

ingenious evaporation processes. In the New Mexico deposits, near Carlsbad, the potassium chloride is mined in operations which, in some ways, are a race against time. The urgency arises because the potassium chloride deposits lie beneath layers of water-bearing sand and gravel. If that water enters the potash mine, the operations will be abandoned because the potassium chloride is highly soluble in water.

"Should water enter the mine through caving," said R. M. Magraw of the Potash Company of America, "the damage will be to a property that would be exhausted in any event if no effort were made towards ultimate recovery."

The Carlsbad mine is worked at the 1,000-foot level, consisting of salt and other solutions immediately above the bed. The top 400 feet consist of porous water-bearing limestones, shales and clays.

In sinking the mine shaft water was often encountered. In one case the flow was 1,000 gallons a minute, said Mr. Magraw. Ingeniously these leaks were stopped and the shaft lined with concrete to stay, permanently, the flow. Water pressures of 84 pounds to the square inch now exist behind the concrete walls.

Below all this water miners do their work, using mechanical techniques as much as possible. Large amounts of explosives are employed because of the toughness of the ore. Room and pillar mining is employed with the pillars still in place. Eventually the pillars may be "pulled," said Mr. Magraw, when the deposits have been completely exploited. But, until that time, they will remain untouched because of the danger of bringing down the overlying water-bearing deposits and hence ruining the valuable potash.

*Science News Letter, April 23, 1938*

The German government has banned the use of the inflammable gas hydrogen in Zeppelins, even for trial flights.

## ● RADIO

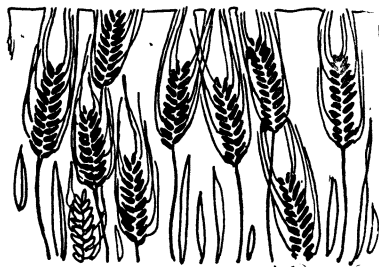
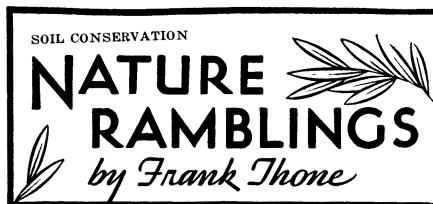
April 28, 3:00 p. m., E.S.T.

MENTAL LONGEVITY—Dr. Walter R. Miles, psychologist, Yale University.

May 5, 3:00 p. m., E.S.T.

TAMING THE WILD FLOWERS—Dr. P. L. Ricker of the U. S. Department of Agriculture.

In the Science Service series of radio discussions led by Watson Davis, Director, over the Columbia Broadcasting System.



### The Return of Malthus

**M**ALTHUS' ghost has returned to haunt us, in a new guise.

During the nineteenth century, the principles of Malthus, first set forth in his famous essay on population in 1798, were among the dominant ideas in political and social thinking. Briefly, Malthus took the gloomy view that human population always tended to increase faster than its food supply, and that misery and want and war were the inevitable consequences.

Malthus left out of consideration (for the good reason that he did not know anything about them) a number of factors that have operated at least in part to prevent realization of his pessimistic prophecy. Improvement of crop plants and food animals, invention of more efficient cultivation methods, and better means of keeping and marketing food have done much to increase the food supply. Later marriage, wider use of contraception, and possibly other factors have slowed down population increase.

But just as we are congratulating ourselves on the laying of the Malthusian ghost, up it pops again, out of the gullies of eroded and abandoned farm lands. Prof. Paul Sears, author of "Deserts on the March", expresses it as a general principle: "In the development of any civilization, the total area of cultivable land tends constantly to diminish."

Prof. Sears has pointed out the working of this principle in all the world's dead and dying cultures: Syria and Chaldea, Rome and China—and our own. Not only for necessary bread but for swollen profits, men strip the forest, pasture goats on the hills, tear the banquet-cloth from earth's table with over-eager plows. Ruin has always followed. Ruin threatens now.

Yet there is time. Just as we eased the pressure of the older Malthusianism

with better crops better cultivated, so now we can restore forests and grasslands, stop gullies, plow more sensibly. It will cost money, require more effort. But the alternative choice is decline and ultimate death.

*Science News Letter, April 23, 1938*

GEOGRAPHY—PHOTOGRAPHY

## Death Valley Sands Make Rare Camera Subject

See Front Cover

**S**AND dunes in the sunset, three hundred feet below sea level, drifting in the wind over the floor of this weirdly-beautiful Death Valley, have been caught by the camera of George A. Grant, Interior Department photographer. The photograph on the cover of this week's SCIENCE NEWS LETTER is one of a series which Mr. Grant has taken of Death Valley for the National Park Service. Others have been shown as works of art in a number of exhibitions, including the annual show of the Explorers Club.

*Science News Letter, April 23, 1938*

PALEONTOLOGY

## Fossil Jaw of Whale Found Near Washington

**T**HE FOSSIL jaw of a whalebone whale has been found near Washington, D. C., by geologists of the Catholic University of America. Somewhat broken when found, the pieces have been put together by Dr. Arthur R. Barwick, and the restored jawbone, now practically complete, is now in the University Museum.

The fossil has a total length of 118 centimeters, or a little more than four feet. As in modern whalebone whales, it has no teeth. No part of the whalebone plates once associated with it have survived: it is simply a heavy, slightly curved rod of bone.

In age it belongs to the middle period of the Age of Mammals, known as the Miocene, its antiquity estimated as about 34 million years.

*Science News Letter, April 23, 1938*

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