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Proceedings of the Madras Government, Revenue Department,
14th *August* 1872.

No. 105. From the Secretary to the Government of India, Department of Agriculture, Revenue, and Commerce, (Agriculture and Horticulture,) to the Secretary to the Government of Madras, dated Simla, 6th August 1872, No. 9-348.

With reference to this Office Circular No. 3, dated the 23rd June last, I am directed to forward herewith copy of a [illegible]d memorandum, by Lieutenant-Colonel Boddam, on the cultivation of Sorgho as a forage plant, and to request that, with the permission of His Excellency in Council, you will be good enough to send copies to every Commissioner, District Officer, Canal Officer, Horticultural Society, as well as to other bodies or individuals in Madras likely to take an interest in this subject.

(True Copy.)

(Sign[illegible]) W. HUDLESTON,
Secretary to Government.

EPARTMENT,
ACAMUND,
August 1872.

No. 106.

No.

To

THE SECRETARY TO

ERNMENT OF INDIA,
MENT OF AGRICULTURE,
REVENUE, AND COMMERCE,

—In reply to your letter,
g the extensive circulation of
Boddam's paper on "Sorgho,"
stion of the cultivation of the
thoroughly gone into experi-
d to Cholum and Jowari, and
ain and fodder, is preferred

ve the honour to be,
Sir,
ur most obedient servant,
W. HUDLESTON,
Secretary to Government.

Miscellaneous.

I have the honour to inform you that t
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mentally in this Presidency. These pl
the cultivation of the latter, which sup
beyond comparison by farmers.

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Ed. F. R. Bantleman.

Revised Paper on the Cultivation of Sorgho as a forage plant.
By Colonel Boddam.

A NEW FORAGE PLANT FOR DRY AND WET CULTIVATION—SORGHO (SORGHUM SACCHARATUM).

Northern Chinese Sugar-Cane.

THIS remarkable plant is a native of the north of China. Its giant growth and its beautiful and graceful appearance and refreshing greenness in the driest season, and the expectation of finding in it a rival to sugar-beet, induced the French Consul at Shanghai to send some sorgho seed to his Government. In 1854, Mr. Browne, Agent of the United States Patent Office, took to America some French seed, which was distributed by the Government. The plant was cultivated by a few farmers, but it received little attention until an ex-Governor of South Carolina reported the results of his trials to a farmers' club, which brought sorgho into notice. Since 1855 its cultivation has steadily increased, and it is now one of the great crops of the country. It is grown in France and Algeria for alcohol chiefly, and in America for seed, forage, sugar, syrup, alcohol, vinegar, and beer. In the ten North-Western States, where it flourishes, there were, in 1864, 366,670 acres of sorgho, and sorgho sugar was selling at Chicago at 4½*d.* per lb. But for sugar, sorgho has turned out a failure. Its great merit as a forage plant is its principal recommendation, and on this point an official report of the United States Agricultural Department has declared that the *value of sorgho for feeding stock cannot be surpassed by any other crop, as a greater amount of nutritious fodder can be obtained by it in a shorter time within a given space, and more cheaply.* While grass yields a ton or a ton and-a-half of hay, sorgho will yield from two tons to nine tons of dry fodder. Sorgho *(Lootsoh)* flourishes wherever Indiancorn flourishes. The seed is sown for transplanting on warm ground, finely broken in the middle of April. The young plants are watered with liquid manure as soon as they appear, and in three or four days watering is repeated night and morning, if the weather is dry. They are pricked out, when six inches high, in rows three feet wide and six inches from plant to plant, and are again watered with liquid manure when a foot high. Weeds are kept down by hoeing until the cane matures, about November.

Chinese method of growing sorgho.

The crop begins to come to market, however, early in September, or as soon as the stalks are sufficiently sweet for chewing. A Chinese laborer earning 10*d.* a day can cultivate about two acres during the six months that the crop needs his labor.

In America it is found that sorgho can be successfully grown on all lands where a fair crop of Indiancorn can be grown. Deep loose warm soil, even of poor quality, produces the sweetest and most juicy stalks. Irrigation is recommended, but can seldom be attained in the United States. In deep black loam sorgho reaches a height of 16 feet or 18 feet; what will it not do on our future sewage farms? The juice of the giant growth is not so sweet, nor is it easily crystallized. The seed should be soaked 24 hours in tepid water, in which one oz. of saltpetre is dissolved to every six gallons. It is then dusted with gypsum, and drilled two feet apart and 20 seeds per foot (for forage). In seven or eight days a horse subsoil plough is put between the rows, up one side down the other. This cultivation is repeated as the crop advances, but the plants must not be earthed up. The upper roots spring from the stalk above the ground, and they must be left exposed. The first cutting may be made as soon as the crop is large enough

American culture.

for stock, and in ordinary seasons two others will follow. To dry the crop it should be set up in shocks, and the shock built with precautions for ventilation. One man with a sub-soil plough can cultivate ten acres.

Directions for growing Sorgho in the Mysore Province.

THE Chinese and American methods of cultivating sorgho will answer in Mysore, each at its proper season. If the crop is to be sown in the early rains of April and May, the Chinese system is recommended, as there is less risk of failure from drought by sowing in a nursery bed and subsequently planting out in rows. Failure must sometimes occur when the seed is sown in drills at this season, as the rain often holds off for a fortnight, or three weeks, and the sprouting seeds or seedlings perish from want of moisture. Later, when the rains are regular and copious, the American system will be more suitable, with the following modifications:

Plough the land well and deeply, apply manure liberally, say from six to seven tons of farm yard manure per acre, and if saltpetre is procurable and cheap, add it at the rate of 100 lbs. per acre. Plough this manure crosswise to the first ploughing, harrow and level, then sow the seed in drills 26 inches apart, and 20 seeds per foot. In seven or eight days put a bullock hoe or cultivator between the rows up one side and down the other, or hoe the rows by hand. Continue the cultivation as the crop advances, but in no case earth up the plant stems, as they send out roots above ground, which must be left exposed. The first cutting should be made just before the canes show signs of flowering; the plants will send out side shoots two or three at a time for successive cuttings, affording a supply of excellent green fodder, extending over a period of six or eight weeks. If the crop is to be used for dry fodder, the canes, when cut, should be set in shocks, and the shocks built with precautions for ventilation. If the crop is required for seed only, the leader of the canes should be left to flower and mature its seed, while all the side shoots may be cut for fodder.

Under this system of dry cultivation and high farming at Hunasuru near Mysore, a plot of 1,296 square yards of very rich land which had long been under cultivation, and was heavily manured beforehand, produced 12,657½ lbs. of fodder and 1,498½ lbs. of seed, equivalent to 21 tons 1 cwt. 1 qr. and 10 lbs. of fodder per acre, and 2 tons 9 cwts. 3 qrs. and 5 lbs. of seed: this very large out-turn is attributed to the extreme richness of the land, a favorable season, and high farming. Again, in the Toomkoor District, in the rich black soil of Gubbi, where sorgho was tried, the canes attained the height of 18 feet, and a very heavy crop of fodder was cut. Unfortunately the weight per acre was not recorded. On the average light soil of Bangalore, with a moderate supply of manure, upwards of 10 tons of fodder were cut per acre. Even this last-mentioned crop far surpasses the out-turn of any grass grown in the province, and is superior to the average out-turn of an acre of the country jowar or cholam.

So much for the results of high farming; no doubt in favorable seasons a fairly remunerative crop might be raised even under the Native system of light ploughing, scanty manuring, and careless weeding.

The seed could be sown with the Sudiki*—(see Buchanan's Mysore, page 261, plate XI.)—or country pulse drill; three of these pulse drills tied to the Native harrow and served by three men would do for the sowing process, followed in due course after a fortnight by the country bullock hoe.

* Also styled Saddé or Kál Kurige.

There are a great many kinds of so-called sorgho (the two real sorts are the Imphe or red seed already known in parts of India, and the black seed of North China), the last-mentioned containing most saccharine matter. As the several kinds hybridise freely, they should be grown separately, never near each other; when the seed is formed, the crop must be watched and birds scared; parrots are particularly fond of the seed, and destroy immense quantities if left undisturbed.

To sum up, the superior merits of the sorghum saccharatum over grasses consist in (1) its heavy crop, (2) the rapidity of its growth, (3) its abounding in saccharine matter, (4) its power of standing heat and drought, and of being grown nearly all the year round, especially in the dry and hot months, when every kind of grass is burnt up; and lastly, that with high farming it is a most remunerative crop.

BANGALORE;
The 8th July 1872.

E. BODDAM, *Colonel,*
On special duty.

7 copies
sent 19 Aug. 72

Revenue Department.
14 Augt 1872.

No. 1198.

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To

THE SECRETARY TO THE GOVERNMENT OF INDIA.

Dept of Agri: Rev: Commerce

Sir,

In reply to your letter directing the extensive circulation of Col: Boddam's paper on "Jowpho," I have the honor to inform you that the whole question of the cultivation of the Jowpho and Imphee plants was some years ago thoroughly gone into experimentally in this Presidency. These plants

plants are allied to Cholum and Jowari, and the cultivation of the latter, which supply both grain and fodder, is preferred beyond comparison by farmers.

LR

To

Govt of India

Col Beddome's Report on the cultivation of Jowari