

MEDICINE—BIOLOGY

# Electric Shocks Snap Hearts Out of Fatal Twittering

## Found To Be More Valuable in Certain Cases of Fibrillation Than Drugs or Shock and Massage

**E**LECTRIC shocks that snap hearts out of fatal twitterings may checkmate death and shock the victim back to life, the Eighth American Scientific Congress was told. The electric shock treatment is recommended in certain cases when death comes suddenly following an anesthetic, after an electric shock, or in the heart disease known as coronary occlusion.

Dr. Carl J. Wiggers, of Western Reserve University Medical School, reported the advantages of his method of restoring the heart beat over drugs such as quinidine and procaine and over the combination of a single electric shock with massage of the heart to start it beating.

In the type of cases he investigated death comes suddenly because of a condition known medically as ventricular fibrillation. The French name for it, insanity of the heart, describes it very aptly. Ordinarily the many muscle fibers of the heart all contract together in regular rhythm to pump the blood out into the arteries. In fibrillation, the muscle fibers act as individual units. The result is a useless twittering and quivering instead of a strong contraction. When the heart gets the jitters this way, it fails to pump blood out to the rest of the body and death follows swiftly.

Strong counter-shock of electricity has been given dogs to stop the useless twittering and get the heart back to its normal rhythmic beating. To achieve the same results in a man, however, the doc-

tor would have to use a current of from 27 to 30 amperes at 2,000 to 3,000 volts. This would be dangerous to both doctor and patient, Dr. Wiggers said.

Weaker currents can be used, and the heart's fatal twittering can be more certainly abolished, Dr. Wiggers has found from recent investigations, if a series of three or four shocks are given at intervals of about one or two seconds, instead of one strong shock.

*Science News Letter, May 25, 1940*

## Test With Dried Blood

**A** TEST for syphilis that can be made with a small amount of dried blood, avoiding the necessity of drawing blood from a vein, which is difficult in the case of infants and timid persons, was recommended to the Congress by Dr. A. Diaz Albertini, Dr. A. Recio and Dr. G. Lage, of Havana, Cuba.

The test was devised by Dr. Alejandro Chediak, of the Municipal Maternity Hospital of Havana. As many as 500 of these Chediak tests can be made daily, at a total cost per test of about three-fourths of a cent, according to experience quoted by the Cuban physicians of 210,000 such tests made in 21 months by Dr. P. D. Dahr, of the Institute of Hygiene of Cologne, Germany.

*Science News Letter, May 25, 1940*

## Uses For Cultures

**U**SES of both "practical" and "pure" scientific value have been found for plant roots and other tissue cultures, grown detached from the original parent stock and kept going for long periods in nutrient fluids. Dr. Philip R. White of the Rockefeller Institute for Medical Research at Princeton, N. J., told the Congress about some of these new uses.

One, of considerable immediate importance is the employment of excised roots as living culture media for mosaic diseases of plants. One such study has already shown that the disease virus tends to concentrate in the middle part of the root fragment, away from both tip and

basal ends. It has also shown that age rather than amount of root tissue apparently determines the degree of activity of the virus.

In his own experiments, Dr. White reported, he has learned some valuable facts about the nutritional requirements of roots, especially about their use of mineral salts and vitamins. Thiamin, one member of the vitamin B complex, is necessary for root growth, but in exceedingly minute quantities. A solution containing one part of thiamin in a million million will suffice.

*Science News Letter, May 25, 1940*

## Vampire Bats Convicted

**V**AMPIRE bats have been convicted as carriers of a dangerous form of rabies causing paralysis in livestock, in researches reported by two Venezuelan scientists, Drs. Juan Iturbe and P. Gallo, before the Eighth American Scientific Congress in Washington.

The affected animals usually lose the use of their hind legs; only in two or three per cent of the cases are the front legs paralyzed also. The causal virus is able to pass through the pores of porcelain filters, and shows a considerable degree of resistance to heat. Heating at 95 degrees Centigrade (nearly boiling) for two minutes does not kill it.

Blood-drinking bats carry the virus from animal to animal, but do not themselves develop symptoms of the malady. Such bats fight a good deal among themselves, and Drs. Iturbe and Gallo have found that infection can be spread from bat to bat in this way. Whether naturally or experimentally infected, bats can carry the virus for a long time in their bodies. Since they are capable of living actively for several days without food, it is possible for the flying animals to carry the disease for long jumps into previously rabies-free territory.

Drs. Iturbe and Gallo have succeeded in preparing a preventive vaccine, which has shown encouraging results in the use which has thus far been made of it. They are now at work on a vaccine prepared by another method, from which they hope for even better results.

*Science News Letter, May 25, 1940*

## Snails Tell History

**S**NAILS that live on Cuba's mountains tops tell of several times in past ages when Cuba was not the single island with a mountainous backbone that we know today, but a chain of smaller is-

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### AQUEDUCT

*This new aqueduct, the world's longest, is a 993-mile job, to carry spring water from the Apennines to 3,000,000 people who live along the heel of the Italian boot. Double pipelines of the main artery, shown above, are almost six feet across and can take a flow of 222 cubic feet per second. The network of the Puglia Aqueduct, as it is called, is expected to promote development of five of Italy's provinces which have been handicapped by water shortages and by such maladies as typhoid.*

lands with channels between the present peaks. How these beautiful and variegated land shells have served as geologic historians was related by Dr. Carlos de la Torre of the University of Havana and Dr. Paul Bartsch of the U. S. National Museum.

Cuba is the home of what is perhaps the largest snail family in the world, comprising 355 species and 702 subspecies, Dr. de la Torre explained. Yet there is no doubt that all these originally evolved from a single ancestral form. As the island alternately rose and subsided, the limestone areas that are the homes of these snails were alternately united and separated. During the periods of separation, since inter-breeding was impossible, the many distinct forms of today came into existence.

*Science News Letter, May 25, 1940*

### Both Scales and Hair

**A**SOUTH AMERICAN animal that is a "non-missing link" between mammals and their reptilian ancestors was described to the meeting by Dr. Glover M. Allen of Harvard University.

It is a primitive member of the rodent group, known as the paca.

In several orders of mammals, scales are present on tails and backs of feet, Dr. Allen said. This is true of rodents, marsupials and ant-eaters. However, in

the paca the scales are found on the body as well, with the hairs coming out between them. Dr. Allen described this arrangement as "probably present in early mammals."

*Science News Letter, May 25, 1940*

GEOGRAPHY—METEOROLOGY

## Advocates Rubber Cultivation In the American Tropics

### Growth of Rubber in Its Native Warm Lands of the New World Would Be Good for Land and for People

**R**ETURN of rubber production to its native home, the tropical lowlands of the Americas, was advocated before the Eighth American Scientific Congress by Loren G. Polhamus of the U. S. Department of Agriculture. Not only would the development of rubber growing in the warm lands of the New World render this hemisphere more nearly independent industrially of the remote and war-threatened East Indies, but it would be good for the land itself and the people who live thereon, the speaker declared.

Regions suitable for the cultivation of rubber have heavy rainfall, which endangers the land through erosion if the forests are cleared away and large-scale field crops introduced. To protect the soil, and at the same time to get something commercially valuable out of it, the best things to cultivate are tree crops.

Rubber cultivation does not necessarily have to be conducted on huge holdings by the factory-like methods of the great East Indian plantations, Mr. Polhamus pointed out:

"Many factors favor production of rubber by small holders who are able to take advantage of the use of intercrops which do not interfere with the growth of the rubber tree but which may help to produce a subsistence for the grower. Large expenditures for equipment are not necessary and the small holder need not have the labor difficulties faced by large corporations. The labor of his own family can be used before noon for tapping rubber and after noon for production of food crops."

The Hevea rubber tree now grown almost exclusively on Dutch and British plantations in the East Indies is a native of tropical America, so that there is no question of its adaptability to New World conditions. It is exposed to plant diseases here, but resistant varieties have been

originated and further improvements, both in disease resistance and latex yield, are now being worked on by plant breeders.

The Hevea rubber tree need not be the sole dependence of American planters, either, Mr. Polhamus continued. There is another species, the Castilla rubber tree, that thrives better in the drier, cooler uplands, and it might prove to be the foundation of a rubber-growing industry for the Central American plateau country.

*Science News Letter, May 25, 1940*

### Water Important in Peru

**A**LAND where conservation means just one thing—water conservation—was described in an address by Harold Conkling, deputy state engineer of California. The land is coastal Peru, where there is no rain to erode soil, no forests to preserve, no range problem. The one

### Why Smash Atoms?

By ARTHUR K. SOLOMON

**A**TOM-SMASHING is today one of the most important activities of scientists. Dr. Solomon here explains the work of one type of atom-smasher, the cyclotron, and describes the transforming effects of atom-smashing on the sciences of physics and chemistry, as well as in medicine. He makes clear to the layman the nature, purpose, and results thus far of these epoch-making advances. Fully illustrated.

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