

OCEANOGRAPHY

Immense Sand Deposits

Gulf coast has enough sand to line the entire coasts of United States and Mexico 10 feet deep. Multiple beaches have been growing gulfward.

➤ AN ASTONISHING amount of sand has been deposited on the Gulf of Mexico's shorelines by waves and currents in the 2,000 to 5,000 years since the sea rose to its present level.

This has been discovered by Dr. W. Armstrong Price of the department of oceanography of the Agricultural and Mechanical College of Texas, College Station, Tex.

On the gulf coast there is enough sand to line the entire coasts of the United States and Mexico 10 feet deep.

Great lengths of the gulf shore lines have multiple beaches and have been growing gulfward. This sand gives an indication of still more immense amounts of finer sediments deposited with it, but farther offshore. Some of the sand came from rivers, the rest from erosion of shallow bottoms by waves and currents.

Galveston stands on a low, sandy barrier island that is merely a beach thrown up several miles offshore where storm waves have been grounding through the centuries. But this beach is multiple. Galveston Island is composed of some 20 low, parallel ridges of sand separated by shallow marshy swales. The 20 ridges represent a two-mile growth of the island toward and into the gulf, with the beach having shifted gulfward as many times. At each shift it grew by building a new beach in front of and overlapping the older one.

The multiple beach condition has been observed on the great barrier islands of Texas from the Rio Grande to the Colorado and from east of the Brazos to Louisiana. In western Louisiana, where marsh forms the coast, old beach ridges are found stranded in the marsh and separated by marsh strips. This repetition of beaches shows rapid outbuilding of the coast there. These sandy ridges in the marsh are called "cheniers" in Louisiana because they are lined in places with live oaks (French, *chêne*, oak tree).

Multiple beaches belonging to the present sea level have been studied along a total of 400 miles of the Louisiana and Texas coast. There is an average of about 17 beach ridges along this 400 miles. Beaches line a total of at least 1,200 miles of the gulf shorelines. With one beach for 1,200 miles and 16 additional old beaches for 400 miles, there is a total of 7,600 miles of beaches so far known. The width of the barrier islands of parts of Florida and Mexico suggest that there are probably many more miles of old beach ridges there.

The 7,600 miles of beaches on gulf shores would supply the entire coast line of the United States and Mexico with a beach or with an additional beach ridge, where they already have beaches.

From many parts of the coast, there can be seen inland another line of sandy barrier islands sitting high and dry at an old abandoned shoreline. In places in Florida there are two of these ancient shorelines, one behind the other. Examination shows that these ancient barrier islands are also composed of parallel beach ridges and that an equal amount of beach sand per mile of length is stored along them, where they are still preserved.

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RESOURCES

Get Both Sulfur and Iron From Iron Sulfide Source

➤ WORLD SHORTAGES of sulfur, and the industrial sulfuric acid made from it, may be relieved by utilizing Minnesota's great deposits of iron sulfide to obtain both sulfur and iron.

This is the hope of government scientists working in the laboratories of the U. S. Bureau of Mines at the University of Minnesota. The objective is to find practical means to recover both sulfur and iron from the iron sulfide deposits. Also under study is the problem of recovering manganese from low-grade manganese-bearing iron ore which is plentiful in the state.

Sulfur is on the government's critical materials list. The sulfuric acid made from it is essential in many industrial processes. Most important is in making the superphosphate fertilizers on which American agriculture depends in large measure. But it is also widely used in making insecticides, paper pulp, explosives, dyes and coal tar, rubber, paint and varnishes. The world demand for sulfur can no longer be met by the natural sulfur mined in Louisiana, Texas and other parts of the world.

Greatly increased production of domestic manganese, essential in steel making, is important to enable the nation to be self-sufficient in this basic metal. America has plentiful manganese ore but it is low-grade. Every ton of steel made requires about 13 pounds of manganese. Only about 10% of the amount now used is produced in the United States.

America's present supply of manganese comes largely from India, Africa and Brazil.

A decade ago it came from the Soviet Union but this source of supply is now practically closed. Great deposits of manganese-bearing formations are found in Minnesota's Cuyuna Iron Range. However, the ore has little practical value until a commercial method of reducing it has been developed.

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ENTOMOLOGY

Ant-Free Orange Trees Yield Healthier Fruit

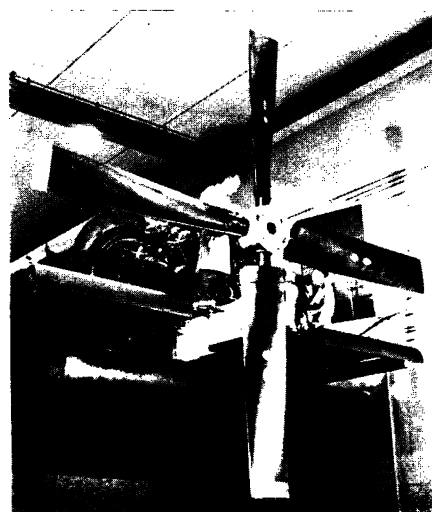
➤ ORANGE, grapefruit and lemon trees are healthier and give bigger and better fruit if they are kept free of ants. Not that the ants harm the trees—they attack the natural enemies of some of the tree's worst pests.

Ants are not directly interested in the fruit tree pests, but their presence allows the mites, aphids, mealybugs, scales, etc., to multiply without being cut down by their specific insect enemy, the kind eliminated by ants.

Having ants around citrus trees causes a drop in leaf and fruit production and fruit from infested trees is smaller, Dr. Paul DeBach and E. J. Dietrick and C. A. Fleschner of the University of California College of Agriculture have found. They are studying control of orchard pests by their natural enemies, a method known as biological control.

When ants are around, the number of mites increases as much as 20 times normal, they found. Trees used in their experiments had not been treated with insecticide for a number of years.

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RUBBER FILLED — A filling of sponge rubber makes these propeller blades hard and strong and keeps them from vibrating in and out under extreme pressures.