

PHYSIOLOGY

Dogs Kept Young Looking By Protecting Nerves

➤ THE WAY to keep an old dog healthy and young looking while his contemporaries grow gray and decrepit with age is to protect his nerves, it appears from studies reported by Prof. M. K. Petrova, 70-year-old former colleague of Ivan Pavlov, at the tenth physiological conference held in Moscow in memory of the great Russian physiologist.

Prof. Petrova has worked with the same dogs for 15 years, subjecting some to various nerve injuries and carefully guarding others from any sort of nerve injury. The dogs suffering from nervous injuries, she noted, have all grown decrepit while the healthy dogs still look comparatively young. The latter do not show the gray hairs, bald spots and affected teeth of the former who, in addition, also suffer from skin diseases and cancer-like tumors.

The conference was organized by the biology section of the Soviet Academy of Sciences and many of the reports were by former pupils of Pavlov, the Soviet Scientists' Anti-Fascist Committee states in an account of the meeting written especially for release by Science Service.

Science News Letter, May 6, 1944

MEDICINE

Penicillin May Be Remedy For Typhus Fever

➤ PENICILLIN may be an effective remedy for typhus fever, dreaded war and famine plague, and spotted fever. This possibility is seen by Dr. Donald Greiff and Dr. Henry Pinkerton, of St. Louis University, as a result of experiments they report. (*Proceedings of the Society for Experimental Biology and Medicine.*)

They injected typhus fever germs, technically known as rickettsiae, into the yolk sacs of developing hens' eggs. Penicillin was subsequently injected into 18 of the infected yolk sacs. Most of the untreated, control eggs died with heavy typhus infection between the ninth and thirteenth days after injection of the germs. Four of the penicillin-treated eggs died within six days, which was before the usual period for massive growth of the typhus germs. The deaths were believed due to injury from the injections.

A bit of the yolk sac membrane of each egg was smeared on a glass slide

and examined under the microscope for typhus germs. The estimated number of germs in such specimens from the untreated eggs ranged from a low of ten to 100 in three eggs to as many as 5,000 to 8,000 in seven eggs. In the treated eggs, however, the estimated numbers of germs ranged from less than one in nine eggs to 1,000 to 5,000 in one egg.

The growth of the typhus germs was strikingly checked by the penicillin but, the scientists state, in no instance did the germs completely disappear.

They are now trying the effect of penicillin on experimental typhus and spotted fever infection in mice and guinea pigs. The experiments with the eggs, they state, suggest the possibility "that penicillin might be effective in these diseases."

Science News Letter, May 6, 1944

HORTICULTURE

New Florida Navel Orange Receives Plant Patent

➤ A PLANT PATENT, numbered 625, has been issued on a new kind of navel orange tree, that appeared as a sport or variant in the grove of D. J. Nicholson of Orlando, Florida. As he describes it, the new fruit is of moderate size, definitely tart and tangy but with high sugar content, and a firm skin that does not release much of the stinging citrus oil that is characteristic of many familiar navel orange types.

Science News Letter, May 6, 1944

CHEMISTRY

Copper Is Now Used To Make Synthetic Rubber

➤ COPPER has found a place as a new and powerful agent in the production of Buna S synthetic rubber, declared Dr. A. A. Somerville of the R. T. Vanderbilt Co., New York, at the New York meeting of the American Chemical Society's rubber division. Copper has long been avoided by the natural rubber industry.

Two new vulcanizing accelerators for synthetic rubber, both chemical compounds of copper, are several times as powerful as the conventional type now in use, he stated. Why copper speeds vulcanization is still a mystery. A large number of chemical compounds of copper were tried by Dr. Somerville in his investigations and found to be effective. Sixteen other metals were tried and found to be without effect.

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IN SCIENCE

GENERAL SCIENCE

Liberty Ship To Be Named For Dr. William E. Ritter

➤ A LIBERTY SHIP has been named for Dr. William E. Ritter, co-founder and honorary president of Science Service and one of America's leading biologists, the U. S. Maritime Commission has announced.

The launching of the S. S. "William E. Ritter" was the first week in May, and the ship that bears this name was built at the Permanente Metals Corporation Yard No. Two at Richmond, Calif., not far from the University of California with which Dr. Ritter was long connected.

Dr. Ritter's death on Jan. 10 closed a long and eventful career in science during which he brought into existence with the aid of the late E. W. Scripps the Scripps Institution at La Jolla and Science Service. Dr. Ritter was born in 1856 in Wisconsin. (*See SNL, Jan. 22*)

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ORDNANCE

Garand Patents Device To Test Muzzle Pressure

➤ JOHN C. GARAND of the Springfield Arsenal, designer of the M-1 rifle, has taken out another patent, rights in which are, as customary, assigned royalty-free to the government. The patent, No. 2,347,188, covers a simple but effective testing device for measuring the powder pressure in the rifle bore just back of the muzzle.

The test barrel has a small hole bored in it, into which a short piston is fitted. On the outer end of this rests a bar of accurately known weight, between two upright rods that act as guides. One of the rods is marked off in inches or centimeters, and has a light ring around it that serves as a pointer.

When the rifle is fired, the sudden pressure of the powder pressure behind the bullet kicks the little piston upward, and it in turn lifts the weight to a height that corresponds to the muzzle pressure. The device is useful in determining the performance of various types of cartridges.

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CE FIELDS

ENGINEERING

Higgins Patents Lighters Carrying MT Boats

► **BIG, FAST** lighters for the unloading of cargo ships at some rendezvous far out at sea, and equipped with means for actively fighting submarines should they attack, are the newest contribution of the designers in the Andrew J. Higgins establishment in New Orleans. U. S. patent 2,347,412 has recently been issued on this invention.

Principal means for defense against sea-wolves is a pair of fast little motor craft carried in cradles on the afterdeck, which slopes toward the stern, forming a partial ramp. In case of need, the ramp would be completed by loosening the big boat's transom ("tailboard" or "end-gate" in landlubber language), which is hinged so that the dropped upper edge can trail in the water. Down this would slide the waspish little fighting boats, to assail the assailant with depth charges, light cannon and machine guns.

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HORTICULTURE

Zoo Victory Gardens Help Feed the Animals

See Front Cover

► **LEO, THE LION,** and Jocko, the monkey, are going to have plenty to eat this year—at least if the zoos have anything to say about it. Food shortages and lack of manpower have created major headaches in American zoos, and many ingenious schemes have had to be developed to ameliorate the problem.

Few animals get rationed food and almost every zoo has a victory garden. They range in size from small plots for those with limited space to almost 150 acres where a productive zoo farm is a regular feature. Practically every vegetable known to North American agriculturists is raised in at least one of them.

A survey conducted by the American Association of Zoological Parks and Aquariums shows that last year most crops ran to corn, soybeans, tomatoes, cabbages and other staples; but peas, spinach, cucumbers and even water-melons were raised.

A head of cabbage is tempting enough to cause the 30-year-old hippopotamus at the Philadelphia Zoological Garden, shown in the picture on the cover of this SCIENCE NEWS LETTER, to open his mouth wide.

In the garden from which the animals of the San Diego Zoo will be fed, sunflowers, sweet potatoes and peanuts play a prominent part. Since corn is at a premium on the West Coast, the rest of the farm is being devoted to that crop.

Approximately 500 bushels of carrots and five tons of cabbage will be grown in the Detroit Zoo, repeating last year's success. Monkeys seem to be extremely fond of kale, so that green is included in the garden recently planted at the Portland Zoological Park in Oregon. Last year over 7,000 pounds of kale were harvested there by zoo gardeners.

Many zoos make special arrangements with farmers to secure culls, undersized and misshapen vegetables. Others persuade grocery stores to save unsold lettuce and cabbage, beets and carrot tops for their use.

Many of the parks save all their grass cuttings for the animals. Others secure browse by pruning forest trees. In some cities the department of parks cooperates by cutting and delivering hay from public parks and lands.

Providing substitutes for foods that have been absolutely unobtainable or where the price is exorbitant has been a real problem in many instances. The scarcity of bananas, for instance, necessitated the use of dehydrated bananas and boiled sweet potatoes. In other cases substitutions were well-nigh impossible.

Least troubled by difficulty over substitutes was the Philadelphia Zoo. Roger Conant, the curator, reports that they began experimenting with specialized animal diets back in 1935 and for many years have been using highly satisfactory, though unorthodox, foods for most members of the animal collection. Basic rations call for beet pulp, soybean meal, dry skim milk, oyster-shell flour and grain meals of many kinds.

Few of the zoos have used anything but horse meat for some years. But various factors, including the rather wide use of horse meat for human consumption, have tended to make this scarce in some areas.

Attendance at zoological parks which are located close to public transportation has been particularly good. The animals are doing their best to help the harried war worker and average citizen recuperate from war jitters.

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CHEMISTRY

Plastic Replaces Hair In Weather Instrument

► **REMEMBER** the cry that went up during the early days of the war for long blond hair—only naturally blond hair would do—to be used in instruments for obtaining vital information concerning the weather? It was not needed in large quantities, but long hair alone was believed capable of doing the work satisfactorily. Blondes will be relieved to know that the Weather Man is no longer eyeing their golden tresses with envy—science has devised a substitute.

A coated plastic, known as an electric hygrometer strip, is now being used to measure moisture changes in different layers of air with great accuracy. The strips are part of a radiosonde which, attached to a free balloon, soars into the stratosphere, continually radioing to an automatic recorder on the ground data such as wind velocity and icing conditions.

Edges of the five-inch strips are treated to provide electrical conducting surfaces. This substitute for human hair, long regarded as the most sensitive element obtainable for measuring variations in moisture, was developed by engineers of the Friez Instrument Division of Bendix Aviation Corporation and the Bureau of Standards under the sponsorship of the Navy.

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GENERAL SCIENCE

Wellesley Summer School To Teach Techniques

► **A SUMMER** school of techniques will be held for the first time on the Wellesley College campus during June, July and August. The general aim of the school will be to enable both men and women to increase their proficiency in the techniques used in special fields.

There will be classes in chemistry, biology, geology, physics and mathematics, utilizing the college science laboratories. The student will have an opportunity to learn some techniques in writing and to study labor relations. Courses will be offered in conversation and translation of foreign languages.

The needs and interests of present war workers, teachers, and those preparing for reconstruction work abroad have been kept in mind in planning the courses offered.

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