

and writing about social organization, there is need for more precise statistical description and analysis of the actually existing organization of society. Human society has actually evolved a great many more of what amount to differentiated castes than have ant or termite societies. But we know practically nothing about what proportion of our human workers castes are either optimal or necessary."

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ZOOLOGY

National Park Animals In Condition For Winter

AS THE TOURIST season ends in the national parks of the West, a general check-up shows that the wild animals given protection therein generally are facing the winter in good condition, after a favorable summer. One or two situations, however, are causing concern.

The superintendent of Yellowstone National Park has informed the national parks office in Washington that the forage available for the northern herd of Yellowstone elk is not adequate and that a serious situation may arise should the coming winter be a severe one. Contributing causes are a series of dry years that have resulted in a poor forage crop, and over-grazing caused by heavy concentration of elk just inside the northern park line at Gardiner, Mont., and in the Lamar River district of the park at the junction of the Lamar and Yellowstone rivers. As a matter of fact, both the northern and southern elk herds have increased to the point where there is a serious problem of furnishing sufficient winter feed.

Commenting on this situation, Dr. Harold C. Bryant, whose supervision of research and educational activities in the national parks includes wild-life problems, states that national park authorities are determined upon a policy of reducing the amount of artificial feeding, with particular reference to cottonseed cake. It is their purpose to get the elk, particularly the northern herd, back on a self-reliant basis so as to present typical wild elk herds to visitors and not animals semi-domesticated through feeding. This they hope to achieve through the acquisition of additional natural feeding grounds and the control in numbers that will result from normal winter kill when artificial feeding is stopped.

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MINING ENGINEERING

Mining Sulfur Under Water Hailed as Chemical Advance

THE SUCCESSFUL mining of sulfur under water has just been reported as one of the outstanding chemical achievements of the year. This comes as welcome news in the face of information that many ideal deposits of sulfur are on the way to exhaustion. Credit for the practical application of the so-called Frasch process invented a number of years ago to vast deposits of sulfur under lakes and swamps in Louisiana goes to Lawrence O'Donnell, chemical engineer, and his associates.

Unexpected Yields

Bravely begun during the depression, the project had to overcome economic as well as chemical engineering problems. The yields of sulfur have far exceeded the expectations of the engineers in charge of development and operation. Whereas a plant was built with the expectation of turning out perhaps 300 long tons per day it has reached a production of 1,400 tons and regularly produces 1,200.

The mining is carried out by sinking a shaft 700 feet below the bottom of a lake where a stratum of sulfur 200 feet thick lies. Pipes leading to the plant on the shore are sunk and the sulfur, liquefied by superheated water, is forced out by means of compressed air. To date 200,000 tons of sulfur of 99.92 per cent. purity have been taken from the wells.

Lake Peigneur, where the mining is being carried out, contains half a dozen small islands formed by the pressure of plugs of salt originating five miles down in the earth. The great pressure there causes the salt to become plastic and it forces its way through faults and fissures to a point below where the sulfur is found. Hence salt is likewise very profitably mined in this locality. In fact it is these "salt domes" that force the sulfur nearer the surface of the earth. Oil is also found in the capping rock and on the sides of the domes. The Gulf states are of course noted for their oil deposits.

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"DREADNAUGHT" DINOSAUR BROUGHT HOME CANNED

Broken into 20,000 pieces, so that it had to be packed in containers ranging in size from soup cans to five-gallon buckets, the skeleton of a "Dreadnaught" dinosaur, more elegantly known as *Paleoscincus*, is now at the American Museum of Natural History, being assembled like an immense jigsaw puzzle by Barnum Brown and his associates. *Paleoscincus*, as this restoration sketch shows, was built on the general basic specifications of a modern horned toad, but with vastly larger dimensions: length, 18 feet; breadth, 6 feet; height, 5 feet.