

## PHYSIOLOGY

# Electronic Dogs Used

➤ ONE OF THE MOST famous dogs in all history was the one on which Pavlov, the great Russian physiologist, demonstrated the conditioned reflex. This was considered the beginning of behavioral science.

Now the Pavlovian dog has an electronic rival. It is a teaching machine, an electronic canine, which is made from electronic parts that can be obtained for \$30 by mail order or from any good electrical laboratory store-room. Eight of these electronic dog machines are used by Dr. Howard S. Hoffman, assistant professor of psychology at Pennsylvania State University, in his teaching.

Another electronic model of an animal is also in use at the University of Florida College of Pharmacy, and there the contraption is used to find out how to make drugs safer. This is a problem in which there is increased interest since the thalidomide tragedies when, particularly in Europe, this tranquilizing drug administered to pregnant women resulted in malformed babies. The Florida contraption distributes a dose of electricity to its various parts in the same way that an animal would distribute a dose of a drug.

Both of these devices are mathematical machines of the variety known as the analog computer.

At the University of Florida, Dr. Edward R. Garrett, graduate research professor, sets the handling of electricity in the machine at the same rate that various animal tissues handle drugs, thus simulating the animal's bodily processes.

In the Pavlov machine in Pennsylvania one button simulates the presentation of food to a hungry dog and another button imitates the presentation of sound and light. A meter on the control panel measures the "mouth watering" of the simulated dog. Students, when they operate the device, rediscover the conditioned reflex and find that only food evokes a salivary response.

The scientists do not claim that these devices will do away with experimentation upon actual animals or human beings. The machines will not act completely the same way as living organisms. For that matter, even live animals will not give the whole story with regard to the safety of drugs and the reaction of the human system to various new and old chemicals and treatments.

But there will be more trying of new ideas and methods upon electronic dogs as a prelude to the time-honored and very useful method of trying it on the dog.

• Science News Letter, 83:36 January 19, 1963

## IMMUNOLOGY

# Birth Control Vaccine

➤ THE POSSIBILITY of a birth control vaccine is seen in immunology studies in this country as well as in India, Israel, Japan, South America and other parts of the world.

More than six million dollars is now being spent on approximately 400 research projects on reproduction related to birth and population control, a U.S. Public Health Service report reveals. Immunology and contraceptive pill research is included.

The National Institutes of Health, Bethesda, Md., said, however, that it neither "advocates nor condemns birth control" or any of the methods described in the report.

The report, in the form of an annotated bibliography, covers such diverse topics as the effect of maternal vitamin E deficiency on the production of monsters and the effect of irradiation on the sex glands.

The report assembles all the easily available information about present scientific research on the biology of reproduction, particularly relating to birth control problems. The National Institutes of Health is now supporting 170 of the projects at a cost of \$2,787,161. The Population Council, Ford Foundation, Rockefeller Foundation, the U.S. Army, National Science Foundation, Atomic Energy Commission, Bureau of State Services, pharmaceutical firms and other agencies are also listed in the report as supporting the research.

Family planning research in a number of foreign countries is supported by the

Population Council, which derives its support almost entirely from Rockefeller and Ford Foundation funds.

Fourteen pharmaceutical houses are doing birth control research, largely with contraceptive pills for both men and women.

The effect of contraceptive pills and immunology, which are the two relatively new fields of inquiry, are expected to command increasing emphasis in the future.

There is little doubt, the report states, that "effective contraceptive techniques" are available. "Human error" accounts for their failure.

The information compiled in the report was collected from the Science Information Exchange of the Smithsonian Institution in Washington, D. C., and from the personal knowledge of NIH staff and outside advisers.

• Science News Letter, 83:36 January 19, 1963

## ZOOLOGY

# Pink Rattler Is Famous Live Exhibit in Museum

➤ A LIVE RATTLESNAKE, a pink one, is the most famous exhibit in Kansas State University's zoology museum. Captured in Grand Canyon in June, it is in its seventh month of captivity, a record for this rare species. Roy Garrigues, graduate student, is writing his master's thesis on the snake.

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# Questions

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## SCIENCE NEWS LETTER

VOL. 83 JANUARY 19, 1963 NO. 3

Edited by WATSON DAVIS

The Weekly Summary of Current Science, published every Saturday by SCIENCE SERVICE, Inc., 1719 N St., N.W., Washington 6, D. C., North 7-2255. Cable Address: SCIENSERV.

Subscription rates: 1 yr., \$5.50; 2 yrs., \$10.00; 3 yrs., \$14.50; ten or more copies in one package to one address, 7½ cents per copy per week; single copy, 15 cents, more than six months old, 25 cents. No charge for foreign postage. Change of address: Three weeks notice is required. Please state exactly how magazine is addressed. Include postal zone number.

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Printed in U.S.A. Second class postage paid at Washington, D. C. Established in mimeograph form March 13, 1922. Title registered as trademark, U.S. and Canadian Patent Offices. Indexed in Reader's Guide to Periodical Literature, Abridged Guide, and the Engineering Index. Member of Audit Bureau of Circulation.



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