

MEDICINE

High Blood Pressure Aid

Malarial parasites have proved effective in reducing elevated blood pressure. The malaria can then be cured within a few days with drugs.

► **DISCOVERY** that malarial parasites have the ability to reduce high blood pressure was reported by Dr. Eusebio Y. Garcia of the Medical Research Clinic in Binan, Laguna, Philippines.

He gave four high blood pressure patients injections of the commonest and mildest species of malarial parasites, which resulted in a fall in their high blood pressure, Dr. Garcia told a meeting of the Philippine Society of Parasitology.

It is believed, he said, that about 90% of high blood pressure diseases originate in the kidneys. Some changes in the body cause the blood flow to the kidneys to be reduced, which starts the secretion and storage of renin, an enzyme of protein nature. When this is liberated in the blood stream it reacts with a substance in the blood to elevate the blood pressure.

Malarial parasites appear to have the

power to counteract this chain of events by increasing the blood-flow to the kidneys which was previously deficient and so reduce the secretion and storage of renin. Moreover, the parasites destroy a certain amount of red blood cells. This makes the body react in such a way that an inhibitor of the high blood pressure substance is released. Another way the parasites might accomplish reduced high blood pressure is by promoting congestion in the brain.

The malaria is induced by injecting the blood from a malaria-infected patient which is the non-relapsing form. It can be cured within a day and a half to four days by any of the standard drugs to combat this disease.

These results are not final, Dr. Garcia said, until further experiments can show that the effect is permanent.

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NUCLEAR PHYSICS

Hornets As Leak Detectors

See Front Cover

► “HOT” hornets—in the radioactive sense, not just with their stingers—promise to be useful in the safety program of the Atomic Energy Commission. The potential helpfulness to man of these energetic but not-too-popular insects is disclosed in the semi-annual report of the AEC.

One curious but until now apparently useless fact of natural history was the knowledge that the common white-faced hornet accumulates the element barium in its body. Barium, a chemical relative of the more familiar and abundant calcium (lime) is widely distributed in nature. It is also one of the lighter elements formed in the radioactive breakdown of the heaviest natural element, uranium, the atom-bomb metal.

Researchers on military and peaceful uses of uranium naturally do not want escaping atomic fragments strewing the countryside with dangerous pollution. So it is proposed to encourage colonies of hornets to live in the neighborhood of nuclear-fission laboratories, and to seek their food among plants exposed to possible radioactive leaks. From time to time some of them will be captured, killed and analyzed. If they assay too high in barium, there's a “hot” leak somewhere, that has to be found and stopped.

On this week's cover of the *SCIENCE NEWS LETTER* a hornet is shown getting her meal of barium.

Description of various safety measures used in atomic energy laboratories and power plants occupies a substantial part of the AEC report. Because they know how dangerous is the stuff with which they are dealing, scientists and other workers around the laboratories normally take elaborate precautions against exposure, and the number of casualties to date has been gratifyingly small.

One new development, not yet in use, has been the finding of a new, re-usable coolant for the atomic piles, to replace the water- and air-cooling systems hitherto employed. This is expected to simplify the coolant-disposal problem.

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ACCOUNTING

Atom Forces Uncle Sam to Modernize Bookkeeping

► **INSTEAD** of keeping his eye merely on the money coming in and going out of the public treasury, Uncle Sam from now on can tell definitely how much money he will have to save to replace piping for uranium hexafluoride, or what the cost is per millicurie of invisible radiation.

Modern industrial accounting methods are entering Uncle Sam's bookkeeping system for the first time. Atomic energy and fissionable materials have succeeded in disintegrating the Government's antiquated cash basis accounting. They have replaced it with accrual bookkeeping and cost accounting, so far as the major industrial companies contracting with the Atomic Energy Commission are concerned.

The accounting systems of the Commission and its contractors have been so coordinated that the balance sheet of each company can be entered in the super-ledgers of the Atomic Energy Commission.

“Taken together”, says the Commission in its Sixth Semi-Annual Report, “the books of account kept by the Commission and its contractors will show the assets, liabilities, net worth, and financial results of operation of the entire atomic energy program.”

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CHEMISTRY

Photographic Wash Water Is Reusable by New Treatment

► **THE** same old batch of wash water used in Army field photographic laboratories may be used over and over again by a method of purification developed by the Signal Corps at Fort Monmouth, N. J. The process is particularly of value in advanced and isolated positions where fresh water is unavailable.

In a typical field laboratory approximately 3,000 gallons of fresh water are needed in a 24-hour period. With the new development, a supply of about 10 gallons is sufficient if purified and reused many times. The process is based on a principle of water purification used during the past decade or so known as ion exchange. It is used by industry to soften water fed to large boilers, and was used by the Navy during the war to produce drinking water from the ocean brine.

In the Signal Corps process, the water, after use in washing photographs, is passed over thousands of tiny particles of synthetic resin. These filter out and recapture silver and other impurities acquired by the water in the washing procedure. The water, stored in a tank located in the mobile laboratory, is pumped to a print washer where it removes hypo from the prints, circulates back to the resins, and is then in condition for reuse.

The synthetic resins used are virtually indestructible and can be rejuvenated by the simple process of immersing them in either battery acid or washing soda, depending upon the particular type of resin.

While this Signal Corps process is suitable to purify water for reuse for washing photograph prints, it cannot be used to purify water for drinking purposes because the resins are ineffective in killing bacteria or lower forms of organisms.

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