

MEDICINE

Separate Purer Part ACTH

A purer fraction of ACTH has been isolated. This may lead to a substance which would combat the shortage of ACTH and minimize the harmful side effect.

► THE man who first isolated ACTH now has a purer, more powerful and less harmful form of the famous "anti-arthritis" hormone.

The scientist is Dr. C. H. Li, professor of biochemistry at the University of California. The use of a fraction of the ACTH hormone, obtained by breaking down the ACTH molecule chemically, was first reported last December.

Just returned from Sweden, where he has been directing a project aimed at synthesizing the hormone, Dr. Li disclosed progress which eventually may produce a substance which would overcome the shortage of ACTH and would minimize the harmful side effects resulting from continued administration of the whole hormone.

Dr. Li reported on the results of treatment of three patients in Sweden with the new, purer fraction. So powerful is the new fraction that 3 milligrams per day will

give the same result as 100 milligrams of ACTH—the usual dosage.

The patients all derived the same beneficial effects from the fraction as they do from whole ACTH.

The scientist reported that since so much less hormone need be administered, the side effects—such as generation of diabetes and generally disturbance of carbohydrate metabolism—were diminished. He cautioned that the new substance has been used in only three cases, however, not enough from which to draw lasting conclusions.

Dr. Li also reported that real progress has been made in the direction of synthesizing the new ACTH fraction. It has a molecular weight of about 1,000, within the limits for synthesis; whereas whole ACTH has a molecular weight of about 20,000, so large as to be beyond synthesis. The fraction is called a peptide mixture, composed of eight amino acids. In some

way this mixture retains the biological activity of the whole hormone.

The scientist is now directing two large projects involved with attempts to synthesize the hormone and evaluate its biological properties. One in Sweden is at Upsala, where the Medical Research Council of Sweden has placed at his disposal extensive facilities and a budget of 200,000 crowns. He is working in association with Dr. Arne Tiselius, Swedish Nobel Laureate. He will return to Sweden for a stay of a month in April.

Dr. Li is directing a similar project at Berkeley.

Science News Letter, March 25, 1950

MINING

Bauxite By-Products Are Recovered by New Process

► ARKANSAS bauxite ore, now being used as a source of alumina, contains valuable titanium and iron minerals, recoverable by a process just revealed by the U. S. Bureau of Mines. Recovery of these by-products will promote the use of domestic bauxite.

Methods of recovery of these present wastes are given in a report now available from the Bureau's publication section at Pittsburgh, Pa. Its title is "Titanium and Iron Minerals from Black Sands in Bauxite." It was prepared by W. A. Calhoun, Bureau metallurgist, Bauxite, Ark.

In extracting alumina from bauxite ores through a modified Bayer process at Bauxite, Ark., 80,000 tons of black sands and 392,500 tons of brown mud are now discarded each year as waste. Bureau tests show that about 100 tons of marketable iron ore and about 45 tons of low-grade ilmenite, a titanium ore, could be recovered from the black sands each day. Future tests on the brown mud waste products are planned.

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AGRICULTURE

Plant Timothy Grass Seeds Close for Large Crop

► PLANT your timothy grass seeds close together if you want a large crop.

Studies by Dr. Stella Champness of the Grassland Research Station, Stratford-on-Avon, England, have shown that differences in microclimate between areas with exposed soil and those with plant cover are significant. Sparsely seeded seedlings have a higher mortality than those planted close together, she reports in the journal, *NATURE* (Feb. 25).

This is due, she believes, to the changes in the climate in the immediate vicinity of the growing timothy plant. This in turn is dependent on the number of other plants, as well as the moisture and nutrients in the ground.

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URANIUM SHADOW SHOW—E. H. Rowe sprays a specimen with uranium atoms at a temperature, under the glass, of 3,600 degrees Fahrenheit. When placed under an electron microscope the part of the sample which has been coated with uranium will cast a shadow making it possible for scientists to study objects which formerly could not be seen even when magnified 100,000 times. Industry has recently been authorized to use uranium in commercial research.