

MEDICINE

Rat Poison Drug Best Of Kind for Blood Clots

► A POWERFUL rat poison, developed at the suggestion of British authorities as a solution to their problem of rodent control along their shores, has turned out to be the best drug of its kind for saving patients threatened with dangerous clots in their blood vessels.

The drug is warfarin, which has been used widely in this country as well as Britain for rodent control. Its value as an anti-clotting treatment was reported by Dr. Shepard Shapiro of New York University College of Medicine at the meeting of the American Medical Association in New York.

Warfarin was developed by Dr. Karl Paul Link of the University of Wisconsin, who discovered years ago that dicumarol is the material in spoiled sweet clover which killed cows by causing fatal bleeding. Following this discovery, dicumarol was made into a medicine for patients whose blood clotted too fast.

Warfarin is also a coumarin compound. It kills rats by causing fatal hemorrhages in them. As an anti-clotting medicine for humans, it is more effective than the other coumarins, Dr. Shapiro reported, because it takes effect faster and its action lasts longer. A further advantage is that it is highly susceptible to counteraction by vitamin K.

This means that if a patient should get too much warfarin and be in danger of severe bleeding, he can be readily saved by the anti-bleeding vitamin K.

Warfarin has so far been used on an experimental basis only for human patients. It is expected to be available to doctors and their patients generally within months.

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DENTISTRY

See Your Dentist or Wear False Teeth

► IF YOU are one of those who puts off the regular once a year or oftener visit to your dentist, some figures from the American Dental Association may startle you.

Those who have not seen their dentist in more than three years are far more likely to need false teeth than those who are getting periodic dental treatment, the association found in a survey of the dental needs of 37,911 patients.

The survey showed that 16.7% of women in all age groups who had not seen a dentist in more than three years needed complete artificial dentures (false teeth), compared with only 5.3% who had last visited the dentist one and one-half to two years previously, 3.9% who saw the dentist a year earlier, and 1.9% who were under care six to 11 months before.

For men, the survey showed that 19.8% who had not received dental treatment in more than three years required complete

artificial dentures, compared with 6.5% who had been under treatment one and one-half to two years earlier, 5.4% who had seen a dentist a year before, and 3.5% who saw a dentist six to 11 months before.

The sharpest rise occurred in the over-50 age group with 38% of the women who had not visited their dentist in more than three years needing complete dentures, contrasted with 5.4% for those visiting their dentist six to 11 months earlier.

For men, the difference was even more marked. The percentage of those over 50 requiring artificial dentures was 44.7% for those who had not seen the dentist in more than three years, compared with 7.9% for those visiting the dentist six to 11 months before.

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MEDICINE

Remodel Sulfa Drugs For Heart Failure Victims

► THE FIRST of the sulfa drugs, sulfanilamide, has been remodeled into a new drug for patients with congestive heart failure. The drug has given good results in heart patients with dropsy, it was reported to the American Medical Association.

The excess water and sodium and potassium being held in their tissues, producing a water-logged condition, is rapidly eliminated when this remodeled sulfa drug is given. Heretofore, doctors have relied chiefly on mercury compounds for relieving the edema, or dropsy, of congestive heart failure, but mercury compounds are not without danger.

Sulfanilamide was long ago discovered to have an effect on the kidneys because it stopped the action of a body enzyme called carbonic anhydrase.

New sulfa drugs were developed by changing the part of sulfanilamide that had this effect. But Drs. J. M. Ruegsegger, B. W. Carey and S. M. Hardy of Lederle Laboratories figured this kidney effect of sulfanilamide might be useful in some ailments, such as congestive heart failure.

So they remodeled sulfanilamide to increase this action. The new drug, which will be known under the trade name Diamox, is the result. Chemically, it is 2-acetylamino-1,3,4-thiadiazole-5-sulfonamide. It has no anti-germ activity.

Because carbonic anhydrase is found in many body tissues including the brain, the new drug which stops the anhydrase promises to have a wide range of usefulness. It has been given to 53 children with epilepsy that could not be controlled by other drugs.

More than a third of these little patients were helped. Six have been free of seizures for from four to 12 months and 12 more have shown 50% improvement in both number and severity of seizures.

Migraine, stomach ulcers and toxemia of pregnancy are other conditions which the new drug may help. Diamox is not yet on the market, but is expected to be by July.

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IN SCIENCE

SURGERY

Bone Flakes, Penicillin Make Bone Graft Glue

► A NEW York butcher, to his surprise, helped U. S. Air Force surgeons show a new bone grafting development at the meeting of the American Medical Association in New York.

The technique consists in shaving the outer part of bone into fine flakes. When mixed with blood and penicillin, these bone flakes act as a kind of glue to hold a bone graft and make it grow strong.

The bone-shaving machine was shown by Lt. Col. Robert W. Augustine, USAF (MC), of the U. S. Air Force Hospital, Maxwell Air Force Base, Ala.

The butcher played his part when Col. Augustine sent a nurse to market to get some beef bones for use during the demonstration of the new machine. When the nurse asked to have the meat all cut off the bones, the amazed butcher wanted an explanation, then presented the bones as a gift.

The outer part of bone, Col. Augustine explained, is believed to be better for grafting because it is harder. Getting this hard bone into the right size and shape for fitting in crevices led to designing the bone-shaving machine. The flaked bone can be used by itself or in the penicillin blood paste form.

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TECHNOLOGY

New Cotton Picker Gives Cleaner Product

► CLEANER PICKING of cotton from the stalk and less loss to the ground will be benefits derived from a new mechanical picking aid developed at Texas A. and M. College, College Station, Tex.

Prof. H. P. Smith of the college's department of agricultural engineering has applied for patent on a new rubber-paddle-type roller for use on mechanical cotton-pickers.

Tests of the roller during the last harvest season showed the rubber-paddle roller increases efficiency of such machinery on almost all types of cotton tested.

Average yields from nine varieties in one series of tests ranged from 93.4% to 99.5% of all cotton on the plant to the rubber-paddle roller.

Loss on the ground which ranges from 98.5 to 243.6 pounds per acre with other types of rollers and strippers was cut to 70.3 pounds per acre by the new roller.

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CE FIELDS

ARCHAEOLOGY

Folsom Man Antedated Yuma Thousands of Years

► NEW EVIDENCE that ancient Folsom men lived in America's Southwest long before the people known to scientists as Yuma men is presented in a report by the Smithsonian Institution.

The evidence was unearthed in a small walled valley in the Staked Plains of eastern New Mexico. This valley was once filled by the waters of a small lake during the last of the last ice age. It was a waterhole used by mammoths and the now-extinct bison that roamed the West in those long-ago days.

Some thousands of years ago human hunters went to the water hole, too, and speared the great beasts when they became mired in sticky mud of the lake bottom.

Digging deep in the ground at the site, the scientists found a stone spear point close to the bones of an extinct bison. It was of the Folsom type, a grooved point, delicately flaked.

Above this level was a thick layer of sand, laid down by thousands of years of sand storms. No sign of human or animal remains was found in this "sterile" sand layer.

In the next layer nearer the surface, was found a spear point that was heavier and somewhat cruder than the Folsom point. It is of the type known to scientists as a Yuma point. The Yuma men, at least in this region, must have lived thousands of years later than Folsom Man.

Above the Yuma level was another "sterile" layer. On top of this was a level containing a quantity of stone spear points with the bones of modern bison, not more than 1,000 years old.

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MEDICINE

Brain Bumps Skull In Auto Crashes

► THE BRAIN may bump against the skull and be injured in auto accidents that seem only minor collisions, Dr. James R. Gay of White Plains, N. Y., and Dr. Kenneth H. Abbott of Columbus, Ohio, warned at the meeting of the American Medical Association in New York.

"Such brain injuries were not serious in themselves, but the resulting nervous symptoms further handicapped the victim and were sometimes prostrating," the two doctors stated.

"When a careless motorist allows his car to ram the car ahead, occupants in the front vehicle are usually unaware of the impending crash and their head and neck

may be snapped forward and backward in rapid succession.

"This violent movement may tear some of the supporting ligaments in the neck and the injured person notices pain, soreness and stiffness in his neck which can persist for many weeks or months. A mild type of injury may consist of a simple sprain, but a much more complicated condition can occur, such as chronic neuritis, protruded disc, dislocation or fracture of the neck."

As safety measures, the surgeons suggested: 1. keep brakes in good condition; 2. stay a safe stopping distance behind the car ahead; 3. be alert for sudden changes in traffic movement; 4. allow a car that follows too close to pass; 5. make use of proper hand signals; 6. when stopping, observe the driver behind, using the rear view mirror to be certain your signal is noticed; 7. if collision is unavoidable, cover and support head and neck with arms.

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MEDICINE

Arthritis Kills As Well as Cripples

► FOR THE first time, rheumatoid arthritis has been labelled a killer as well as a crippler.

This new charge against the age-old and widespread disease came in a report from Dr. Sidney Cobb of the University of Pittsburgh School of Public Health.

At the meeting of the American Rheumatism Association in New York, Dr. Cobb said, "Rheumatoid arthritis seldom is given as a cause of death. We often hear arthritis referred to as the Nation's No. One Crippler but not as a killer.

"In the hospitalized patients we studied and followed for nearly 10 years, we found a higher death rate than would be expected had the group been drawn from the general population."

Young people, especially young men, between the ages of 16 and 25 are the arthritics hardest hit by death. The death rate for young male arthritics was five times that for the same age group in the general population. The death rate for the young women was three times that for girls and women their age in the general population.

After the age of 50 the death rate among arthritics was about the same as for the rest of the population above 50.

"The causes of death in persons with rheumatoid arthritis are different from the causes of death in the population at large," Dr. Cobb found. "By far the greatest cause of death in arthritics is infections of all sorts. The role of infections in causing death to the arthritics in our study is striking."

Why this is so is not known. It may be, Dr. Cobb said, that infections bring on or aggravate the arthritis, or the arthritis may break down the body's resistance so that infections which do not bother the general population kill those stricken with arthritis.

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TECHNOLOGY

Silicon Metal Available For Use in Transistors

► SILICON FOR use as an electric current converter, or transistor, was tried out some seven years ago, but has been nosed out of the race more recently by the rare metal germanium.

Now that the Du Pont Company is putting a new plant into operation to produce silicon in its "metallic" form, this common element found everywhere in rocks and sand may again furnish essential parts for electronic apparatus.

Like carbon, silicon can take several different forms. It does not form "diamonds," but it can be either soft and smudgy or hard and metallic. Smudgy silicon corresponds to carbon in lead pencils. Metallic silicon is similar to the hard graphite bricks of carbon used in the atomic piles. The high price of silicon in this form, announced by Du Pont as \$430 per pound, reflects the trickiness of getting the material out pure and in the required state. The price should drop as new uses increase the demand.

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VITAL STATISTICS

Over 4,000,000 Babies Predicted for 1953 Crop

► THERE WILL be 4,005,670 babies born in the United States during 1953, if births continue at the rate for the first quarter of this year.

So far births are running three percent ahead of last year, when the national total reached the record breaking figure of 3,889,000 registered and unregistered births, the Public Health Service reports.

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BOTANY

2,4-D on Lower Leaves Kills Most Effectively

► WEED-KILLERS SHOULD be applied to the lower leaves of a plant for most effective results, research with radioactive chemicals has shown.

Prof. Alden S. Crafts, botanist with the University of California College of Agriculture, Davis, followed the course of radioactive 2,4-D with X-ray film as it moved from the leaves throughout bean and morning glory plants. He found that, with older plants, 2,4-D sprayed on the lower leaves moved rapidly down to the root system to kill the whole plants.

The 2,4-D sprayed on the upper leaves, however, only kills the top of the plant, leaving the roots intact and growing.

With actively growing young plants, Prof. Crafts discovered, the weed-killer moved into the root system from all the leaves, making this stage of growth the best time for spraying.

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