

**Questions on Streak Disease.—Contd.**

When we started some two or three years ago to investigate the results of using mineral phosphates, to get the best results we found it should be ground to a very fine flour and air separated. When we tried the effect of mineral phosphates against other phosphates we got better results than we anticipated. Since then we have been carrying on the experiments.

Mr. Dodds is very interested in this and has carried out a number of experiments with the various forms of phosphates, and I think we can agree on these points that with certain soils in

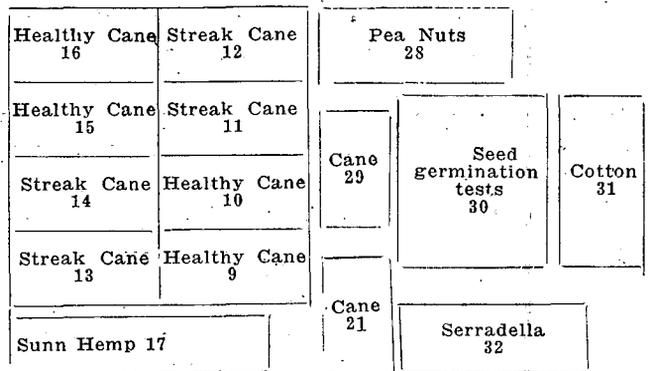
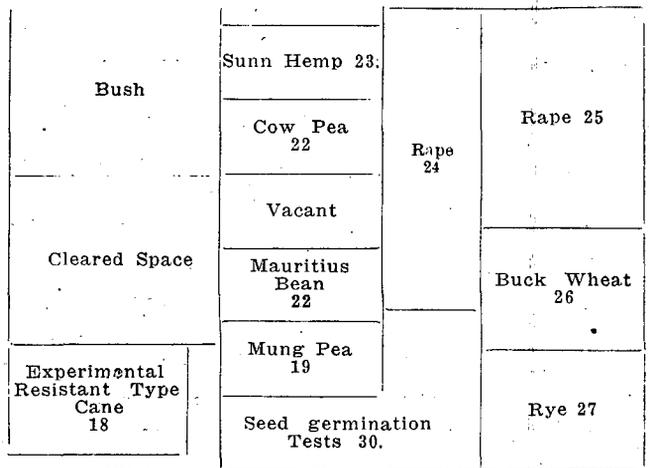
Natal, not so much the sandy soils but more particularly the midland Natal soils which are sour owing to mineral sourness, the use of superphosphates is disappointing, and a less soluble form of phosphates such as a mixture of rock and superphosphate or bonemeal or basic slag is better for that type of soil. When you come to a sweet limestone soil superphosphates is far and away the best form to use. Between those two extremes it may be difficult today to lay down a hard and fast rule, but so far as I can judge a mixture of the mineral and superphosphates is the cheaper way of improving your soil.

## AT THE UMBOGINTWINI EXPERIMENTAL PLOTS.

As soon as the weather effected a temporary improvement the party left for the experimental plots and spent some time examining the crops. From a sugar planter's point of view the plots demonstrating Streak disease were intensely interesting. On the one hand there was a plot of cane planted with the disease, and alongside of it another planted with Streak free cane. At four months old this latter cane contracted the disease from the former, by contagion, and one of the plots was so full of the disease as to be apparent to the most inexperienced person. But apart altogether from the obvious effects of the Streak on the leaves, a percentage of the cane growing in the plots planted with Streak free cane clearly showed a much greater improvement in the growth of the stalks than the neighbouring one. So close together were these planted that it was possible to touch the cane on either hand and compare the growth of the stools one with the other. All manner of theories have been put forward in the past tending to minimise the seriousness of this disease which has evidently been in the country for many years, but the ocular demonstration provided by Mr. Storey was beyond question. Seen at a distance all the plots looked very fine, the cane being uniform and of a beautiful rich greenness. For this the wet season is largely responsible, and it would be interesting to see the results in a droughty season. One naturally assumes that the results would be even more striking:

Besides the cane experiments various other plots of interest to Sugar planters were provided as will be seen from the following diagram:—

**Station I. DIAGRAM OF EXPERIMENTAL PLOTS**



Hut

From Rendezvous.

At the Umbogintwini Experimental Plots.—Contd.

**DESCRIPTION OF PLOTS.** Section 1.

Nos: 9, 10, 15 and 16.—Originally healthy cane but now wholly streaked.

Nos: 11, 12, 13 and 14.—Streaked Cane.

These plots were planted in March 1924, using 1,000 lbs. of No. 6 Cane Fertiliser per acre on Nos. 10, 12, 13 and 15. All the plots were fertilised during 1923 with 500 lbs. of mixed fertiliser per acre. No. 17.—**Sunn Hemp**—Planted 6th November, 1924, using 1,000 lbs. Rock Phosphate per acre.

No. 18.—**Experimental Resistant Type Cane**—

The plant cane (healthy) used for these experiments was taken from badly Streak and infected fields. The object being to prove whether or not these plants are resistant to the disease.

No. 19, Mung Peas	Planted 4th December, 1924, using 1,000 lbs. of Rock Phosphate per acre.
" 20, Mauritius Beans	
" 22, Cow Peas	
" 23, Sunn Hemp.	
No. 24, and 25 Rape	Planted 27th February, 1925, after a crop of potatoes.
No. 26 Buck Wheat.	Planted 27th February, 1925, after a crop of potatoes.
" 27, Rye	
No. 28, Pea Nuts	Planted 13th November, 1924, using 300 lbs. Mixed fertiliser per acre.

No. 29 Canc—Potash Fertiliser experiment.

No. 30, Seed Germination Tests.

No. 31, Cotton—Meade Long Staple. Planted 5th November, 1924.

No. 32, Serradella—Planted 6th November, 1924 with 1,000 lbs. Rock Phosphate.

No. 21, Cane—For dusting experiments.

**Cane Plots in the Valley.**

Owing to the state of the weather and the fields it was not possible to visit the river plots, but in the afternoon a visit was paid to the cane plots in the valley which were most interesting. Unfortunately a light rain made overcoats a necessity, and it was impossible to investigate very carefully the explanations which were broadcasted concerning these plots. Both Mr. Storey and Mr. Blewett gave explanations in regard to the plots and the experiments upon them.

The following diagram will illustrate the experiments as set out in the fields:—

STATION 3.

**CANE PLOTS IN VALLEY.**

33.	6 rows	Control.
34.	6 rows	600 lbs. No. 6 Cane Fert. per acre.
35.		Streak Cane.
36.		Healthy Cane.
37.		Streak Cane.
38.		Healthy Cane.
39.	4 rows	600 lbs. No. 6 Cane Fert. per acre. Rock replaced by Superphosphate.
40.	4 rows	Control.
41.	4 rows	600 lbs. No. 6 Cane Fert. per acre Land treated with 600 gallons Molasses per acre.
42.	4 rows	600 lbs. No. 6 Cane Fert. per acre containing no Potash.
43.	4 rows	Control.
44.	4 rows	600 lbs. No. 6 Cane Fert. per acre. containing no Nitrogen.
45.	4 rows	600 lbs. No. 6 Cane Fert. per acre. Soil treated with 500 lbs. Silicate of Soda per acre.
46.	4 rows	Control.
47.	4 rows	600 lbs. No. 6 Cane fertiliser per acre, using Superphosphate contg. Magnesium Phosphate.
48.	4 rows	600 lbs. No. 6 Cane fertiliser per acre. Land treated with 5 galls. Microl per acre (Soil Steriliser).

All plots received 1,000 lbs. agricultural lime per acre with the exception of the Plots 35, 36, 37, 38. All the above Plots were planted with Mr. C. J. Rapson's cane 22/11/24 and fertilised when planting, as shown.

Plots 35, 36, 37, 38, were planted with Esperanza cane 27/11/24 after a preliminary dressing of Rock Phosphate and a complete fertiliser was applied 22/1/25.

**HEARTY VOTES OF THANKS.**

Mr. O. J. Johnson (Chairman) then asked the members to pass a vote of thanks to the staff of Kynochs who had so ably assisted in making this such a splendid day in spite of the weather; also to the ladies for the tea and refreshments (hear, hear) and to Mr. Blewett, Mr. Williams, Mr. Storey and Mr. Rapson for the excellent manner in which they had given the information required.

Mr. D. L. Patrick stated that on behalf of all the planters it gave him great pleasure in saying how pleased they had been with their reception at Kynochs and the arrangements which had been made for the day. There had been no limit to the generosity of their hosts, not only on account of their hospitality, but for the way they had entered into the experimental work of Mr. Storey and Mr. Dodds. He thought that they, as a Sugar Association, had taken the credit for a good many of the experiments which had really been ensured by the

**At the Umbogintwini Experimental Plots.—Contd.**

work of Kynochs. They fully appreciated all that had been done to help them in their problems connected with cane.

Mr. Blewett expressed his thanks for the complimentary remarks of the various speakers, and his pleasure that the Sugar Association had honoured

them by spending the first day of their "Sugar Congress" at Umbogintwini.

A hearty vote of thanks to the Chairman (Mr. Johnson) then concluded the proceedings of the day, and the members returned to Durban by special train.

## Second Day's Proceedings.

Thursday, March 26th, 1925.

Chairman of the day: Mr. D. L. Patrick.

For the second day at Mt. Edgecombe the conditions were more propitious. It had rained heavily the greater part of the night, and the fields and roads were very wet and muddy, but the weather remained fine all day. Unfortunately the programme had to be modified, the trip to Umhlanga Rocks having to be abandoned, as well as visits to the more distant parts of the Estate.

On arrival the guests were taken to the factory, where seating accommodation was provided in the newly erected commodious sugar store. After brief

preliminaries Mr. Wm. Campbell delivered his paper on the carbonatation process which was especially interesting to everybody. Mr. Campbell had shorn it of all the technicalities so that it could be followed by the layman in sugar manufacture.

Tea and other refreshments were then served in the same building, after which the guests were taken on a tour of inspection of the factory and were then conveyed in motor cars to the Experimental plots, and afterwards to the Irrigation System, about a mile from the homestead.

## WHY WE ADOPTED THE CARBONATATION PROCESS.

(Paper by W. A. CAMPBELL, Managing Director, Natal Estates, Ltd.)

I wish to take you back, ladies and gentlemen, to the early days when this factory was built by Mr. Alfred Dumat, a most eminent French Engineer, and the father of the present Doctor Dumat.

Alfred Dumat introduced a system of clarification, which though wasteful in steam, was to my mind, the simplest method for securing an even grade of white sugar in a Defecation mill, and strangely enough on my writing Home a few years ago for expert advice on the trouble we had in making

white sugar by defecation, Doctor Schalk-Sommer advocated the method which Mr. Dumat had introduced, with open clarifiers, bac Portals and Taylor filters. This system was altered in 1909/10, when the factory was remodelled.

Mauritius is the Home of the making of defecation white sugar by sulphur, and this process was invented by Doctor Leery as far back as 1868.

Do what we could, and armed with the very best advice to be obtained from England, Mauritius and