

A special need is the isolation and chemical and neurophysiological characterization of tick toxin. With respect to the host's response to arthropod bites, delineation of the classes and subclasses of immunoglobulins in the immediate hypersensitivity reactions is required, as is the differentiation between delayed, cell-mediated hypersensitivity and basophil cell responses. Oral secretions of arthropods need to be isolated and characterized immunologically and pharmacologically. A closer study of the cell types and tissue reactions at the bite site is required and physiological studies of the microvascular changes at this site and the adjacent area are warranted.

Such research would add to an understanding of the infection process in systems of arthropod vector, parasite, and host. Novel measures for disease control might result through, for example, desensitization of hosts to arthropod bites, immunization against ticks or mites, and genetic manipulation of vectors. Multidisciplinary approaches are needed to these research problems through active collaboration of different scientists, especially of entomologists, insect physiologists, biochemists, geneticists, immunologists, microbiologists, or parasitologists. In view of the many unexplained significant differences in annual and regional occurrences of vector-borne infections, several systems of host, vector, and infectious agent require attention and research.

E. J. L. SOULSBY
WILLIAM R. HARVEY

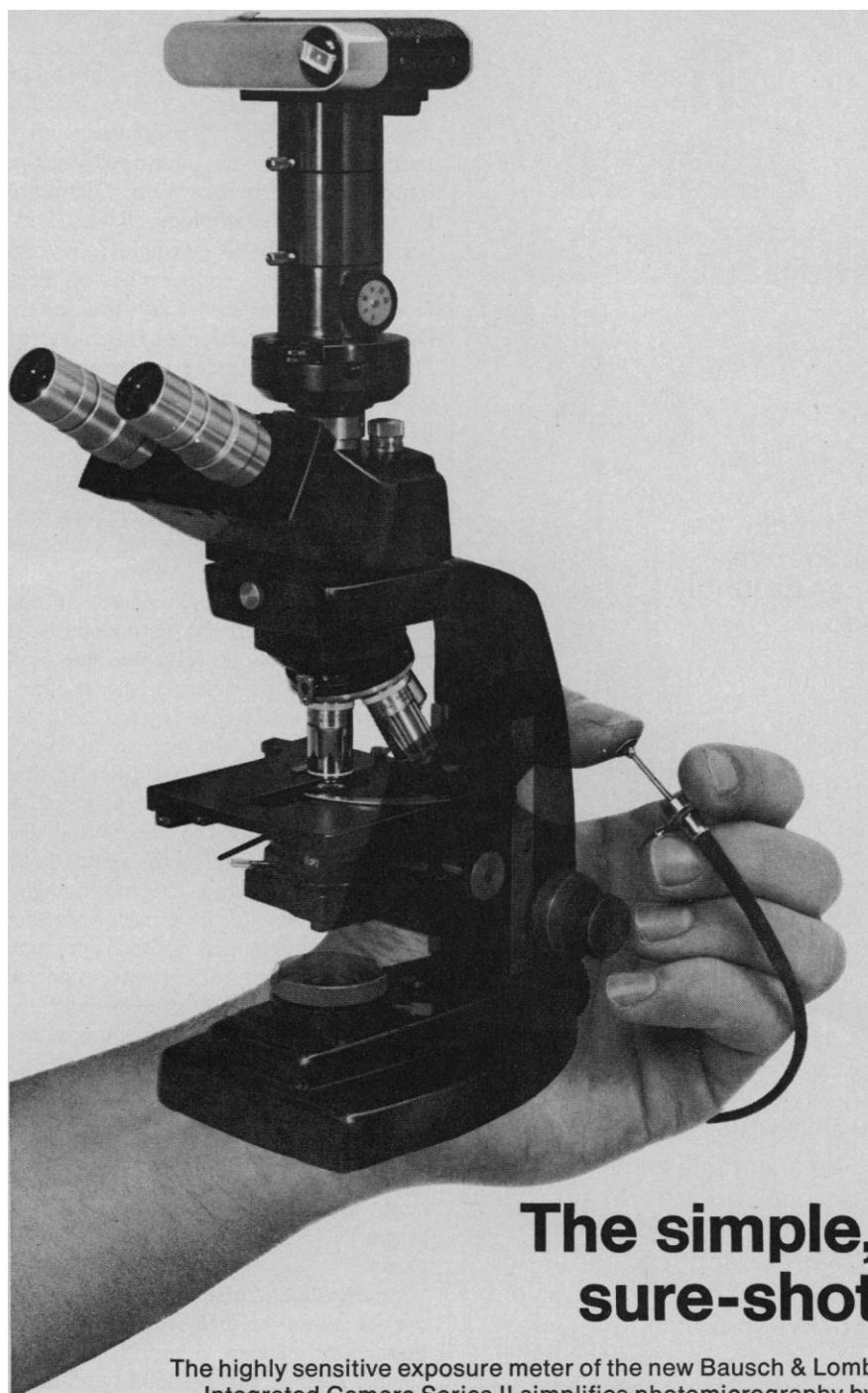
*School of Veterinary Medicine,
University of Pennsylvania,
Philadelphia 19104, and
Department of Biology, Temple
University, Philadelphia 19122*

Spontaneously Hypertensive Rat

A seminar on the spontaneously hypertensive rat was sponsored jointly by the National Science Foundation and the Japanese Society for Promotion of Science. The seminar was held in Kyoto, Japan, from 18 to 22 October 1971. In addition to the participants from Japan and the United States, the seminar was also attended by observers from Czechoslovakia, New Zealand, Sweden, Switzerland, Yugoslavia, and West Germany.

Genetic strains of hypertensive animals offer certain advantages as experi-

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mental models of hypertension, as the hypertension develops without the intervention of either surgery or other manipulatory practices. By selective breeding, a colony of spontaneously hypertensive rats was developed in the laboratory of Professor Kozo Okamoto, Department of Pathology, Kyoto University, School of Medicine, Kyoto, Japan. With the cooperation of Professor Okamoto, a colony was established at the National Institutes of Health in 1966, under the supervision of Dr. Carl Hansen. From that initial colony in Bethesda, Maryland, there now exist some 40 groups throughout the United States that have established colonies of these hypertensive rats. Colonies exist in many other countries as well.

The basic questions posed at the seminar concerned the pathogenesis of the hypertension in these animals and the questions of whether the progressive hypertension that is seen with increasing age and the course of histopathology that ensues is similar to that of essential hypertension in man. A large proportion of the papers and discussion was centered on the sympathetic nervous system and the renin-angiotension system to determine whether they were implicated in the hypertension. A number of groups reported that, if anything, these systems exhibited reduced activity as a compensatory mechanism for the hypertension. Thus, the spontaneously hypertensive rat appears to be an excellent model of human essential hypertension in that the hypertension has a hereditary component, and does not appear to be of primary renal or simple neurogenic origin.

Studies were also reported on the use of these animals to evaluate the therapeutic efficacy of antihypertensive agents. Despite the availability of many animal models to evaluate hypotensive drugs, the action of many of the commonly used antihypertensive drugs were first observed in man. In general, it was found that the spontaneously hypertensive rat appears to be a sensitive experimental model for evaluating antihypertensive drugs. Studies on two new and interesting drugs, fusaric acid and ouidenone, were presented.

Another point repeatedly brought out was that the sequelae of the hypertension in the spontaneously hypertensive rat resemble those seen in essential hypertension. These include the cerebral damage, arteriosclerosis, and cardiac hypertrophy. These changes did not occur in animals in which the pressure was

kept from rising by treatment with antihypertensive drugs.

These animals offer an opportunity to answer critical questions in regard to the problem of human essential hypertension. Furthermore, the fact that they are now generally available makes it possible to compare the results of investigators in different laboratories.

SIDNEY UDENFRIEND

SYDNEY SPECTOR

*Roche Institute of Molecular Biology,
Nutley, New Jersey 07110*

Forthcoming Events

July

1-7. International Assoc. of Medical Labs., 10th congr., Vienna, Austria. (Mrs. I. Hertz, Verband dipl und techn Assistentinnen, Spitalgasse 4, 1090 Vienna)

2-5. Environmental Acoustics, 2nd symp., London, England. (Meetings Officer, Inst. of Physics, 47 Belgrave Sq., London SW1X 8QX)

2-6. International Congr. of Physical Medicine, 6th, Barcelona, Spain. (J. S. Garcia Alsina, IFPM, Ravella 4, Barcelona 6)

2-7. Environment, 36th annual conf., Natl. Environmental Health Assoc., New York, N.Y. (N. Pohlit, NEHA, 1600 Pennsylvania Ave., Denver, Colo. 80203)

3-6. Shell Structures and Climatic Influences, Intern. Assoc. for Shell Structures, Calgary, Alta., Canada. (P. G. Glockner, Dept. of Civil Engineering, Univ. of Calgary, Calgary 44)

5-8. Shock Tube Symp., 8th intern., London, England. (Symp. Secretary, Dept. of Aeronautics, Imperial College, Prince Consort Rd., London, S.W. 7)

6-8. RF Plasma Heating, American Physical Soc., Lubbock Tex. (M. O. Hagler, Dept. of Electrical Engineering, Texas Tech Univ., Lubbock 79409)

9-12. Molecular Beams, 4th intern. symp., Cannes, France. (F. M. Devienne, Laboratoire de Physique Moléculaire des Hautes Energies, B.P.2 (06), Peymeinade, France)

9-14. American Malacological Union, Galveston, Tex. (A. S. Merrill, Biological Lab., Natl. Marine Fisheries Service, Oxford, Md. 21654)

9-14. Power Engineering Soc., San Francisco, Calif. (Meetings Officer, Inst. of Electrical and Electronics Engineers, Inc., 345 E. 47 St., New York 10017)

9-14. Public Transportation in Urban Areas, Engineering Foundation, Henniker, N.H. (EF, 345 E. 47 St., New York 10017)

10-12. DNA Synthesis in vitro, 2nd annual Steenbock symp., Madison, Wis. (Mrs. M. Parker, Dept. of Biochemistry, 420 Henry Mall, Univ. of Wisconsin, Madison 53706)

10-14. Coastal Engineering, intern. conf., American Soc. of Civil Engineers, Vancouver, B.C., Canada. (H. R. Hands, ASCE, 345 E. 47 St., New York 10017)