

## CHEMISTRY

**DDT in Soap Keeps Dogs Free of Fleas for Months**

► DDT IN DOG SOAPS promises to eliminate the flea problem altogether, if experimental results published in the British scientific journal, *Nature* (Dec. 22), are borne out in general practice.

Three experimenters connected with commercial firms took a tip from the fact that DDT-treated clothing retains insect-banning powers even after several washings. They incorporated DDT in ordinary household soap, and used it in washing 12 dogs, all of long-haired breeds and all infested either with fleas or dog lice. Not only did the vermin all die promptly, but the animals did not become re-infested, though all were exposed. Only one of the dogs picked up a few fleas nine weeks after treatment.

Analysis of samples of hair clipped from the dogs, after washing with DDT soap and rinsing, indicated DDT concentrations of from five to seven hundredths of one per cent. "It is surprising," the experimenters comment, "that these minute amounts of DDT should give such a lasting effect." However, they also call attention to the insecticidal power remaining in clothing that shows only a hundredth of one per cent content of DDT.

The experimenters reporting are G. A. Campbell of the Geigy Company, Ltd., F. C. Hymas of Spratt's Patent, Ltd., and T. F. West of Stafford Allen and Sons, Ltd. The Geigy Company, Ltd., has applied for a British patent on the use of DDT in dog soap.

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## CHEMISTRY

**Nylon Has Many Uses In Addition to Hosiery**

► TO THE USE of nylon for hosiery, many additional uses may be added. It was extensively employed during the war for naval rope, glider lines, paintbrush bristles and many other purposes. Now the material will be employed in making unbreakable tableware, drinking cups, combs, and articles too numerous to mention. Its strength, toughness and elasticity are responsible.

Those who think of nylon primarily as a yarn for hosiery are due for many pleasant surprises, Dr. W. W. Heckert of the du Pont Company declared at a recent section meeting of the American Chemical Society in Columbus, Ohio.

He pointed out that nylon had scarcely been introduced into the hosiery field when it was switched entirely to war uses. Dr. Heckert is a scientist of the company.

That nylon was developed in the first place, he said, is a tribute to the persistence of scientific workers who conducted the long-range fundamental research program responsible for the product. The program was begun in 1928, he explained, and was designed primarily to obtain basic knowledge about chemical materials and processes, with no thought that the information so developed would be of immediate practical value.

In 1938, the company announced the development of new synthetic materials from which textile fibers stronger and more elastic than any previously known could be spun. There still remained the tasks of producing yarn and the necessary machinery, and to put the yarn to practical application.

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## ENGINEERING

**New High-Efficiency Fluorescent Lamp**

► THE WESTINGHOUSE Electric Corporation is assignee of two new patents on lamps, Nos. 2,392,305 and 2,392,333 respectively. The first is on a high-efficiency fluorescent lamp, developed by Dr. N. C. Beese of Verona, N. J. It is shaped like the ordinary incandescent bulb and utilizes arsenic instead of mercury to produce the ultraviolet radiations that produce visible light when they strike the phosphor minerals distributed on the inside of the outer glass envelope. With the use of zinc cadmium sulfide as phosphor, a continuous spectrum, closely approximating daylight, is obtained. Another advantage is efficient operation over a wider temperature range than is possible with the familiar mercury lamps.

The second lamp, devised by Chalmers Morehead of East Orange, N. J., made its bow to the public only a short time ago, as the fluorescent bulb for Christmas-tree illumination. This little lamp is cooler in operation, and hence consumes less current; it gives more pleasing color effects than are obtainable with colored glass or filters; finally, if one unit burns out it does not extinguish the whole series, as is the case with the older incandescent Christmas-tree lamps.

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**IN SCIENCE**

## ENTOMOLOGY

**Carbon Dioxide Is Best Anesthetic for Insects**

► CARBON DIOXIDE, the gas that puts the fizz in soda-fountain drinks, as well as the bead in beer, has been found better than ether as an anesthetic for use on insects being subjected to delicate surgical procedures needed in certain types of research, reports Dr. Carroll M. Williams, Harvard University research fellow. (*Science*, Jan. 11)

Dr. Williams describes a very simple operating stage which he uses in his work. It consists merely of a porcelain funnel with a perforated plate across its bottom. The spout of the funnel is attached to the outlet of a carbon dioxide cylinder, and the funnel itself is set into an opening in the laboratory table so that the operator can observe his work through a dissecting microscope.

Since carbon dioxide is heavier than air, it tends to stay within the funnel, and is not too rapidly carried off by stray air currents. Unlike ether, it has no odor, and in low concentrations does not affect the experimenter. Insects recover rapidly when it is turned off, and seem none the worse after even prolonged anesthesia.

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## CHEMISTRY

**Featherweight Material Has Enormous Strength**

► A NEW featherweight construction material of enormous strength is announced by the Glenn L. Martin Company and also by the U. S. Plywood Corporation. It is predicted by these two companies that the new material will revolutionize construction techniques in the whole field of transportation.

It is made of a newly-developed "honeycomb" of cloth or paper sandwiched between and firmly bonded to thin sheets of aluminum, stainless steel, wood veneer or plastic. It is claimed that the new sheets are far stronger than anything at the same weight now being manufactured. A practical method of bonding the metal or veneer sheets to the honeycomb makes the new product possible.

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# ICE FIELDS

## PALEONTOLOGY

### Bulldozer Makes Possible Quick Rescue of Fossils

► A BULLDOZER, husky wartime pet of Army Engineers and Navy Seabees, demonstrated its value to peacetime science when a new flood control dam on the Licking river threatened to wipe out a valuable fossil bed at Lower Blue Licks Spring, Dr. Willard R. Jillson, consulting geologist of Frankfort, Ky., reports. (*Science*, Jan. 11)

To demonstrate that great quantities of scientifically valuable fossils are still embedded in the Ice Age deposits at the site, Maj. Victor K. Dodge of Lexington, a well-known amateur naturalist, personally sponsored a "quickie" exploration. A bulldozer rapidly stripped off the non-fossil-bearing three feet of recent top soil, gravel and loose limestone. Then the diggers went to work with hand tools.

They found bones and tusks of a mastodon, skulls and other bones of extinct giant bison, and what appears to be part of the jawbone of a giant Ice-Age beaver, first to be recognized at this locality. The fossils were removed to the museum of the University of Kentucky, where they have been cleaned and placed on exhibition.

After the fossils had been dug up, the bulldozer went to work again, refilling the excavation. All the work was accomplished during one day.

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## PHYSIOLOGY

### Thoroughbred Horses Have More Hemoglobin

► THOROUGHBREDS really do have blood that is different from that of other horses, investigations by Dr. John Macleod of Cornell University Medical College and Dr. Eric Ponder of the Nassau Hospital at Mineola, N. Y., have shown. (*Science*, Jan. 18).

The two scientists counted red corpuscles and measured the oxygen-carrying hemoglobin in blood samples from thoroughbred and draft-type, or "cold-blooded," horses. They found that the thoroughbreds have smaller red cells than the cold-blooded horses, and that the hemoglobin concentration in

their cells is lower. However, the thoroughbreds have so many more red cells per cubic millimeter of blood that the actual quantity of hemoglobin per unit volume is larger in the race horses than in their heavier, slower brethren.

Drs. Macleod and Ponder are inclined to believe that the difference is hereditary, rather than the results of training or conditioning processes which prepare thoroughbreds for racing. This supposition is supported by the fact that the blood differences noted hold good for thoroughbreds at all ages, even for newly foaled colts.

"It may very well be," they state in conclusion, "that the increased hemoglobin content and slightly smaller cell size confer an advantage on the thoroughbred when running at high speeds, and so these may be characteristics which have become accentuated in the process of the 'improvement of the breed.'"

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## PHYSIOLOGY

### Electric Eel Has Used Radar Principle for Years

► THE ELECTRIC EEL has used principles somewhat similar to radar for millions of years to locate living food. Dr. C. W. Coates of the New York Zoological Society demonstrated at a recent meeting of the organization. The eel has two kinds of discharges, he showed, one to determine the presence of fish, frogs or other animals, the other to stun or kill the prey.

In the muddy South American streams where they live, electric eels send out frequent electric impulses which, striking such food possibilities as other fish or frogs, bounce back and affect the senders' sensory apparatus. Having detected food or sensed an enemy, the eel discharges a shock of several hundred volts, sufficient to stun or kill almost any animal in the vicinity.

The demonstration given by Dr. Coates was an enlargement of previous shows, made possible by the use of war-developed equipment. He used an oscillograph and a special projection lens. With these the exploratory impulses and the lethal shocks were shown on a large screen in impressive wave forms.

In the demonstration two electric eels were used. They were in a water-filled tank about six feet long, with conducting screens of electrodes at both ends. The eels were about four feet in length. He showed the intensity of their discharges by lighting 33 two-watt neon lamps.

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## GENERAL SCIENCE

### \$1,000 Award for Best Science News Writing

► SCIENCE NEWS writing, the bridge between highly specialized research and general public understanding, is to be the subject of formal and substantial recognition by the American Association for the Advancement of Science.

A fund, known as the George Westinghouse Science Writing Award Fund, has been established by the Westinghouse Educational Foundation, which will provide an annual prize of \$1,000 to be given to a newspaper writer for outstanding science reporting. There will also be an annual citation to the newspaper whose science news coverage in the preceding year is adjudged most complete and authoritative and most interestingly presented.

The first annual awards, covering the present year, will be made at the mid-winter meeting of the Association, to be held in December, 1946. Details of judging and presentation will be announced at the spring meeting of the Association in St. Louis, March 27 to 31.

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## PHARMACY

### Worked 24 Hours a Day On Antimalarial Drug

► FOR A THREE-WEEK period, chemists at the University of Illinois worked 24 hours a day, in three shifts, to speed production of a chemical needed for making the new antimalarial drug, SN 7618.

The chemical is 4,7-dichloroquinoline. An original and simple method of synthesizing it was worked out by two of the university's scientists, Prof. Charles C. Price and Royston M. Roberts, in August, 1944.

Development of this simple method of synthesis made possible large-scale commercial production of SN 7618. Lack of such a method caused German scientists, who had also developed SN 7618, to discard it as an antimalarial.

The existence of SN 7618 was kept secret until the first of this year (Jan. 4), when the Board for the Coordination of Malarial Studies announced that it had been developed and found much superior to atabrine for suppressing malaria. Its chief advantages are that it need only be taken once a week, instead of daily, to suppress malaria attacks and that it does not turn the skin yellow.

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