the first eight candidates who came out successful at the last "certificate" examination.

The spread of Mauritius Sugarcane in South Canara.

In South Canara, Sugarcane cultivation is mostly confined to river banks along the mouths of rivers and to small islands known as "*Kudurs*" which lie near the mouths of these rivers. All along the coast of the district in Kasaragod, Mangalore, Udipi and Kundapoor Taluks, local sugarcane cultivation has been going on for many years, but there is not much cane cultivation in the interior taluks of Karkal and Uppinangadi. The cultivation, generally speaking is not in the hands of indigenous cultivators of the district such as the Bunts, but it is mostly done by Roman Catholic Christians and Moplahs, the latter cultivators being found only in Kasaragod Taluk. These two classes of people are hardworking and enterprising. It is these that almost monopolise the new industrial crops of the district, such as Tobacco, Sugarcane, Flowers and Fruits. South Canara is very largely a paddy growing district and the indigenous cultivators are mostly engaged in paddy cultivation. Christians and Moplahs are not, however, the original cultivating classes of the district. Such being the case, the fact as to whether sugarcane is an indigenous crop of the district, (for it is an entirely new crop to the neighbouring district of Malabar) and how and when it was introduced into the district are matters of interest. These more enterprising and colonising spirited classes of people have taken this crop from the coast to the plains where excellent crops of cane may now be seen.

There are several varieties of canes grown locally which were grown for many years before the Agricultural Department became interested in the cultivation practices of this tract; these include Namakabbu, Narikabbu, Dasakabbu, Hullukabbu and Rastalikabbu, but Namakabbu and Dasakabbu are the most common. About seven years ago the prospect of sugarcane cultivation in the district was

very gloomy. Many ryots were wont to give up sugarcane cultivation and on enquiry it is found that the following are some of the reasons:— (1) The crops did not pay in proportion to the care bestowed on it. (2) The crop was getting diseased and degenerated. (3) The price of jaggery was falling. (4) The damage done by jackal and other pests was serious. (5) The difficulty of getting fuel for preparing jaggery was great. Those who continued planting sugarcane did so not so much for the profit to be derived from the jaggery obtained as for the sugarcane trash which was largely used for litter in their loose box system of collecting cattle manure; for thatching their cattle sheds and outhouses; and for fuel for boiling their paddy. Each ryot used to cultivate small plots, quarter to half an acre in extent, and would make very little profit by extracting the juice. Along the coast line near the mouths of rivers fuel and litter difficulties are keenly felt.

Officers of the Agricultural Department then toured in the district and attempted to introduce Red Mauritius sugarcane. In the earlier stages of its introduction these officers had to encounter considerable difficulty in gaining the confidence of the ryots and in getting them to appreciate the merits of this variety of cane. The Department was a new one to the ryots and they could not understand its aims and objects and looked upon its efforts with suspicion. Although at the beginning sugarcane setts were supplied free of cost, ryots refused to plant them fearing that the Government had in view the imposition of a new tax. There were instances where for this reason a whole village revolted against a ryot who planted Mauritius sugarcane. It was only by dogged perseverence that the officers concerned eventually won the confidence of the ryots and succeeded in starting a few plots of Mauritius sugarcane in the district. Its cultivation was taken up earlier in Udipi and Kundapoor Taluks than in Mangalore Taluk. In the Mangalore Taluk it was the custom for every cane cultivator to prepare his own jaggery, whereas in Udipi and Kundapoor Taluks at least some of the cultivators sold their crop to professional jaggery makers. These professional jaggery makers were among the first to be induced to purchase iron mills which can

easily crush the hard rinded Mauritius canes. This is one of the reasons why in Udipi and Kundapoor, Mauritius cane spread quickly in earlier years. In Mangalore Taluk ryots found it difficult to mill this cane with their wooden mills; so they had to be induced to purchase iron mills before the spread was appreciable. Ryots were poor, holdings small, the principle of co-operation was foreign to them; so they would naturally think twice before investing in an iron mill which costs from Rs. 70 to 80. At that time such mills were not known to these ryots and their efficiency was very much doubted. Officers of the Department in course of time succeeded in inducing some of these ryots to purchase iron mills. With the spread of iron mills Mauritius cane also began to spread. Heavy corps of Mauritius cane and an efficient mode of extracting juice brought to light another difficulty. The old method of preparing jaggery in small pans over imperfect hearths entailed unnecssary labour and expense. The primitive method commonly employed was inadequate to cope with the large amount of extra juice. Fuel difficulty was keenly felt in these sugarcane localities and it stood in the way of extension of cane cultivation. By using their imperfect hearths and small pans, ryots were wasting much fuel and the cost of fuel was a big item in the preparation of jaggery. It had to be purchased at a high price and brought from long distances. The Department then decided to demonstrate to sugarcane growers the construction of improved furnaces and of big flat bottom iron pans. They were shown that jaggery could be prepared by using sugarcane trash and megass with the aid of only very little additional fuel.

The work of the old fashtioned wooden mill was very imperfect and much juice remained in the megass. The iron mill can extract nearly 20 to 25 per cent more juice than the wooden mill. The improved furnace and big pans effected a considerable reduction in the amount of fuel and labour required for jaggery making and this improvement gave an impetus to the spread of Mauritius cane. Without the least hesitation it can be stated that with an improved furnace and a big pan a ryot can save as much as Rs. 5/- in every candy of jaggery prepared. These improvements brought in immense

profits to the ryot and his attitude soon changed, although in the beginning he presented a stern attitude towards the suggestions of the Department. For the first five years the spread of Mauritius cane seemed to be making slow progress, bnt the energies of the Department were well spent in overcoming the prejudices of the ryot. The work of the Department does not end here, and no pains are spared in teaching the ryot improved methods of planting, manuring, draining, weeding and earthing up his canes; and where the confidence of the ryot has been won, the advice given is readily taken.

South Canara District is peculiarly well suited for sugarcane cultivation. As the district has a very good rainfall, irrigation is necessary only for three or four months during the period of growth. The planting season commences in December and continues up to April in different taluks of the district. Watering is only necessary from the time of planting till the south west monsoon breaks in June; afterwards no irrigation is necessary till harvest. The earlier the planting the better the yield. If the crop establishes itself before the heavy monsoon downpour, it withstands the rain better and gives a very good yield. Mauritius cane is not only replacing the local cane, but also new areas are coming under its cultivation. Paddy cultivators are now appreciating the profits to be derived from sugarcane cultivation and are begianing to cultivate it in their single cropped bettu or majulu lands which have the necessray water facilities. Last year one ryot at Kankanady village planted Mauritius cane in about 10 cents of bettu land and got 2 candies of jaggery which was sold for Rs. 100/-. If it were paddy he would not have realised even Rs. 10/- from the same area. A difference of Rs. 90/- in 10 cents should convince the most conservative of ryots. This year the same ryot has extended his Mauritius cane cultivation to about 40 cents. After realising such a substantial profit, this ryot repeated to me the proverb "that the sweetness of jaggery is not known to all." By that he metaphorically meant that the large profits to be derived from sugarcane cultivation are known only to those who actually cultivate it. Paddy cultivators find it difficult to find work for their permanent labourers during the slack season,

but if sugarcane cultivation is adopted this difficulty can easily be overcome. Where there are no water facilities, it would pay ryots considerably better to invest their money in digging wells near their bettu or majalu lands and grow sugarcane, instead of continually taking up for cultivation unprofitable new lands. Records regarding the area under Mauritius cane for the last 3 years show a steady and rapid spreading of this cane in the district. In 1912—13 it was 84 acres, in 1913—14 it was 194 acres in 1914—15 it was 425 acres and in 1915—16 it might have gone over 600 acres. The total area under cane in the district is a little over 2000 acres of which 600 acres are under Mauritius cane. Not only is the area under Mauritius cane spreading but this is also the case with the total area under cane. Most of the Mauritius cane is found in Mangalore, Udipi and Kundapoor Taluks, but work has just begun in Kasaragod and Uppinangady Taluks and there is every prospect of its spreading in these taluks also. A comparison between the outturn of jaggery per acre as obtained by old methods and as obtained by improved methods is appended.

A. Old method.

The ryot grows local sugarcane; uses the wooden mill; and prepares jaggery in the same wasteful way as did his ancestors.

B. New method.

Another ryot grows Mauritius cane; uses an iron mill; constructs his furnace so as to use as little fuel as possible; and prepares jaggery by the improved methods recommended by the Agricultural Department.

Outturn by the old method.

8 candies of jaggery at Rs. 50/- Rs. 400/-

Outturn by the new method.

15 candies of jaggery at Rs. 50/- Rs. 750/-

There is a difference of Rs. 350 per acre in the gross profit, whereas the additional expenses incurred in adopting improved methods are within the scope of every ryot.

The above yield is from an average crop of Mauritius cane, but good and careful cultivators get 18 to 20 candies per acre thereby

realising at the present high price of jaggery about Rs. 1,000 per acre. There is no crop so profitable as Mauritius sugarcane for South Canara ryots who have the facilities for growing it.

The economical method of jaggery preparing has solved the fuel difficulty which was standing in the way of the extension of cane cultivation in the district. Hard rinded Mauritius cane is well suited to the hilly district of South Canara where jackals are causing much damage to soft rinded local canes. In addition to 600 acres of Mauritius cane which was originally supplied by this Department, grown in the current year, there are over 150 iron mills in the district and the old method of jaggery making is becoming a thing of the past.

The Arecanut Palm in Malabar.

The arecanut or betelnut is the most beautiful of the palms. Its long, straight stem and graceful green leaves are sure to arrest the attention of any passer by. In regard to its utility it is not an unimportant plant. In Malabar the uses to which the palm and its produce are put are many. The trunks of old trees are used as reepers and beams in the construction of houses and sheds. The leaf sheaths are made use of in various ways for making caps which the Malabar coolies wear during day time, for making baskets to bale out water from wells and as ropes in thatching houses with coconut leaves. From the leaf-lets are made brooms. The nut is well known and there is hardly any Indian house where it is not used on ceremonial occasions. It has very valuable medicinal properties.

The palm is distributed all over Malabar but nowhere is it so extensively cultivated as in the red soil tract of the Ponnani Taluq where a total area of 10, 577 acres was recorded in Fasli 1324. The high lying paddy fields and valleys of hills are being converted into areca topes every year and the cultivation is therefore on the increase.

It is propagated by seed. Ripe nuts are gathered from old trees and are kept in shade for a few days before sowing. Seed beds are