BIOCHEMISTRY

Trypan Red Combats Concussion After-Effects

➤ TRYPAN RED, a dye now used to treat some epilepsy patients, may be a good agent to combat the after-effects of head concussion. This is reported by Drs. Robert B. Aird and David Zealear, and L. S. Strait and Michael Hrenoff of the University of California School of Medicine.

Their experiments have shown that the dye eliminates abnormal brain waves characteristic of the after-effects of concussion. Experiments also showed that it prevents disruption of the blood-brain barrier in concussion. The action of the agent in concussion apparently is similar to its action in epilepsy. The scientists had previously found that the dye offers some protection against epileptic seizures.

The blood-brain barrier is a mechanism which screens substances passing from the blood vessels into the brain. The blood vessel walls allow the right amounts of nourishment and other needed substances to go into the brain, and they normally prevent harmful materials from entering.

Infections, toxic conditions, and injuries to the brain as in concussion can disrupt the normal delicate chemical balance maintained by the blood-brain barrier. Trypan red and a sister drug used earlier, brilliant vital red, help restore the function of the protective barrier.

Science News Letter, February 7, 1953

ORNITHOLOGY

Fight Against Starlings Is Washington Problem

➤ BRITAIN'S LATEST request for U. S. technical aid reveals its profound faith in Yankee ingenuity; however, it looks as if we must give their faith a jolt.

Sixty-three years after 60 noisy starlings were imported from England to the U. S., municipal authorities in the mother country have sent out a plea to America for ways to control this feathered pest. But after 63 years of experience, we have not learned the answer.

An arch-foe of starlings in the U. S., William A. Xanten, head of the District of Columbia sanitation department, told SCIENCE SERVICE he has received letters from Westminster and Edinburgh asking for the secret of his success in mastering this bane of city dwellers.

But Mr. Xanten will be the first to admit he has found no secret, and very little success, where starlings are concerned.

An annual starling invasion of Washington begins in the fall and lasts till spring, during which time they occupy such strategic positions as the tree-tops above Pennsylvania avenue and the entrances to many government buildings, to carry on their warfare against non-feathered bipeds.

In the course of his defensive campaign, Mr. Xanten has employed balloons, screech owls, itching powders, and stink bombs against the relentless foe, but never with more than temporary success.

He did manage to preserve the dignity of the Inaugural Day parade watchers along Pennsylvania avenue by spraying the roosts with a fire hose the day before. This rough treatment, plus the noise of the crowd scared them away for the big day, Mr. Xanten theorizes.

Other starling observers think the starlings left because of hurt pride, when humans made more noise than they for a change.

But time heals pride's wounds, and the starlings are back in full force.

Science News Letter, February 7, 1953

PHYSICS

Method Measures Viscosity of Fluids

➤ EXPERIMENTS WITH crystals of barium titanate may provide a new method of measuring fluid viscosity, and thus be of practical use to the petroleum, chemical, aviation and other industries.

The investigation is being conducted by Herman Medwin, University of California at Los Angeles physicist.

Barium titanate crystals expand as voltage is applied to them and contract when voltage is reversed. The pulsing of the crystals propagates the ultrasonic waves in a fluid-filled glass tube.

"Scientists have long been aware that intense sound produces movements of fluids somewhat similar to those of air in front of an electric fan," points out Mr. Medwin.

"The movement occurs because momentum lost by the sound wave is taken up by the medium and causes motion of it. Just how the transfer of momentum occurs is not known. This is one of the factors the research is attempting to clarify."

Present methods measure only shear viscosity and deal with the rate at which incompressible fluids flow through a tube. The new method would measure bulk viscosity by the movement of the fluid induced by sound waves.

Science News Letter, February 7, 1953

BIOCHEMISTRY

Radioactive Chemicals Help Blood Research

➤ TWO NEW radioactive chemicals, one of them adrenalin, are now commercially available for use in research on such ills as blood pressure and diabetes.

Made for the first time by chemists at Tracerlab, Boston, the two compounds can be traced in their course through the blood stream by the beta rays they emit. Quantities as small as a millionth of an ounce can be picked up by delicate instruments.

Besides adrenalin, the other radioactive chemical is alloxan-2-C-14, which can be used to induce artificial diabetes in animals.

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IN SCIEN

METEOROLOGY

Better Thunderstorm Forecasting for Midwest

➤ BETTER ACCURACY in forecasting Midwestern thunderstorms, which have taken more than 100 lives in aircraft accidents alone in the past few years, is promised in a report from Chicago to the Weather Bureau in Washington.

The skill score for predicting particular thunderstorms for Chicago, Lynn L. Means of the Chicago Weather Bureau reported, has gone up 8% from 44% to 52%. Thunderstorms are particularly difficult weather phenomena to predict, it is pointed out.

However, results of a study in Chicago, together with other research going on in other parts of the country and future studies of how atmospheric conditions high in the air are associated with thunderstorms, will bring improvement in thunderstorm predicting methods, it is said.

Chicago weathermen discovered that, contrary to previous belief, a surprising number of thunderstorms occurred out in advance of a moving cold front. In one summer in Chicago, not a single thunderstorm was classified as having occurred directly with passage of a cold front.

The system used in Chicago is based on observation that thunderstorms are associated with other kinds of weather phenomena. How often these other things occur before a thunderstorm breaks and to what extent they occur has been figured. This permits weathermen to make their thunderstorm predictions with a greater or less assurance of accuracy.

The main tools in the forecasting technique are charts of flow, temperature and moisture patterns.

Science News Letter, February 7, 1953

TECHNOLOGY

British Ship Jet Engines In Zippered Plastic Bags

➤ SHINY NEW British-made jet engines now are being dressed in sprayed-on plastic bags complete with zippers before being shipped abroad.

An improvement of the English Cocooning technique, the new method lets engines be "packaged" economically. A zipper is laid over the engine, and quick-drying plastic is sprayed on. The plastic forms a tough but pliable airtight coating over the engine's irregular parts and over the zipper. If the plastic web is broken, it can be patched by brushing on fresh liquid.

The bag unzips when the engine is needed and the zipper can be reused.

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CE FIELDS

BACTERIOLOGY

Disease Virus Alive After 35 Years

➤ A DEADLY disease virus, lost 35 years ago, has been rediscovered still alive in its test tube in bacteriology laboratories at the University of Michigan.

One ten-billionth of a drop containing the virus will kill a rat within a few hours. What it will do to humans is not yet known.

The fact that this virus survived so many years without animal tissues to help sustain it makes it probably one of the most potent of all known viruses in the opinion of scientists at the university.

The virus was first discovered in 1909 by Dr. Frederick G. Novy, former professor of bacteriology and dean of the university medical school and now retired as dean and professor emeritus.

Dr. Novy discovered the virus then during investigations of spirochetes, thought at one time to enter the blood stream and then change into another kind of microorganism.

The virus, rediscovered in a test tube during a clean-up of a laboratory formerly used by one of Dr. Novy's assistants, has been named the "Novy Rat Virus" in honor of Dr. Novy.

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SURGERY

Frostbite Footless Can Walk Well Again

➤ KOREAN WOUNDED who lost a foot, some of them because of frostbite, are being helped by a new operation developed by Drs. August W. Spittler, John J. Brennan and John W. Payne of Walter Reed Army Hospital, Washington.

All of the patients, 36 so far, have "developed an excellent walking gait with stumps capable of bearing the entire body weight without pain," Dr. Spittler said in reporting the new technique at the meeting of the American Academy of Orthopaedic Surgeons in Chicago.

The operation is a modification of the Syme operation, named for Sir James Syme of Edinburgh who developed it in 1843. The Syme operation for foot amputations leaves a heel pad on the end of the ankle, giving the patient a stump on which he can walk around the house without crutches or an artificial leg. But this operation could not be performed in cases where there were draining wounds or infection.

The Walter Reed surgeons modified the technique so that in two operations they were able to save the entire leg bone and a heel pad. Four weeks after the second operation the patients were able to be fitted with a light plastic boot. This leaves the knee action free and patients can walk about their homes without it. And this operation can be performed even when infection is present. There was active infection in all 36 patients at the time of the first stage operation, with gangrene in 12.

Thirty of the patients now wear their plastic boot a full day, performing their routine duties. Sixteen are doing manual labor and four have returned to military duty.

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BIOLOGY

Find Salamander Has High Cancer Resistance

➤ THE ANCIENTS believed that a salamander could not be destroyed by fire, but Dr. A. M. Schechtman, professor of zoology at the University of California at Los Angeles, is interested in the lizard-like animal because it has an unusually high resistance to cancer.

He has found that some cancer-causing chemicals that invariably produce cancers in other animals do not produce the disease in the salamander.

Such chemicals, however, do stimulate growth in the salamander's skin but do not form a malignant tumor as they do in other animals. This growth may develop into a lump, but apparently it is sealed off so that the growth does not spread far in the body nor interfere with vital organs.

Just what factors are involved in the salamander's strong resistance to cancer is not known. Dr. Schechtman suspects that there might be some relationship to the animal's remarkable regenerative powers. A salamander can lose a leg or tail and grow a new one within a few months.

Science News Letter, February 7, 1953

ENGINEERING

Liquid Runs in Generator Like Blood Through Veins

➤ A NEW electric generator being designed in Schenectady, N. Y., will have a cooling liquid surging through its hollow copper wires much like blood flows through a man's veins.

General Electric Company engineers said the generator is the first large machine of its kind in the history of the electrical industry.

The cooling system will go into the stator, the stationary part of the generator. Heat from the rotor will be carried off by more conventional hydrogen-gas methods.

To be driven by a tandem-compound turbine, the machine is for installation in 1955 at the new Eastlake power plant of the Cleveland Electric Illuminating Company. It will generate 208,000 kilowatts of electricity, or more than 200,000 horsepower.

Science News Letter, February 7, 1953

AERONAUTICS

Plan Mobile Hangar For Fast Get-Away

➤ AN AIRPLANE hangar that can drive around the Marine Corps' airfield, Cherry Point, N. C., at 35 miles an hour is in the planning stage. When completed, the hangar will supersede the model now in service that merely pulls apart at the flip of a switch.

The mobile hangar will be designed in two sections. Each section will be mounted on rubber tires and will be powered by a giant diesel traction unit.

The object of the radical hangar is to speed "garaged" fighter planes into the sky. When an emergency arises, the hangar pulls apart, leaving the "garaged" planes free to take off. At present, planes have to be carefully worked out of their hangars by ground crewmen. In this age of supersonic planes and guided missiles, that process simply takes too much time, the Navy figures.

A similar hangar already is being used at the airfield, *Steelways* (Feb.) reports. At a flip of a switch, the two triangular-shaped hangar sections pull apart, rolling along tracks. Within 60 seconds all the planes are exposed. Each section weighs 55 tons and is powered along the tracks by a self-contained diesel-electric engine. Airplane maintenance workshops are situated in the ends of the hangar section.

Science News Letter, February 7, 1953

MEDICINE

Old Indian Remedy Is Tried on Fungus

➤ A RENEWED interest is now being shown in an old Indian remedy used to treat many types of ailments, ranging from influenza to battle wounds.

The remedy is leptonin, a substance made from desert parsley, or "bitter-root" as the Indians called it.

Daniel Johnson of the University of California at Los Angeles School of Medicine has found that leptonin has shown promise in controlling one of the disease-causing fungi in preliminary laboratory studies. It seem to control coccidioides (valley fever) fungus more effectively than current antibiotics in the test tube investigation.

The Indians used a brew of the desert herb to ward off various diseases, and made an ointment from the plant to treat wounds. It was noted that Indians using it seemed to remain remarkably free of infection. Just how much the remedy contributed to this is not known.

Present studies of extracts from the plants are only in the test tube stage, Mr. Johnson emphasizes. Many animal studies will have to be performed to evaluate the substances as therapeutic agents.

Mr. Johnson's research is supported by the Volker Charities Foundation.

Science News Letter, February 7, 1953