MINERALOGY

Bauxite, Vital Strategic Ore Accessible to All Powers

Many Workable Beds in U. S., But We Have Preferred Supplementing Our Supply by Imports from Surinam

BAUXITE, ore of aluminum, more prominent in the national eye than ever since American soldiers moved in on the Dutch Guiana fields, is one of the most impartially distributed of all strategic minerals. None of the warring powers has a monopoly of it. There are large deposits in both North and South America, to meet this country's requirements. Britain has Empire sources in India, Africa and Australia, and her Dutch ally plenty in the Netherlands Indies. There are vast beds of bauxite in the USSR. The Axis powers, on their side, have mines in their own and conquered territories: Hungary, Italy, Yugoslavia and France, with undeveloped deposits also in Greece and Rumania.

Greatest deposits in the United States are in Arkansas, but there are also workable beds in Alabama, Georgia. Mississippi, Tennessee and Virginia. The Alumium Company of America, until now this country's only producer of aluminum directly from the ore, has not worked the domestic beds to the limit, preferring to supplement the home supply with high-grade bauxite from Surinam (Dutch Guiana) and thereby conserve the ore resources within the boundaries of the United States. In addition to the Surinam bauxite, there are known to be immense deposits in Brazil, but these have not been opened up as yet.

Bauxite is a mineral that looks very much like hardened, fine-grained clay. Essentially it is an oxide of aluminum, with some water intimately bound in. But combinations of other elements are almost always found with it: iron, silicon and titanium principally, with much smaller quantities of calcium, magnesium, sulfur, manganese and chromium. In its purest form, bauxite is grayish white, slightly tinged with yellow; but presence of the other elements, notably iron, gives it a wide range of shades, from pink or yellow to dark red or brown.

The mineral gets its name from the village of Les Baux, in southern France, near the city of Arles. Here it was first identified and described by a French scientist, P. Berthier, just 120 years ago.

Dictionaries disagree on the pronunciation of the word. Webster's Unabridged and Funk and Wagnalls say it should be pronounced "boze-ite," but the Century Dictionary holds for "bawks-ite," admitting a popular modification to "box-ite." So you can say it as you please.

Interestingly enough, the super-dreadnaught of all dictionaries, the massive, ten-volume Oxford, does not list the word at all. The reason apparently is that the first volume, containing all the A-B words, was published in 1888, when aluminum was still only a chemical curiosity and its ore of no particular interest except to a few mineralogists.

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In these patients the lower end of the muscle that bends the knee, located on the under and outer portion of the leg above the knee, is transferred to the paralyzed quadriceps muscle at its lower end on the knee cap. The quadriceps is the muscle on top of the upper leg which extends the lower leg and straightens the knee.

After the operation, the patient must learn how to use the transposed healthy muscle. This knowledge does not come spontaneously or by a trial and error process of learning. The patient "discovers" how to use his transposed muscle after random attempts. Once discovered, however, the ability to use the muscle is immediately retained by most patients without having to learn it by repetition.

In order to learn how the readjustment of transposed muscles proceeds, why some patients do better than others, and how much can be expected from the operation in a given case, Dr. Phemister has used an apparatus which records the electrical activity produced by the muscle in action, somewhat similar to the electrocardiagram.

Working with him under a grant from the Foundation were Dr. Paul A. Weiss, Dr. C. Howard Hatcher, and Dr. Paul Brown.

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Bronchial Tubes Suspected

THE VIRUS that causes infantile paralysis may be inhaled with the dusty air of summer and fall and invade the body through the bronchial tubes.

This new, though as yet unproved, theory of how the crippling malady spreads and strikes was presented by Dr. Harold K. Faber, of Stanford University.

Monkeys got infantile paralysis by inhaling finely divided, dried droplets of material carrying the virus of the disease, he reported. The infectious particles were fine enough to be inhaled deep into the branches of the windpip leading to the lungs.

The bronchial membranes are liberally supplied with nerve endings, and there are nerve end organs very near the surface in the air terminals of the lungs, he pointed out. The virus might therefore easily reach the nerves of the spinal cord from the bronchial tubes.

Dr. Faber's results were obtained with monkeys, and so far only with a few of these animals. He emphasized that they are by no means conclusive and that they only suggest a way that humans may get infantile paralysis.

Heretofore scientists have thought that the infantile paralysis virus invaded the body either along the olfactory nerve from the nose or along nerves from the stomach after being swallowed. The olfactory route was definitely excluded and the stomach route probably excluded in Dr. Faber's experiments.

Infantile paralysis occurs oftenest in summer and fall, and at those seasons there is more dust in the air than in the colder and wetter spring and summer. This aspect of the situation has had very little attention in the past and Dr. Faber proposes to investigate it further.

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