PUBLIC HEALTH

Radioactivity Tags Fleas

➤ TO UNCOVER new facts about fleas that will provide more insight into how the insects spread plague among wild animals and to man, scientists can now use radioactive chemicals.

Success in getting a radioactive "handle" on fleas, apparently for the first time, has been reported by a team of scientists working for the University of California School of Medicine and the U. S. Public Health Service. The scientists are Drs. S. F. Quan, W. V. Hartwell and Kenneth G. Scott.

Fleas have been considered uncommonly difficult to tag with radioactivity because no way could be found to get the radioactivity into the insect's system.

However, the California scientists noted that cerium 144 is very sticky and adheres tenaciously to living things. So they put fleas on water containing a suspension of cerium 144, and the isotope stuck to the insects' horny coating.

Now the scientists can begin field studies, which will include tagging fleas, turning them loose on wild rodents, and tracing them with counters as the insects hop from rodent to rodent and to other animals and man.

The radioactivity of cerium 144 lasts for a considerable time, and the quantity needed is so minute as to be entirely safe for the host animal, scientific workers and any possible casual human contacts.

The radioactive fleas will not, of course, be infected with plague. The scientists are just interested in the flea's living habits. They want to know how readily the insect migrates from one animal residence to another, from wild to domestic rodents, and then on to man. They also expect to learn how long fleas live in their natural environment.

The radioactivity tagging method may also be useful in similar studies of ticks, lice and other insects whose habits have been difficult to trace.

Plague, the ancient "black Death," is a rare affliction in the United States, although deaths from it occasionally occur. There are permanent reservoirs of the infection in wild rodent populations, however.

Science News Letter, October 13, 1956

MEDICINE

Ulcers Not So Common

➤ STOMACH ULCERS were found less often than expected when a group of 500 business executives were examined by the Health Research Center of Chicago, the American Management Association meeting in New York was told.

Only eight percent of the 500, however, were free of disease and these were invariably men under 40. More than half of the 500 had previously undiscovered disease. Included in the undiscovered diseases was heart disease, found in one out of ten.

Cancer was found in two percent of the executives, and one out of nine had underactive thyroid glands with an excess of fatty elements in the blood, thought to be a factor in hardening of the arteries.

Reporting the research study, Dr. Charles E. Thompson of Chicago gave the following pictures of typical executives at various ages:

The young executive under 40 is physically strong, athletic, energetic and ambitious; he enjoys the combat of business and works from 10 to 12 hours a day.

At 40 to 45, the executive becomes more obese, balding, aware "of a thing called fatigue," able to work only about eight hours a day without strain, less active physically. "Diseases are beginning to appear; however, his preoccupation with his work continues—the psychological drive to achieve is the outstanding feature of this man's philosophy. This has a tendency to make him ignore the early warning signs of disease. He is a man of achievement, of tensions, of economic security and fatigue."

The senior executive over 55 falls into two classifications: the top executive and his associates. The man beyond 55 who is the outstanding physical and mental specimen, Dr. Thompson said, is usually the chairman of the board or the president of the company. He is likely to be physically fit as the result of a "rather stern, self-disciplinary mode of living."

The associate, on the other hand, is more likely to be overweight by the time he is 60, may have high blood pressure, one or more heart attacks, frequently some arthritis or gout, an occasional cancer. Psychologically, he is "a successful, plagued man with a moderate amount of disease."

Science News Letter, October 13, 1956

ICHTHYOLOGY

Search on for Poison Of Dangerous Fish

➤ THE SEARCH is on for the venom of poisonous fish. Starting at the Scripps Institution of Oceanography, La Jolla, Calif., Dr. Paul R. Saunders of the University of Southern California will conduct the poison search that eventually will take him to Singapore.

Stonefish, the most venomous fish known, are among those he will seek. They inflict wounds producing pain and other symptoms comparable to the bite of a rattlesnake. Paralysis, generalized weakness and, in severe cases, convulsions and death may come from the venom of these fish.

Although these fish are found over wide areas of the Pacific and Indian oceans, in shallow water, under rocks or partially buried in the bottom where they menace waders, scientists do not know the chemical nature of their poison or the action of it in the body.

These are the things Dr. Saunders hopes to discover about stonefish and sculpin, a scorpionfish, found off the coast from central to lower California. Sculpin venom causes intense pain and swelling but so far no deaths have been reported from it.

Science News Letter, October 13, 1956

SCIENCE NEWS LETTER

VOL. 70 OCTOBER 13, 1956 NO. 15

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. Edited by WATSON DAVIS.

Subscription rates: 1 yr., $5.50; 2 yrs., $10.00; 3 yrs., $14.50; single copy, 15 cents, more than six months old, 25 cents. No charge for foreign postage.

Change of address: Three weeks notice is required. When ordering a change please state exactly how magazine is now addressed. Your new address should include postal zone number if you have one.

Printed in U. S. A. Entered as second class matter at the post office at Washington, D. C., under the act of March 3, 1879. Acceptance for mailing at the special rate of postage provided for by Sec. 34.40, P. L. and R., 1948 Edition, paragraph (d) (act of February 28, 1925; 39 U. S. Code 283) authorized February 28, 1950. 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 Audit Bureau of Circulation, Advertising Representatives: Howland and Howland, Inc 1 E. 54th St., New York 22, ELdorado 5-5666, and 435 N. Michigan Ave., Chicago 11, SUperior 7-6048.

SCIENCE SERVICE

The Institution for the Popularization of Science organized 1921 as a non-profit corporation.

Board of Trustees — Nominated by the American Association for the Advancement of Science: Paul B. Sears, Yale University; Karl Lark-Horovitz, Purdue University; William W. Rubey, U. S. Geological Survey. Nominated by the National Academy of Sciences: Harlow Shapley, Harvard College Observatory; George W. Corner, Rockefeller Institute for Medical Research; Edward U. Condon, Washington University. Nominated by the National Research Council: Leonard Carmichael, Smithsonian Institution; Jerome Hunsaker, Massachusetts Institute of Technology; I. I. Rabi, Columbia University. Nominated by the Journalistic Profession: Michael A. Gorman, Flint Journal; Neil H. Swanson, Garrison, Md.; O. W. Riegel, Washington and Lee University. Nominated by the Scripps Estate: John T. O'Rourke, Washington Daily News; Charles E. Scripps, Cincinnati, Ohio; Edward J. Meeman, Memphis Press-Scimitar.

Officers — President: Leonard Carmichael; Vice President and Chairman of Executive Committee: Charles E. Scripps; Treasurer: O. W. Riegel; Secretary: Watson Davis.

Staff — Director: Watson Davis. Writers: Jane Stafford, Marjorie Van de Water, Ann Ewing, Howard Simons, Dorothy Schriver, Helen M. Davis. Science Clubs of America: Joseph H. Kraus, Margaret E. Patterson. Photography: Fremont Davis. Production: Priscilla Howe, Marcia Nelson. Interlingua Division in New York: Alexander Gode, 80 E. 11th St., GRamercy 3-5410.