

In the Bulletin before us 20 pages are taken up by descriptions of the varieties of bananas and plantains that are found in different countries, but we have not time nor space for so formidable an enumeration, nor would it serve the purpose we have in view. What we desire, in the interest of Ceylon and its people is to direct attention to several important purposes to which the fruit has not yet been applied here, and to the great extension of which its present known uses might, with great advantage, be applied. Ceylon is not over abundantly supplied with either quantity or variety of food; and it may safely be said that, both as an additional supply, and as an agreeable variety of wholesome food, the bananas and plantains offer the greatest scope. In this connection it may be remarked that both the growing plant, and the mature fruit, are singularly free from attacks of either insect or fungoid pest. We cannot remember during our sojourn of nearly half a century in the Island, that we ever saw any kind of insect in the fruit, nor have we ever noticed the plant subject to such attack. In the Bulletin before us, we find it remarked that "*Taking into account the immense areas over which these plants have been cultivated, and the lengthened period during which they have been subject to the control of man, it is remarkable that no choronic disease has manifested itself among them except in one or two localities.*"

Of the *economic uses* of the fruit to which we would first direct the attention of our readers because it is the one to which the least attention has as yet been given in Ceylon, is its wholesomeness in the sense of being curative, or medicinal.

Mr. H. M. Stanley, in the narrative of his journey through darkest Africa, says:—

When between the Albert Edward Nyanza and the Albert Nyanza (Vol. ii., pp. 239-240):—"For the first time we discovered that the Awamba, whose territory we were now in, understood the art of drying bananas over wooden gratings, for the purpose of making flour. We had often wondered, during our life in the forest region, that the natives did not appear to have discovered what invaluable, nourishing, and easily digestible food they possessed in the plantain and banana. All banana lands—Cuba, Brazil, West Indies—seem to me to have been specially remiss on this point. If only the virtues of the flour were publicly known it is not to be doubted but it would be largely consumed in Europe. For infants, persons of delicate digestion, dyspeptics, and those suffering from temporary derangements of the stomach, the flour, properly prepared, would be of universal demand. During my two attacks of gastritis, a light gruel of this, mixed with milk, was the only matter that could be digested."

There is probably no more obstinate disorder than that of chronic gastritis, yet, during two attacks to which Mr. Stanley alludes, on that most trying journey, he found in gruel of plantain meal and milk a cure. He naturally recommends it for infants, persons of delicate digestion, dyspeptics, and those suffering from temporary derangements of the stomach, and he says that if the virtues of the flour were publicly known, it is not to be doubted but it would be *largely consumed in Europe*.

Similar testimony is to be found in other countries. In the Malay Archipelago "man begins with plantains," as the meal, Rumph says, "is used for making pap for new-born infants." Dr. Shier reporting on the food products of British Guiana, says the flour of plantains is largely employed as the food of infants and invalids." Again in the public hospital in Kingston, Jamaica, the use of plantain meal, as distinct from banana meal, is reported as follows:—

"Some years ago plantain meal—as distinct from banana meal—was in use at the public hospital in Kingston, and was considered a wholesome and nutritious food. It formed an excellent diet for patients suffering from diarrhoea, dysentery, and allied ailments. This is confirmed by experience in India. 'Flour made out of green plantain dried in the sun is used in the form of *chappatis* (unleavened cakes) in certain parts of Tirhoot in cases of dyspepsia with troublesome flatulence and acidity. I have known,' says a medical officer, 'one case in which it agreed remarkably well whenever a diet of plainsago and water brought on a severe attack of colic. The *chappatis* are taken dry with a little salt.' There is always present in plantain meal a certain small percentage of tannin."

In the same extract we read that "in Tirhoot (India) flour made out of green plantains, dried in the sun, is used in the form of *chappatis* in cases of dyspepsia, with troublesome flatulence and acidity." The fact that when even plain sago brought on a severe attack of colic, the chappate agreed remarkably well, shows its extraordinary virtue.

Such a variety of testimony leaves no doubt of the fact, that in Ceylon we possess, in the bananas and plantains, so abundant in supply, so cheap in price and so delicious in flavour, not only a most remarkably wholesome food, but a singularly effective cure for indigestion, and a specially suitable diet for infants and invalids. —*Ceylon Independent*.

DAIRY ITEMS.

Very much fat is lost in butter-milk in the process of churning, which, with greater care, might be saved; and a study of this subject, recently made at the Iowa Experiment Station in America, and published as a bulletin by the U.S.A. Agricultural Department, suggests that this loss might be greatly minimised, if not entirely prevented, by testing the acidity of the cream. The work, so far as it has gone, shows that the acidity of the cream bears a decided relation to the loss of fat in churning, and that a test of this kind for acidity cannot but be of considerable help to the butter-maker, even though he has had years of experience. The experiments are merely of a preliminary nature, and are being continued, so that they do not admit of drawing anything but general conclusions. They showed, however, that until cream reached a certain acidity, loss of fat in butter-milk to a greater or less extent took place. The other two factors which have an influence are the temperature of the cream and its amount in the churn; for when this latter is more than half full, the results are not satisfactory.

"Hot water for cows" is the maxim of the French dairy farmers in the department of Finistère. They claim to have proved by experiments that when cows drink hot water they yield one-third more milk than when they are refreshed with cold water only. Caution must, of course, be observed in adopting the new system. Avaricious dairymen must beware of scalding the throats of their cows in their haste to avail themselves of this discovery, which is vouched for by our consul at Brest. The proportion, we are told, are half a pail of boiling water and half a pail of cold.

A method has been recently described by which butter adulteration can be detected by means of a thermometer and some sulphuric acid. It appears that when strong sulphuric acid is mixed with pure butter the temperature of the mixture rises to about 79 deg. Fahr. If, on the other hand, margarine is mixed with sulphuric acid the temperature of the mixture rises to 88 deg. Fahr., or from that up to 104 deg. Fahr. If, then, on adding common sulphuric acid to a sample of butter the temperature rises to, say, 84 deg. Fahr., there is reason to suspect adulteration. If the thermometer marks 86 deg. Fahr., one part of margarine has been added to every 13 parts of butter; if it goes up to 90 deg. Fahr., the mixture half consists of butter and half of margarine.

Professor J. Forster, of Amsterdam, finds that to make sure of killing the tubercle bacteria in milk by means of heat (Pasteurisation) it must be exposed in one of the following ways:—131 deg. Fahr. for four hours, 140 deg. Fahr. for one hour, 149 deg. Fahr. for fifteen minutes, 158 deg. Fahr. for ten minutes, 176 deg. Fahr. for five minutes, 194 deg. Fahr. for two minutes, 203 deg. Fahr. for one minute.

A correspondent to the *Scottish Farmer* writes:—No one has as yet mentioned Schering's Formalin Solution. I claim from practical experience that it is the best article of the kind in the market. A quantity of it was procured for me from the Sorn Dairy Supply, Glasgow—the sole agents for Scotland—and I find it of the greatest value in all kinds of weather. During the recent thunderstorms I never had a drop of sour milk. That is something to boast of. Formalin solution is a clear liquid, and it neither affects the taste, character, or flavour of the milk or cream.

REPORT OF THE SUPERINTENDENT OF THE SCHOOL OF AGRICULTURE FOR 1893.

I have the honour to submit the following Report on the working of the Government Dairy during 1893:—

The dairy herd consists of 47 cows, of which 21 were imported from the Bombay Presidency, and the remaining 26 were procured locally.

Among the locally-procured animals are five pure Sinhalese cattle, the rest being natives of South India, and commonly known as "Coast cows." The Bombay animals are a well-selected lot, and they may all be said to have turned out satisfactory milkers, except one which has gone completely

off her milk owing to injuries sustained during the voyage to Ceylon. The "Coast cows" do not of course come up to the Bombay cattle as milkers, though a few of them are exceptionally good specimens. The Sinhalese animals are kept chiefly with a view to see what can be done with our indigenous breed under proper management and with good feeding and housing.

I think that the unsatisfactory cows should be sold, the amount realized by such sale, together with the balance left after completely stocking the dairy, being invested in the purchase of animals of a better type. It will be remembered that the first batch of 45 cows was estimated to cost R4,500, at R100 each. They have, however, averaged a fraction below the estimated cost. The average dairy yield of the whole herd for the first half year, during the milking periods of the cows, was eight pints nearly.

The average of the best cows (Sindh animals) during their period of milking was for the first half year $12\frac{1}{2}$ pints per day.

The ordinary charge for the milk supplied was at the rate of 18 cents a bottle. In the case of the Leper Asylum, a distance of 26 miles to and from the dairy, the cost of transport raised the price of milk supplied to that institution to 20 cents a bottle.

During the month of June the dairy stock consisted mainly of the Bombay cattle which arrived on the 30th of May. Only a few of these had calved on the journey to Ceylon, and a large number of non-milking animals had to be fed and tended for various periods at considerable expense, with no return. This could not have been avoided, as the cattle from Bombay were, as far as possible, timed to calve within a month of their arrival. The greater part of the milk produced during June was taken by a milk contractor, and the rest was disposed of in the shape of butter. The opportunity afforded of making use of the "separator" and manufacturing the cream into butter—at a time when there was no regular demand from the hospitals to meet—was after all a welcome one.

Though it was expected that the dairy would be in a position to undertake the milk supply of all the medical institutions in Colombo from the 1st of July, the idea had eventually to be abandoned owing to the insufficiency of the output of milk to meet the large demand. And this is attributable to two causes: (1) some of the cows which were calculated to come into milk by 1st July were late in calving; (2) (and this the chief cause) only a few animals could be purchased during June, owing, to some extent, to a scarcity of milk cattle as the result of a severe drought in South India, but also and chiefly owing to a clique having been formed among the Tamil cattle-dealers, who tried their utmost to "swamp" the Government Dairy by refusing to have any dealings with it.

In this crisis the Principal Civil Medical Officer very kindly came to our assistance, requiring us to meet only the demand of the General Hospital for 126 bottles of milk a day during July. This gave us more time to look about. In the course of that month further purchases were successfully made after much manoeuvring, the prices paid being slightly higher than the ordinary rates. Thus the milk supply was gradually increased during July, the surplus milk (which was alwa