

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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