

expensive now. There is hope that it can be improved and made cheaper.

Titanium sponge is now \$4.50 per pound. Rolled into sheet for use in structures, it triples or quadruples in cost. The new source of ore and a new process could cut these costs in the future, giving the world a new practical metal. That is the hope of Republic's engineers and officials.

From the mine to the capital city of Oaxaca is a good ten hours. Truck or jeep must be used over the first 12 miles. It is 122 miles in all. Over the mountains, the rain forests disappear. The last coffee tree is seen. The fields lie sparse and dry. One is in another land.

Oaxaca may be as well known for the titanium that lies beyond it, as for the ancient ruins, Monte Alban and Mitla, built by the ancestors of the Zapotecs who till the fields, pick the coffee and who will work the mines.

The Indians, skilled, honest, faithful, hard-working, are partners in the new-found riches of their land, not just the rock drillers, the blacksmiths, the carpenters and the laborers.

Engineer Francisco De La Pena surveys the land. Engineer Ramon Garcia is mine superintendent.

As for Pedro Vara, there is no better jeep driver in all the world.

Science News Letter, January 8, 1955

The flightless *kiwi* of New Zealand lays an egg that is one-fourth its own weight.

NATURAL RESOURCES

Water Shortage Solution

► A PROGRAM to cope with the increasing demands for water in the United States was proposed by Carl G. Paulsen, chief hydraulic engineer for the U. S. Geological Survey, to the American Association for the Advancement of Science meeting in Berkeley, Calif.

Mr. Paulsen pointed out that although the United States is blessed with a plentiful water supply, consumption has risen fourfold from 1900 to 1950, and that it is expected to double again by 1975.

He presented the following proposals to stretch the water supply for the growing needs of the future:

1. Use of low quality water, perhaps even ocean water in some industries.
2. Reduction of evaporation losses by building reservoirs deep rather than wide and placing them in areas of low evaporation.
3. Cutting down pollution of streams by industrial wastes and also reuse of water in some factories.
4. Possible conversion of sea water to drinking water and possible seeding of clouds to change precipitation patterns.

Although there is a lot of water in the United States, he said, many areas have shortages. Household appliances such as

air conditioners and washers are taking up great quantities of water, and the many new electrical devices have increased the consumption of water by power plants.

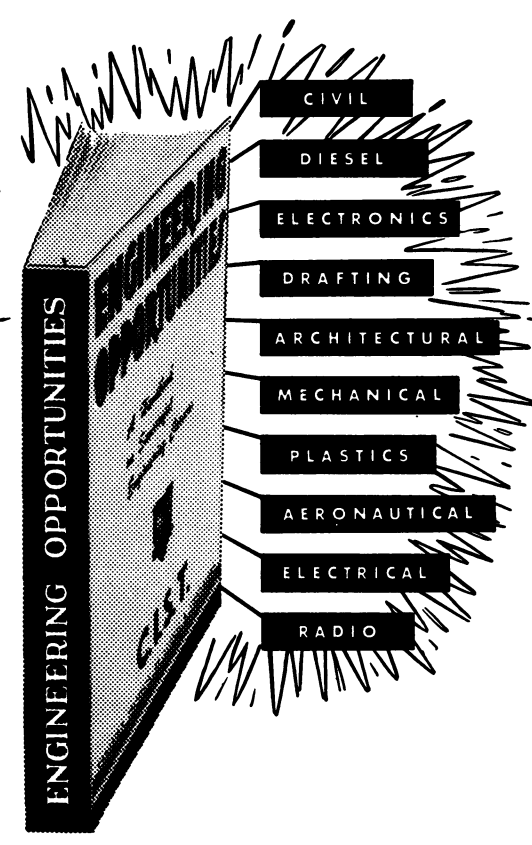
In addition, industry is using more and more water in the manufacture of nylon, synthetic rubber, oil products and other products. Not only do these plants use water directly, but they also pollute streams, making them undesirable as water sources.

Cloud seeding and making fresh water from the ocean are both under study. The ion-permeable membrane system for salt water conversion might be the answer to the needs of some areas, he said.

He outlined methods to prevent salt water from ruining some of the underground water sources. Included are plugging unused wells and halting the salt water with a fresh water barrier.

Another possible answer to the water problem in some areas may be to remove some of the phreatophytes, or water-loving plants, which consume great masses of underground reserves. In 15,000,000 acres of 17 western states, these plants suck up a volume of water estimated to be equal to twice the average annual flow of the Colorado River at Lees Ferry.

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