies of each entry in the form of tear sheets, clippings, reprints, or syndicate copy (not over 8½" x 11"), showing name and date of the publication. **ENTRIES MUST NOT BE ELABORATE!**

Broadcast

- An entry for the radio or television competition may be an individual news story, feature, or a series, regardless of length, broadcast during the contest year on either public or commercial stations. Entries must be comprised of scripted material. Interviews are not eligible.
- A completed entry blank must be submitted together with a cassette in the case of radio and copy of the script or a ¾" videocassette in the case of television and copy of the script.



Television

Radio

Print

- Each entrant may submit three entries for any one category.
- Each entry must have been published or produced and broadcast within the United States during the contest year—1 October 1981 through 31 December 1982. (In case of a series, more than half of the items comprising it must have been published or broadcast during the contest year.) The date on the issue in which an article appears will be considered as the date of publication. All entries must be postmarked on or before midnight, 15 January 1983.
- Persons other than the author may submit entries in accordance with these rules. Entries will not be returned.
- Winner of the 1981 awards are not eligible for the 1982 awards. Persons winning three times are no longer eligible.
- The Judging Committee, whose decisions are final, will choose the winners. There are five awards of $1,000: for the winning entry in the over 100,000 daily circulation newspapers competition; for the winning entry in the under 100,000 circulation newspapers competition; for the winning entry in the general circulation magazine competition; for the winning entry in the radio competition; and for the winning entry in the television competition. For award purposes, newspaper circulation will be sworn ABC daily circulation as of 30 September 1982. The Judging Committee may cite other entires for honorable mention.
- The awards will be presented at the dinner meeting of the National Association of Science Writers during the Annual Meeting of the American Association for the Advancement of Science in May 1983. Travel and hotel expenses of the award winners will be paid. **Entrants agree that, if they win, they will be present to receive their awards, unless prevented by circumstances beyond their control.**

Grayce A. Finger

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