

their process of metamorphosis.

Science News Letter, August 28, 1948

Stars Have Much Hydrogen

► HYDROGEN is by far the most abundant element in the stars. For every atom of any metal there are about six atoms of carbon, nitrogen and oxygen; 500 atoms of helium; and 5,000 of hydrogen, Dr. A. Unsold of the University of Kiel, Germany, reported at the meeting.

Although we see only the outer layers of a star, we still have a pretty good idea of its total composition. Violent convective currents within the stars keep them constantly stirred up, stated Dr. F. Hoyle of the University of Cambridge, England. Thus the composition of the outer layers, which we observe, is the same as that of the interiors, where the nuclear processes take place.

Science News Letter, August 28, 1948

Letter To The Editor

Allopolyploid Redwood

THAT WAS a good article on my research (SNL, August 21, page 124) except for one thing. I did not call the California Coast redwood a hybrid, but an allopolyploid of hybrid origin. This distinction is more than academic. To the average scientist, whether botanist, zoologist or geneticist, the word "hybrid" refers to an organism like the mule, which is the first generation product of crossing, and is unable to reproduce its own kind, or if it can do so, fails to breed true. On the other hand, the process of doubling the chromosome number converts the hybrid into a full-fledged species which is not only fertile, but faith-

fully reproduces its own kind without undergoing Mendelian or any other kind of genetic segregation. Such allopolyploids are well known as established species in the plant kingdom. Cultivated wheat, cotton, and tobacco are all allopolyploids species which, in my opinion, have originated in the same way as the Coast redwood. However, they have been reproducing their own kind for thousands of years and, of course, cannot be compared to true hybrids like the mule. I don't know what terminology or explanation would put over this point best to the general public, but it seems to me an important one.—G. Ledyard Stebbins, Jr., Professor of Genetics, University of California.

Science News Letter, August 28, 1948

ENGINEERING

Harness Water Power

► PUERTO RICO'S great economic problem, too many people and too few jobs, is promised solution through hydro-electric power. With power available, factories will follow, and jobs will be plentiful. A big start toward the solution is well under way.

This American island, about one-half the size of New Jersey but relatively mountainous, has a population of 2,100,000, or

over 540 persons per square mile. The amount of available farm land is far too little to support its people at any reasonable living standard by agriculture alone. Therefore industries are needed. Without domestic coal or oil, the water in its mountain streams is the logical source of power. It is already being harnessed.

The Puerto Rico Resources Authority,

instituted by the Insular government in 1941, is behind the plans for water development. This agency has the job of the unification of water use for all purposes, including power, irrigation and domestic needs.

Its biggest dam is now near completion. This is a part of the so-called Caonillas project. The Garzas and Dos Bocas projects are already in operation. Fifteen smaller dams are also in use. These 18 together will give the island all the power it needs for the present, some 400,000,000 kilowatt hours per year.

As factories are established to use this power, other projects will be started. The island can produce about twice this amount of electrical energy. It will all be in use by 1970, it is expected.

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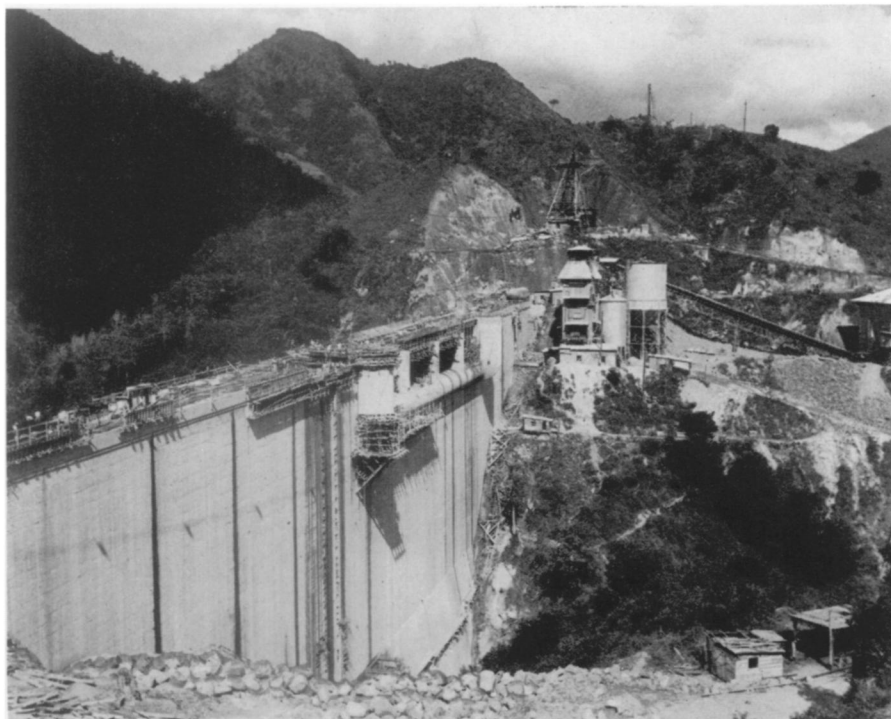
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VETERINARY MEDICINE

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CAONILLAS DAM—This \$10,000,000 hydro-electric and irrigation project is the largest in Puerto Rico. It is nearing completion between the cities of San Juan and Ponce.

The Caonillas hydro-electric project is midway between San Juan and Ponce, the two principal cities of the island. Together with Garzas and Dos Bocas, it is located in the mountainous central western area of Puerto Rico where the annual rainfall reaches some 200 inches.

The Caonillas dam will stand 230 feet

above stream level. Its reservoir will hold 50,000 acre feet of water. A two-mile tunnel will connect this reservoir with Dos Bocas lake. A five-mile tunnel will later divert water from the headwaters of the Arecibo river into both lakes. Year-around water is thus assured.

Science News Letter, August 28, 1948

VETERINARY MEDICINE

U. S. Eating Unfit Meat

In 1947, 40,000,000 pounds of unfit meat reached the public. Veterinarians also told that human cases of brucellosis are increasing.

➤ "UNSUSPECTING" Americans are eating millions of pounds of unfit meat each year, the American Veterinary Medical Association's convention in San Francisco was warned.

More than 40,000,000 pounds of unfit meat went to public markets last year, the Association's committee on food and hygiene estimated. A report blamed the situation on failure of cities and states to provide complete and adequate veterinary inspection.

About 69% of the meat processed in the U. S. last year came from packing plants under federal veterinary inspection, while the rest was under municipal or state supervision, it was explained.

The report emphasized that complete inspection includes examination of the animal before slaughter as well as after. "Only a few states" have such a program, the committee charged.

Only about one half of the clean poultry sold received veterinary inspection, the report said. Nearly one-twelfth of the poultry inspected was rejected for human consumption.

The report said that 20%—one out of every five quarts—of milk consumed in the nation last year was not pasteurized.

Disease testing and universal pasteurization were stressed in a program recommended for public health.

Science News Letter, August 28, 1948

Brucellosis in Humans

➤ HUMAN CASES of brucellosis, a disease acquired from infected animals, have increased 60-fold in the past two decades, Dr. James H. Steele, Atlanta, Ga., chief veterinarian of the U. S. Public Health Service, reported.

Dr. Steele said that the disease which comes mainly from swine and cattle now ranks with encephalomyelitis (sleeping sickness) and rabies as the most serious threat to public health from animals.

Science News Letter, August 28, 1948

Chicks Get Arthritis

➤ A STRANGE new virus disease which produces arthritis in chickens before they are hatched is a new threat to the nation's food supply.

The disease which strikes turkeys as well as chickens was described to the meeting by the Association's poultry committee. The new disease of embryo chicks has been reported only in the eastern states thus far, the committee said, but it may be more prevalent than is realized.

It causes both respiratory and nervous disorders in poultry. In turkeys, the nervous disturbances are like those from the better-known poultry menace, Newcastle disease. The latter has now spread to all but three states, the committee commented.

Science News Letter, August 28, 1948

Over-Eating in Lambs

➤ A NEW immunizing product and sulfur in feed are two new methods of keeping lambs from literally eating themselves to death.

Drs. A. W. Deem, Rue Jensen and Floyd Cross, all of Fort Collins, Colo., explained that over-eating of grains and other concentrates produces an intestinal poisoning in lambs. Sulfur in the diet or use of a new bacterin were both found effective in preventing loss of lambs from too much food.

Science News Letter, August 28, 1948

Crowding Endangers Calves

➤ ADD to the victims of a housing shortage many calves that are killed by infectious disease, Dr. W. J. Gibbons of the Alabama Polytechnic Institute advised the convention.

Dr. Gibbons explained that too many calves are killed by infectious diseases which they get from older cattle in crowded barns. He urged keeping calves in small, isolated groups of approximately the same age as a means of adding to the nation's meat supply.

Science News Letter, August 28, 1948

Drugs Cause Cattle Loss

➤ PROPAGANDA urging farmers to use penicillin, sulfa drugs and other products