

## ARCHAEOLOGY

**Relics of Indian Culture Studied by Colombians**

► **REMAINS** of a high Indian culture, rivalling the Mayan and Peruvian civilizations in its splendor, are being excavated and studied by archaeologists in Colombia, states Dr. Luis Duque Gomez, director of the Ethnological and Archaeological Institute at Bogota, now in this country on an exchange fellowship arranged by the State Department through the Smithsonian Institution.

Largest of these ancient cities is one now called Pueblito, near modern Santa Marta in northern Colombia. At this place there are stone foundations of more than 3,000 houses. It was inhabited until shortly before the Spaniards came to South America.

At San Agustin in southern Colombia is a huge cemetery, a "city of the dead" covering five square miles. It is filled with grotesque monuments, man-like in shape.

Like the Peruvian Indians and the Aztecs, these ancient inhabitants of Colombia had a corps of expert goldsmiths. Many of the gold objects found by the archaeologists, such as crowns, pendants and earrings, are of beautiful and delicate workmanship.

The government of Colombia has given these sites protection as national monuments, and is encouraging the training of young archaeologists. This work is under the direction of Dr. Duque.

Relatively few American archaeologists have done any work in the Colombian ruins, but Dr. Duque emphasizes that the cooperation of scientists from the United States will be welcomed, because there is so much to be done.

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## METEOROLOGY

**Rain-Maker Proposes Eliminating Lightning**

► **A RAIN-MAKER** suggested the possibility of preventing lightning-caused forest fires by eliminating lightning itself.

The proposal comes from Dr. Vincent J. Schaefer of the General Electric Co., who developed the method, sometimes successful, of making rain or snow by scattering dry ice by airplane in clouds far above the earth.

The scheme for eliminating lightning, which he believes would be successful in certain areas under certain conditions, includes the transformation of towering cumulus clouds in the area to snow by the use of dry ice.

Thus, he said, instead of growing into highly unstable thunderstorms from which lightning is produced, the cumulus clouds either would precipitate out as snow and rain, or would become cirrus, or snow clouds, which do not produce lightning.

Dr. Schaefer's suggestions are included in a report of his summer's study of natu-

ral thunderstorm conditions, conducted at Priest River Forest Experiment Station, Idaho. In the general region of the station many hundreds of forest fires occur each year with an average of 1,100 caused by lightning.

The recommendation that dry ice, solid carbon dioxide, be used to transform the cumulus clouds was made to the U. S. Forest Service. Its Priest River Station is located in a region particularly well suited for such an experiment. The region has three "breeding" places for incipient thunderstorms. Due to local topographical features, these locations frequently cause highly-active towering cumulus clouds to develop. These often grow into thunderstorms.

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## MEDICINE

**Facial Paralysis Victims Respond to Treatment**

► **PATIENTS** with facial paralysis, or Bell's palsy, do not have to sit around waiting for the paralyzed face muscles to recover while their doctor takes an "attitude of masterful expectancy." They can and should be treated, Dr. William Bierman, attending physical therapist at Mount Sinai Hospital, declared at the New York Academy of Medicine graduate fortnight.

He advocated the use of physical medicine such as early electrical stimulation of denervated muscles, but cautioned that massage of paralyzed muscles, especially in the face, should be very mild.

Voluntary exercise should be undertaken with great caution. In Bell's palsy, he explained, the healthy side of the face is stronger and since ordinarily the muscles of both sides of the face work together, the weak muscle on the paralyzed side is in danger of becoming stretched.

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## AERONAUTICS

**Supersonic Windtunnel Has Enclosed Airstream**

► **AN ENCLOSED** airstream system which cleans and dries air for reuse has been installed in a small windtunnel at the University of Washington Aeronautical Laboratory in Seattle.

In a tiny opening two square inches, flying conditions at an altitude of 80,000 feet with a speed of 1,360 miles per hour are simulated. Modifications may give conditions up to an altitude of 200,000 feet at 2,000 miles per hour.

By using the enclosed slipstream, it is not necessary to continually remove moisture from outside air.

Although the actual test section is small, the complete unit, powered by four large vacuum pumps, is 20 feet long and four feet high.

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**IN SCIENCE**

## CHEMISTRY

**Rubber and Plastic Make Tough, Light Material**

► **A NEW, TOUGH,** lightweight material made of combinations of natural and synthetic rubber with plastic resins has been disclosed by the Goodyear Tire and Rubber Company.

Copolymer resins with a high styrene content are combined with natural or synthetic rubber in the group of materials which have been given the name Tuf-Lite. First applications include several types of sports equipment such as helmets for football or polo, golf club heads, golf ball covers and both bowling balls and pins. Other uses for the material include mildew-resistant carrying cases and containers, clicker pads, electrotype printing plates and other articles which need impact resistance and waterproof qualities.

Wide range of qualities, including colors, is possible with the resin-rubber blends, Goodyear scientists have discovered.

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## MARINE BIOLOGY

**Sponge Fishery May Help Economy of Philippines**

► **SPONGE FISHING** may help the Philippine republic to build up its national economy, if preliminary promises of a survey being conducted for the Philippine government by the U. S. Fish and Wildlife Service are made good on a larger scale. Known sponging grounds in waters adjacent to the islands are chiefly in the Sulu and Celebes seas.

A minute beginning of a sponge-fishing industry was made in the Philippines before the war. There were two boats, carrying four divers and eight crewmen.

If sponges can be obtained on a large scale in the Philippines it will help the world as well as the islands themselves. Commercial sponge fishing is now confined to just two areas in the world: the Mediterranean sea and the Caribbean-Gulf region in the Western Hemisphere, and yields are falling off.

Estimated world production of sponges decreased from 2,450,000 pounds in 1938 to 860,000 pounds in 1947. The United States industry, confined to the west coast of Florida, yielded 606,000 pounds in 1938, and only 158,000 in 1947. Prices have increased so much, due to the scarcity of good sponges, that the small 1947 sponge crop brought nearly as much money as the four-times-larger 1938 yield.

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# CE FIELDS

## PUBLIC HEALTH

### No Need To Fear Atomic Bomb "Poisoned Water"

► YOU CAN TAKE one atomic bomb worry off your mind. That is fear of "poisoned water" after a bomb burst in or near the city water supply. If the city has a modern filtration plant, the water will be safe to drink.

That comes from Col. James P. Cooney, chief, special projects division, Office of the Surgeon General, Department of the Army. Said Col. Cooney at the meeting in Boston of the American Public Health Association:

"In case the water supply of a city is contaminated by fission products or unfissioned material from an atomic bomb, all the evidence on hand at present indicates that after passing through a modern filtration plant, the water at the tap would be safe to drink. More work will be done to prove or disprove this statement."

At the Bikini test water from evaporators used on the ship was found safe for drinking.

Other comforting facts presented by Col. Cooney: Immediately after a mid-air atomic bomb detonation it is perfectly safe to enter the area and rescue the thousands whose injuries will be such that they will not be able to walk. The residual radiation from an air burst atomic bomb is insignificant.

In case of an underwater or ground blast the radiation hazards would certainly be greater than from a mid-air burst but the blast and fire hazards would be proportionately decreased and, in Col. Cooney's opinion, the total number of casualties would be much less.

A large number of Japanese who had recovered from radiation sickness were examined and interviewed by Col. Cooney in August, 1946.

"They appeared perfectly normal and were handicapped in no way toward pursuing their way of living," he reported.

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## INVENTION

### New Electric Room Warmer Stores Heat in Soapstone

► AN ELECTRIC room warmer, that would come in handy now that evenings are growing chilly, has just been patented by Seymon Ria of Seattle. It is so built that it can store heat during daytime periods of off-peak loads, and release it when needed.

Heat storage is accomplished by means of cast blocks of soapstone—the same material that was employed in fireless cookers a generation ago, and as footwarmers in beds and buggies a generation before that.

In Mr. Ria's invention the blocks are hollow, with flue-like openings running up the middle, and with the electric heating elements embedded in the cast stone itself.

To protect the floor from excessive heating, the soapstone blocks are set on cement-bound cast stone blocks of a different type, in which the light, porous type of volcanic ash known as scoria is the chief ingredient. Scoria slabs also enclose the soapstone heat-storage blocks, giving good insulation.

Thermostatically controlled doors at top and bottom are closed during the time when heat is being generated and stored in the soapstone blocks, and opened automatically by thermostatic controls when the room temperature calls for a little more heat. An electric blower may be used if desired to speed the distribution of the stored warmth.

This invention is protected by U. S. patent 2,450,561.

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## MEDICINE

### Scientific Tests Show Fido Has Tough Stomach

► FIDO has a tough stomach. Its lining resists permanent damage by agents varying from zinc chloride and tannic acid to ultrasonic waves.

Evidence for this resistant ability of the lining of the dog's stomach was reported by Drs. John Regis Miller, J. F. Herrick, Frank C. Mann, John H. Grindlay and James T. Priestly, of the Mayo Foundation, at the meeting of the American College of Surgeons in Los Angeles.

Better methods for fighting stomach ulcer and stomach cancer were the goal of the Mayo scientists' studies. For over a century, scientists have been trying to find methods for determining whether hot foods, spicy foods or other substances taken into the stomach can irritate it sufficiently to cause an ulcer or cancer.

Since it is difficult to see what goes on inside the stomach, the Mayo scientists first tried to transplant part of a dog's stomach with intact blood supply to the outside of its belly. This was achieved, the dogs being anesthetized with ether for the operation which was done with sterile technique. The dogs were "entirely comfortable" with the transplants of stomach lining, and further tests, the scientists reported, "caused them no detectable discomfort."

Besides zinc chloride and ultrasonic waves, the scientists tested the effects of tannic acid, sodium morrhuate, oil of peppermint, protamine, water soluble vitamin K, quinone, various pituitary gland preparations, the fever cabinet, microwave, diathermy and ultraviolet radiation. Although these agents produced changes in the transplanted stomach lining, the scientists found the lining of the dog's stomach "remarkably resistant to permanent alteration produced by these agents."

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## ENGINEERING

### Million Barrels Daily Is Aim for Oil from Coal

► SYNTHETIC OIL from coal, to the tune of 1,000,000 barrels daily, was given as the objective of a program outlined to the American Society of Mechanical Engineers in White Sulphur Springs, W. Va., by J. D. Doherty of the U. S. Bureau of Mines. The cost of production, he said, should be approximately 12.5 cents per gallon.

Describing work in research and development already under way by the Bureau of Mines and others in the production of synthetic oil, he called attention to the need for prompt erection of at least some commercial plants because synthetic liquid fuels are not going to do us much good in an emergency if we have to start from scratch.

A completely new and detailed estimate of the coal reserves of the United States is being made by the U. S. Geological Survey, the engineers were told by Paul Averitt of the Survey staff. It will take 10 years to complete.

The coal fields of the United States are large in all dimensions, he said. They cover roughly 350,000 square miles, or approximately one-ninth of the total area of the nation. The coal-bearing rocks commonly are several thousand feet thick and, as in West Virginia, contain as many as 117 named and correlated coal beds.

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## ICHTHYOLOGY

### Plow Seaweeds Under to Feed Fish in Malaya

► SEAWEEEDS are "plowed under" to feed fish by peasant fishermen of Far Eastern shores, just as plants on land are plowed under as green manure in Western agriculture, D. W. LeMare of the Federation of Malaya and Singapore Fisheries Department has reported to the editor of NATURE (Oct. 30).

They have various ways of fertilizing their seaside fish ponds, which are usually formed by fencing off small arms of the sea. When the seaweeds become too thick for the fish—which do not want them for food—the peasants drain the pond, except for a small puddle at its bottom. Then they seine the fish out of this, to sell or eat.

In the Malayan region, they let the seaweed die and rot on the bottom, then spade it in as fertilizer. On the southern coast of China they haul it ashore and make it into compost heaps. This material is eventually returned to the ponds as fertilizer. On the shores of the Straits of Malacca, between Malaya and Sumatra, the peasants seine out myriads of tiny fish, useless for human food, and give them to pigs and ducks. Refuse from these animals' pens is used to fertilize the fish-producing water.

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