

Tests of Ontario Lignite Indicate Great Promise

Research Foundation Has Conducted Experiments for Two Years and Believes That Product Can Be Utilized, Both for Commercial and Domestic Purposes

(From The Financial Post)

Highlights of what has been accomplished in tests of Northern Ontario's lignite, first exclusively given in the May 14 issue of The Financial Post, are now supplemented by official information from the Ontario Research Foundation. The official tests conducted in Europe, and the practical demonstrations since with the resultant products of the Research Foundation, give increasing evidence that in Northern Ontario's lignite, Ontario has an important fuel source that now only awaits development, beneficiation, marketing and education of the public to its use.

It is two years since the Ontario Research Foundation undertook, working in close co-operation with the Ontario Department of Mines, to test the value of this fuel and to work on the problem of its utilization. Under the arrangement all the expenses of the Research Foundation in this connection are footed by the Department of Mines, which pioneered the investigation into the lignite deposits at Blacksmith Rapids about three years ago.

Send 110 Tons for Test
One test that responded particularly well to the samples shipped was the Fleissner process, controlled and licensed for operation on a royalty basis. In this process, the raw lignite from 1½ to 6 inches in size and containing about 50 per cent moisture is charged through the top of large cylindrical vessels. The smaller commercial sizes of these vessels are about 700 cubic feet, capable of containing 15 tons of lignite.

Product Has 20% Moisture
If a lower moisture is extracted the product absorbs moisture from the atmosphere, reaching a stabilized point around 20%. No by-products are formed in this process and the dried material is found to shrink about 20% in volume. An analysis of this fuel shows it to have a heat value of 9,000 b.t.u. per pound, an ash content of under 6% and a moisture content of 20%. The sulphur content is about 1%. The lignite subjected to this process has a hard laminated structure of fair lustre. The heating value is about two-thirds of that of the high-

grade bituminous coal of around 13,500 b.t.u. Tests have shown that it is remarkably resistant to handling and is but little affected by weathering. In a 46 day test on the roof of the Research Foundation there were practically no signs of disintegration while raw lignite under the same exposure had disintegrated to a useless fine dust.

One Ton Makes 1,100 Pounds of Fuel

In the Fleissner process of treatment, 2,000 lbs. of raw lignite containing 50% moisture shrinks to 1,100 pounds of dried lignite and in the process gives up approximately 76 imperial gallons of water.

In Europe this class of fuel is extensively used for locomotive and other steam generating and under certain conditions it is mixed with bituminous coal.

Tests set up in the laboratory of the Research Foundation show that it gives good results for domestic purposes. In an open grate demonstration it burned with a long pleasing flame and gave indications of being superior to cannel coal. Tests conducted in a Standard Quebec heater, fitted with solid grates, gave equally satisfactory results. It burned freely and efficiently, was quick to re-kindle into a quick fire and held well under damper control.

Other Tests Made

In addition to the Fleissner process, tests were conducted in Germany on carbonization by the

Lurgi and Kohlenveredlung processes. In both of these processes the raw coal was heated in a carbonization oven to a sufficiently high temperature to remove all moisture and to remove most of the tar, oil and gas, all of which are collected, leaving behind a char or semi-coke, containing about 10 to 12 per cent. volatile matter. This char comes from oven in rather small pieces, and while it can be burned in this form in industrial furnaces, using chain grades, to make it applicable for domestic furnaces or fuel it must be briquetted with a binder. From one ton of the raw lignite with 50 per cent moisture, carbonization makes about 700 pounds of char which will give 770 pounds of briquettes, having a heating value of over 12,000 b.t.u. per pound.

Withstand Handling

Briquettes made by these processes using a binder are waterproof and of sufficient strength, to withstand transport and handling. One difficulty with these processes of briquetting is that the resultant tar from the carbonizing oven is not sufficient to provide the pitch binder required in the briquetting process. This would necessitate the outside purchase of a tar or pitch and transportation to the site of beneficiation.

Under test in a Quebec heater at the Research Foundation these briquettes were demonstrated as a desirable fuel with one evident disadvantage, that smoke is produced when recharging the furnace. This is a characteristic of all briquettes using pitch binders and is not alone peculiar to lig-

nite. The briquettes in the Quebec burner burned completely to ash without disintegrating and were evidently a desirable fuel subject to draught control for domestic use.

A further test was conducted on the raw lignite by briquetting without any binder. In some parts of Germany this form of briquetting is carried out with a great deal of success, simply by drying and the application of

pressure alone. The tests conducted on Ontario lignite, however, with this process were not at all comparable with the results obtained on German lignite.

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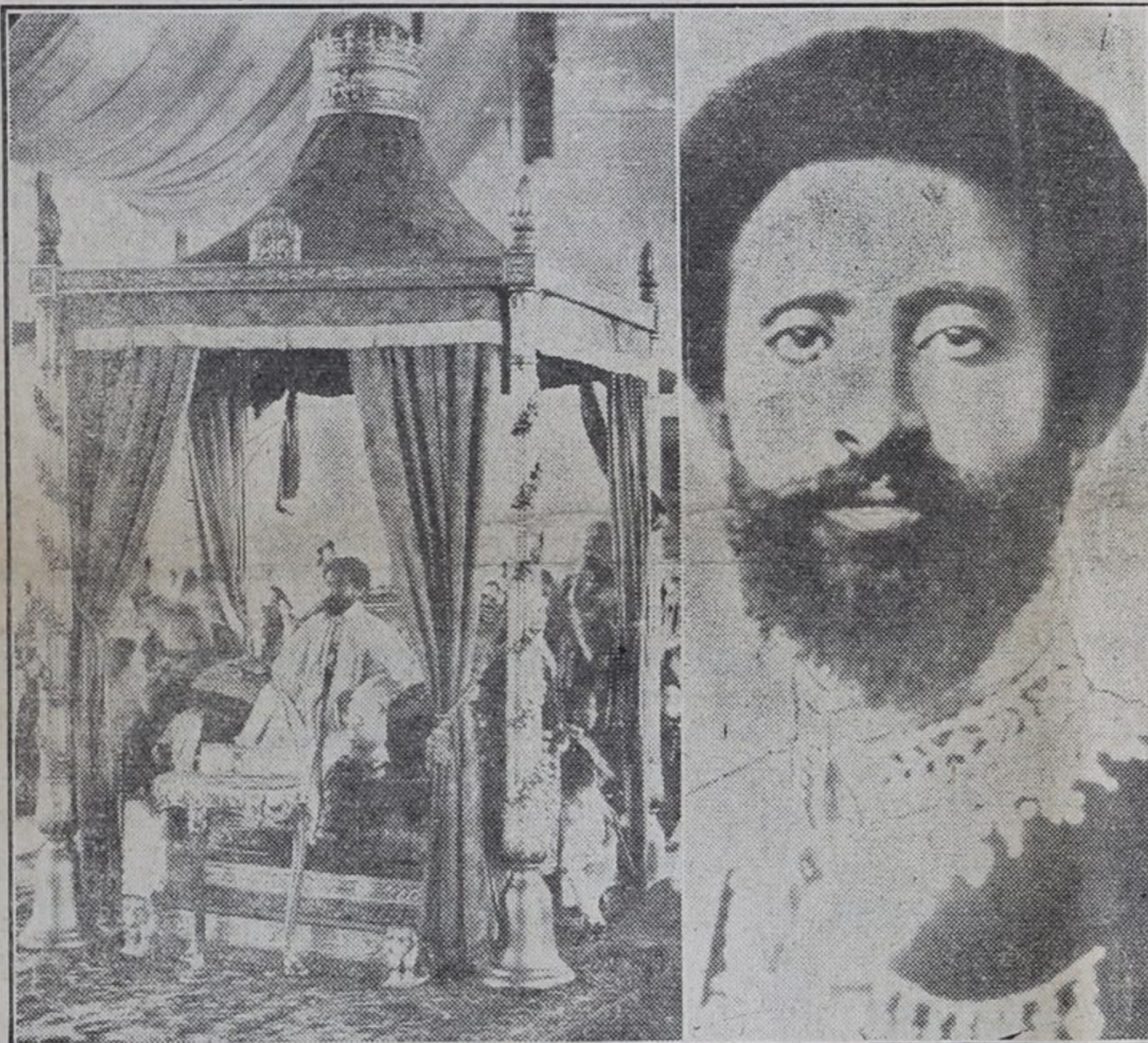
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KING OF KINGS AND LION OF JUDAH THREATENED BY DEPOSED MONARCH



Ras Tafari, King of Kings, Lion of Judah, and otherwise known as the Emperor of Abyssinia (shown above in a close-up and also on his throne), has received a warning from Lidj Jeassu, who was Emperor before Haile Selassie deposed him in 1917. Jeassu has been in captivity for the past fifteen years, but has at last escaped in the guise of a woman and is in hiding in the wild hills of Gotjam district, with a large and influential following. The former Emperor says that as soon as the rainy season is over he will go down to Addis Ababa and settle accounts with his old enemy.

DEATH OF GERMAN ADMIRAL RECALLS SEA FIGHT

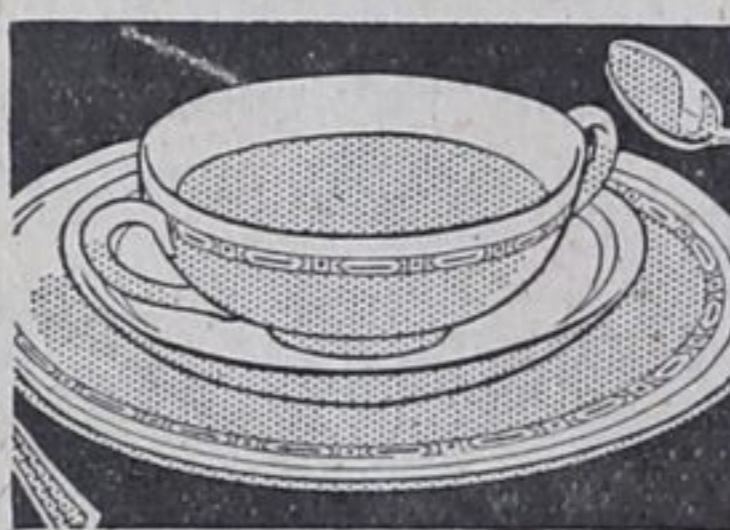


The recent death of Admiral Franz von Hipper at Hamburg, Germany, recalls the great highspot of his career, the Battle of Jutland, on May 31, 1916. Von Hipper was opposed on that occasion by Admiral Beatty, Admiral of the British Grand Fleet, with whom he had had a previous engagement in 1915. Beatty paid von Hipper a fine tribute in characteristic seadog manner: "He was a great fighter and a gallant fellow... Although the British losses were heavy in the Jutland battle, it is generally conceded by naval experts that the German fleet received such a pounding as to keep it from ever again seeking an open fight. The first engagement between von Hipper and Beatty resulted in a victory for the British admiral, the German fleet losing the powerful Blucher, as well as having two other ships badly shattered. But it was von Hipper's seamanship that saved the remnants of his force from total extinction.



A Real Fishing Story

Dr. George F. Clark, of Woodstock, N.B., believes in producing evidence when telling his fish stories. This picture shows him standing beside eight Atlantic silver salmon which he caught in the Tobique River, New Brunswick. Three among them weighed 16, 18 and 20 pounds respectively.



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