The President observed that he had heard of the existence in Egypt of Scientific chambers where the art of adulteration was sytematically carried on.

The Cocoanut and its importance to Malabar.

Malabar has been rightly called The Land of the Cocoanut palm. The most ubiquitous tree in the District, the whole land is studded with it. Her coast is pre eminently the seat of the cocoanut industry in India. She has given it her own name (the word Nalikera by which it is popularly known being derived from the word Kerala), and two of its most important commercial products have been christened in her tongue. Her Copra and Coir have acquired a worldwide reputation, and are much in demand in foreign marts. The commercial importance of cocoanut to Malabar may be gauged from the fact that from the export of this product alone she derives more than a million sterling annually. Even apart from this, its value as an article of domestic use cannot be over estimated. One wonders how much it enters into the daily life of her inhabitants. Life in Malabar would indeed be different without its presence.

It is difficult to say whether the tree is indigenous to the District. According to Alphonso de Candole its most ancient home is the Eastern Archipalego, from whence it was introduced into India about three thousand years ago. It exists in Malabar today only as a domestic plant, fond of human voice and contact; as a forest tree it exists rarely, if at all, though it is said that it is sometimes self sown.

It will give us some idea as to the actual area under cultivation if I say that it will be difficult to find even a single *paramba* in the whole District, except perhaps certain places in South Malabar, without at least one cocoanut tree in it. And the area is every year increasing. Not satisfied with planting *parambas*, the people have taken to converting paddy fields into cocoanut gardens, and clearing

the jungles. North Malabar, Ponnani and Cochin seem to be the places where the tree flourishes most.

I am not however sure that this expansion is not at the cost of good cultivation. Instead of tiring your patience with a dry narration of the details of the methods of cultivation followed in different parts of the country, I think, it will be more profitable if I only point out some of the defects which I have observed in them. These are four in number, namely, indescriminate selection of seeds, inferior quality of the soil, inattention to spacing, and inadequate manuring.

The selection of seednuts is an important matter and should be done with great care. The best way is, to select the trees from which the nuts are to be taken and the rules to go by are :—a mature healthy tree in heavy bearing, nuts of medium size with thin husks, ripe but not dry. The cocoanut does not generally come true to seed, but there is a better chance of gettiing a superior type from a good tree than from taking seeds indiscriminately. But except, perhaps, in the case of well to do cultivators, no attention whatever seems to be paid to any of these principles, the people being mostly content to plant such nuts as they can easily get. The result is, as might be expected, that the trees do not flourish as well as they might otherwise do. I think and hope that the newly opened Government Farms in the West Coast might make themselves really useful by supplying at cheap rates seeds and seedlings of superior quality.

As to the selection of a good site, it is not always possible to obtain lands of superior fertility. In the first place, the amount of suitable land is limited and has mostly been already planted up. Secondly, it is not often possible for various reasons for one to get the particular land he desires. One lamentable result of this unavoidable circumstance is that, in planting no attention is paid to **spasing**, and as many are packed on a given area, as can possibly be. Properly speaking there should be at least a distance of 27 ft. between the plants ; (It is said that the leaves of the trees should not touch each

other), but in the case of the new plantations, the distance is sometimes 15, 10 and even 5 ft. The mistaken impression perhaps prevails that number will make up for quality. This should be dispelled, and the people made to realize that a small number of well and properly planted trees will in the long run bring in more profit than a large number planted without regard to proper spacing.

Another and more serious defect which I may point out is the indifference of the cultivator **in the matter of manuring**. Even the richest soils have only a limited supply of the elements of fertility and if some of their constituants are constantly removed without anything being done to replace the lost elements, barrenness must ultimately ensue. Yet this is what is being done in Malabar at the present day in the case of the cocoanut cultivalion i. e. to take all that nature gives and return nothing. Some experienced planters have expressed it as their opinion that the cocoanut plant is one that requires but little manuring. If the people therefore make but little effort on their part, the yield of the tree may be trebled or even quadrupled. It is extreme folly on the part of the cultivator to hesitate to spend an anna or two per tree every year when he can get one or two rupees from it in return.

Of late we bave been seeing advertisements in the newspapers regarding cocoanut fertilizers. I have not known any instance in Malabar in which they have been tried, and unless one gives them a fair and satisfactory trial, it will not be possible to say anything definite as to their worth. It may however be suggested that it will do well for cocoanut planters to try them. I may also say that the work of trials and experiments is one that may be properly taken up by the Government, and I hope that it will occupy the serious attention of the West Coast Government Farms. It may be stated in passing that I understand that in this Coimbatore Central Farm and in the Taliparamba Farm, fish manuring has been tried with very good results.

Another point which the Agricultural Department has to tackle is about the enemies of the cocoanut palm, such as the wild pigs,

white ants, palm beetles, porcupines, rats etc. The damage done by these pests is enormous; sometimes whole plantation are said to have been destroyed by them. It is urgently necessary that some effective remedies should soon be discovered.

The uses of the cocoanut tree are too numerous to be described and I will content myself with saying a few words on **Copra Oil,** and **Coir,** the three products of the cocoanut which are of Commercial importance. Copra is the dried meat or albumen of the cocoanut. A large quantity of it is at present annually exported from Malabar for convertion into oil. If this could be prevented and the manufacture carried on in the country itself, besides the great benefit of finding employment for a large number of people, the profits that now go to enrich the foreigner will go into the pockets of the people themselves. The local process of manufacturing the oil has also to be improved by replacing the present country mills by modern mills, as the former are wasteful, leaving as they do a large quantity of oil unextracted in the punac. If co-operation be resorted to, I think there will not be any difficulty in producing large quantity of oil on improved methods.

The cocoanut oil exported from Malabar is reported to be much superior to that produced from other places. This is said to be due to the superior whiteness of the Malabar copra. Locally the oil is used chiefly for anointing the hair, for lighting and in seasoning curries. Modern science has however discovered many more uses for it. Dr. Denner, a German Chemist, it was, who found that it makes a very satisfactory article in place of butter, which will keep from 15 to 20 days. The oil has also been largerly used in recent years for makiug soap and candles. Within the last decade Chemical Science has produced from it a series of food products, which have revolutionised the industry. The convertion of cocoanut oil into dietetic eompounds was begun in 1900, and today the world's demand for Vegitoline, Cocoline and other food products derived from the cocoauut is very great.

The next article of even greater commercial importance is the Coir. European writers who have described it, are in the habit of pla-

cing the coir from Malabar in the first rank. The name is derived from the Malayalam word Kayaru (rope) through the Portuguese corruption Coiro. Both the fibre and the rope were first exported to Europe about the middle of the 16th century, but it was not until the great international exhibition of 1851 that the coir rope and coir matting attained a commercial importance in England.

Locality seems to exercise a considerable influence over the quality of the fibre; soil, climate and proximity to the sea being important factors. But there are other, considerations also. Certain varieties of cocoanut are better suited than others for the production of coir. The husks of immature nuts yield a better quality of fibre.

The process of extracting fibre may be thus briefly described. The husks are first removed from the shell and are then soaked in salt or brackish water for a period ranging from six months to one year. The next operation is to beat out the husks and rub them between the hands until all the interstitial cellular substance is removed from the fibrous portion. When quite clean, it is arranged into a loose roving preparatory to being twisted which is done between the palms of the hands in an ingenious way.

The fibre was at first used only for stuffing mattresses and cushions, but its application has now been greatly enlarged in foreign countries and its value greatly enhanced by mechanical processes. A variety of articles of great utility and elegance of workmanship are now manufactured from of it.

At present it is only in certain localities in Malabar that the fibre making industry is carried on. In a very large number of cases the husks are either burnt as fuel or simply thrown away. If these also could be made use of, I am sure that the amount of fibre exported from the country may be doubled or even trebled.

From what I have attempted to state above, I hope you will be sufficiently impressed with the vast importance of the cocoanut to the people of Malabar. Next to paddy it is the chief source of their income. But it is unfair to estimate its importance in pounds, shillings and

pence alone. In the whole vegetable kingdom it is difficult to find a tree which so lavishly blesses men as this angel among trees. And how greateful it is for any the least kindness done to it. For the very little care and attention that may be bestowed upon it, how profusely it pays us back.

There is vast scope for a much greater development of its cultivation in Malabar. It is none too soon that the Government has begun to interest itself in this matter. I feel sure that as a result a fresh, impetus will be given to it. I may also humbly suggest that the Government should not rest content with attempting to improve the methods of cultivating it. I think that it will be even more useful if they will attempt the pioneer work of introducing and popularising the modern developments in the manufacture of its products. It is gratifying that the Govt. oil expert has already made a begining in the manufacturing of soap out of coconut oil. I am sure that the Government will make similar attempts in respect of the other branches of the cocoanut industry and this will be but in keeping with their present industrial policy.

Vengail K. Krishnan Nayanar.

Discussion :—

Mr. Campbell of Messrs. Pierce Leslie & Co., said, that the cocoanut was a tree of which every part was useful and this reminded him of the pig in the preparation of meat. Though the trade in this nut is a very important one so far as Malabar and the West coast were concerned, yet its share in the world's market sank into comparative insignificance when placed against such formidable rivals as The West Indies or Zanzibar. The value of the copra alone had doubled within the last five years in the London Market. He believed that the yield of cocoanuts could be enhanced by as much as 300 or 400% by better cultivation and manuring.

Mr. Govinda Kidavu said that, in his recent enquiries into the cultivation of the cocoanut in the West coast, along with Mr. Sampson, he came across a two-acre plantation which yielded as many as 10,000 nuts per year. This plantation was situated in the interior, about 23

miles from the coast and the trees themselves were spaced 30 to 40'. He was of opinion, that the nature of the soil and elevation were important factors to consider, in the selection of a site for a cocoanut plantation. Thanks to the present system of tenancy in Malabar, the trees were often planted very close and this ultimately tended to lower the yield of nuts a good deal. About 20 years ago, the nuts were selling at Rs. 120 per 1,000. In the year 1913 they were selling at Rs. 60 per 1000. The prices now prevailing are Rs. 30 per 1,000 and this phenomenal drop was due to the elimination from the market of Germany and Austria, which, previous to the War, had been consuming as much as 70 per cent. of the Malabar trade. He deplored the now-steadily growing practice in the West Coast of opening new cocoanut plantations without any consideration, of the suitability, or otherwise, of the site in question, and desired to strike a note of warning at this stage, for, if persisted in, a condition of things may arise in Malabar, not unlike that, which followed the extension of groundnut cultivation in the district of South Arcot. Rao Sahib A. Rama Rao of Manganallur said that he owned a piece of saline land in the lankas of Godavary consisting of black clay to a depth of 3' and enquired if any one could advise him as to what measares to adopt to raise a cocoanut plantation therein. Mr. K Cherian Jacob said that in his own plantations, 6 to 7 thousand nuts per year were a frequent yield. In reply to the previous speaker he said that the best method of raising a cocoanut plantation under saline conditions was to heap up the earth and plant the young seedlings on these earth mounds. Mr. Unnikrishna Menon said that he had heard that the Rhinoceros bettle attacking young coconut trees could be easily kept out by smearing tar on the crown taking care to leave out the young shoots.

At the end there was an interesting discussion on the normal age of a cocoanut tree, on the number of leaves which a tree produces every year and the method by which the age of an old tree could be estimated; but the opinions expressed were rather divergent.