

Rich milkmen and contractors, who of course are very few in this city at present and who start the business with some capital, do not generally come under this description, as they have got some stalls to keep their cows in and have men in the neighbouring villages to look after their dry cows and calves on contract system. It is to be regretted that even these contractors have very limited knowledge with regard to animal husbandry.

Local breed.—Though they share the same fate as Ongoles they are very few in number, i.e. about 20 per cent and are not very good milkers in general. Even if some cows and calves are lost among this class through the carelessness of these people, the public will not have so much reason for grievance as they have at present in losing Ongoles. It is because of this, an attempt is made to illustrate briefly the sufferings of the Ongole cattle at the hands of the milkmen and to make them understand that the public are losing a valuable breed or rather the best breed in Southern India through their carelessness, and also to make them realise that if they are to carry on the same trade for some years more, not only the public but they too will have to suffer in the long run.

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PLANTAIN VARIETIES IN THE CIRCARS

AN ALPHABETICAL LIST OF VARIETIES FOUND IN GODAVARI,
VIZAGAPATAM AND GANJAM DISTRICTS

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| Serial No. | Name of variety | District | Class | Remarks |
|------------|-----------------------------|--------------------------|-------|--|
| 1 | <i>Amrithapani</i> ... | Godavari ... | B | For description <i>vide</i> notes appended—item 7. |
| 2 | <i>Do.</i> ... | Vizagapatam. | B | A name given to a variety similar to the above but with a lighter and drier flesh resembling that of the <i>Virupakshapazam</i> of the Palnis; grown on the hills. |
| 3 | <i>Billa mokiri</i> ... | Do. ... | D | A name sometimes given to No. 7 below. |
| 4 | <i>Bontha</i> ... | All the three districts. | A | A common name for Nos. 5, 6, 19 and 20. Same as <i>Monthan</i> of the south. |
| 5 | <i>Budida bontha.</i> | Do. ... | A | For description <i>vide</i> notes appended—item 2. |
| 6 | <i>Budida bontha bathis</i> | Do. ... | A | For description <i>vide</i> notes appended—item 4. |
| 7 | <i>Chakkarakeli</i> ... | Godavari ... | D | For description, <i>vide</i> notes appended—item 5. |
| 8 | <i>Ginjala arati</i> ... | Do. and Vizagapatam. | G | A seeded variety cultivated for curiosity. |

| Serial No. | Name of variety | District | Class | Remarks |
|------------|------------------------------|---------------------------|-------|--|
| 9 | Guinea ... | Vizagapatam and Ganjam. | C | Same as No. 11 below; but fruit generally smaller on account of the different conditions under which it is cultivated. |
| 10 | <i>Jalakonda mokiri</i> | Do. ... | B | A variety of No. 1, cultivated in the hills and superior. |
| 11 | <i>Karpurachak-karakeli</i> | Godavari ... | C | For description, <i>vide</i> notes appended—item 6. Same as <i>Poovan</i> of the South. |
| 12 | <i>Karpurakeli</i> ... | Vizagapatam. | E | For description <i>vide</i> notes appended—item 10. |
| 13 | <i>Kommu arati</i> ... | All the three districts. | D | For description <i>vide</i> notes appended—item 8. |
| 14 | <i>Keesa</i> ... | Godavari ... | B | An inferior variety resembling 1, but of smaller fruit. |
| 15 | <i>Nallamokiri</i> ... | Vizagapatam. | E | Same as No. 12. |
| 16 | <i>Nendran</i> ... | Do. ... | A | Introduced from Malabar. |
| 17 | <i>Neesu</i> ... | Godavari ... | B | Same as No. 14. |
| 18 | <i>Mokiri</i> ... | Vizagapatam and Ganjam. | B | Same as No. 1, but the name is used as a common one for many others with some suitable prefix. |
| 19 | <i>Paccha bontha.</i> | All the three districts. | A | For description <i>vide</i> notes appended—item 1. |
| 20 | <i>Paccha bontha bathis.</i> | Do. ... | A | For description <i>vide</i> notes appended—item 3. Same as <i>Monthan</i> of the Nilgris. |
| 21 | <i>Paccha mokiri.</i> | Vizagapatam. | D | A name sometimes given to No. 7. |
| 22 | <i>Palakala bontha.</i> | Godavari ... | A | Same as <i>Nadan</i> of the South. |
| 23 | <i>Pedda mokiri</i> ... | Vizagapatam. | B | Same as No. 1 above. |
| 24 | <i>Potti mokiri</i> ... | Godavari ... | B | A dwarfish variety resembling No. 1 in general characters with hands and fruit set close as in No. 11. |
| 25 | <i>Sapota arati</i> ... | Godavari ... | A | Same as <i>Pey-vazai</i> of the South. |
| 26 | <i>Shahaja</i> ... | Vizagapatam. | D | A name sometimes given to No. 7. |
| 27 | <i>Suddha</i> | Do. ... | B | A variety of No. 1, but inferior. |
| 28 | <i>Tella chakkarakeli.</i> | Godavari and Vizagapatam. | D | Same as No. 7. |
| 29 | <i>Tella mokiri</i> ... | Vizagapatam. | B | Same as No. 1. |

| Serial No. | Name of variety | District | Class | Remarks |
|------------|-----------------------------|--------------|-------|---|
| 30 | <i>Vamanachak-karakeli.</i> | Godavari ... | F | Same as No. 31 below. |
| 31 | <i>Vamanakeli</i> ... | Do. ... | F | For description <i>vide</i> notes appended—item No. 11. Same as <i>Kullavalai</i> of the Nilgris. |
| 32 | <i>Vasana arati</i> ... | Ganjam ... | C | Same as No. 11 above. |
| 33 | <i>Yenuga arati</i> ... | Vizagapatam. | F | A stout dwarfish variety similar to No. 31, but a bit taller. |
| 34 | <i>Yerra arati</i> ... | Do. ... | E | The red plantain of the hills. For description <i>vide</i> notes appended—item No. 9. |
| 35 | <i>Yerra chakkarakeli.</i> | Do. ... | E | Same as No. 34. |
| 36 | <i>Yerra mokiri</i> ... | Do. ... | E | Do. |

Note.—The class noted in column 4 is intended to give a general idea of the nature of the variety. An explanation of the different classes is noted below:—

Class A—The Bontha type; Item 1 of the note appended.

„ B—The Amrithapani type; item 7 of the note appended.

„ C—The Karpurachakkarakeli type; item 6 of the note appended.

„ D—The Chakkarakeli type; item 5 of the note appended.

„ E—The Red plantain type; item 9 of the note appended.

„ F—The Mauritius plantain type; item 11 of the note appended.

„ G—The wild plantain type; The presence of pepper-like seed in the flesh of the fruit is the chief characteristic of this type.

NOTES ON SOME VARIETIES OF PLANTAIN.

(STUDIED ON THE SAMALKOT AGRICULTURAL RESEARCH STATION)

1. *Paccha bontha*.—Mostly used for cooking; grown all over the country; trunk 8 to 12 ft. high; leaf sheaths slightly ashy; leaves 5-7 ft. long, 1½-2½ ft. wide; lower side slightly waxy; throws bunches in 7½-8½ months under average conditions; inflorescence large; bracts red with an ashy coating; 4 to 6 hands in the bunch; 40 to 70 fruits weighing 20-30 lbs.; fruit gets fit for cooking in 2 to 2½ months after the bunch is thrown; ripens off in another 1 to 1½ months; very hardy; withstands drought as well as excess of water better than other varieties; price per bunch As. 10 to Re. 1.

2. *Budilla bontha*.—Also mostly used for cooking; resembles the above in all respects except that the unripe fruit has an ashy green colour; fruit considered superior to the green for curry or for ripening off; price per bunch As. 10 to Re. 1.

3. *Paccha bontha bathis*.—Used mostly for curry; tree resembles that of the first variety, but slightly taller; bunch much longer; 8–12 hands (sometimes 20–30) closely packed; 90–125 fruits (sometimes up to 200 or more); weight of bunch 30–45 lbs. Fruit less angled than the first two; tip stouter, not so good in taste when cooked; also inferior when ripened off; price per bunch about As. 12 to Re. 1-2.

4. *Budida bontha bathis*.—Similar to the above except that the fruit is ashy green.

5. *Chakkarakeli*.—The famous table variety of the Godavary district, highly esteemed and costlier than other table varieties; also considered healthier; trunk 7–10 ft. high; the plant can be easily recognised by the pink edges which hang down from the lower portion of the petiole; bunches in $7\frac{1}{2}$ – $8\frac{1}{2}$ months; fruit ripens off in $2\frac{1}{2}$ –3 months; inflorescence long, tapering and pointed; bracts lighter red than in No. 1; not so ashy; bunch has 4–6 hands ordinarily; and 40–70 fruits; weighs 15–25 lbs.; skin thick; remains green at the base and tip even when the fruit is fairly ripe, while the rest is bright yellow; pulp also slightly pinkish yellow; soft and sweet; tree delicate; cannot withstand heat, drought or water-logging. Price per bunch As. 14 to Re. 1-8-0.

6. *Karpura chakkarakeli* or Guinea.—The most popular of the table varieties; largely grown all over the presidency; trunk grows slightly taller than the above; midrib purple coloured both inside and outside especially when the leaf is still young; bunches slightly later than Chakkarakeli; inflorescence shorter; bracts dull red; bunch has 8–12 hands; sometimes up to 20; fruits 100 to 250; sometimes up to 500; weight per bunch 25–35, sometimes up to 90 lbs.; skin yellow when ripe; pulp pinkish; slightly acid and with a good flavour; stands water-logging better than Chakkarakeli; also stands ratooning better. Price per bunch As. 14 to Rs. 1-8-0.

7. *Amruthapani* or *Mokiri*.—A hardy table variety largely grown dry or under occasional irrigation on the perennial system; gardens standing in the same place for over 50 years seen in the west Godavari district; trunk grows 8–12 ft. high; tree resembles Bontha, but lower edges of the petiole pinkish; can be distinguished from Chakkarakeli by the fact that the edges do not generally bend down as in the Chakkarakeli. Bunching about a month later than in Karpurachakkarakeli; 5–8 hands and 60–90 fruits per bunch; weight 20–30 lbs.; skin light yellow when ripe; pulp white, soft and sweet; fruit should be ripened off to a greater degree than in Karpurachakkarakeli to bring on good taste. Bunches ordinarily cut for export before ripe; not therefore tasteful; fruit often infected with red fungoid patches which form hard lumps in the soft pulp; price per bunch about As. 12 to Re. 1.

8. *Kommu arati*.—A long-fruited variety; tree resembles that of Chakkarakeli in general but the leaves are narrow and stand more erect; bunches earlier than Chakkarakeli; inflorescence resembles that of Chakkarakeli; 5–7 hands; 70–90 fruits; fruits long and thin; skin generally remains greenish yellow even after ripening; pulp yellowish and has a peculiar flavour of its own; tree hardier than Chakkarakeli; grown in the hills of Ganjam and Vizagapatam; price per bunch As. 10 to Re. 1.

9. *Yerrachakkarakeli or Yerramokiri*.—Unripe fruit red, turning yellowish red when ripe; trunk tall (9 to 15 ft.) and bunches very late in the plains; grows well only in moist valleys rich in organic matter; veins of leaves, midribs and sheaths all markedly reddish in colour; inflorescence resembles that of Chakkarakeli; 5-7 hands on the hills under favourable conditions; 50-80 fruits; weight 20-30 lbs. per bunch; pulp yellowish and has a flavour of its own; usually sells at a fancy price of about half to one anna per fruit.

10. *Karpurakeli or Nallamokiri*.—A green sort from red plantain; the red colour is absent from the veins, midrib and sheaths as well as from the fruit; otherwise similar to red plantain.

11. *Vamanakeli or Mauritius plantain*.—A dwarf variety known as Paccha vazai in Madras; trunk only 3-5 ft. high; leaves broad and short but thick; bunches earlier than Chakkarakeli; but the bunch takes about 4 months to ripen off; inflorescence resembles that of Chakkarakeli; 6-9 hands; 90-150 fruits; weight 25-35 lbs.; fruit long and thicker than Kommurati; bunch closely packed; skin remains green even when ripe; pulp slightly yellowish and has a fairly good flavour; does not keep well and hence not popular.

PROBABLE ORIGIN OF THE SOILS OF CENTRAL FARM, COIMBATORE

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Preliminary Considerations.—It is known that soils are broadly classified as (i) sedentary or *in situ* soils and (ii) drift or transported soils. The sedentary soils are distinguished by (1) the absence of any clear contact between the underlying bed and the top soil and (2) the existence of the fragments of the parent weathered rock mingled with the soil itself, as can be detected by the naked eye. A third test may be found in the close resemblance of the sandy fraction of the soil with the mineral constituents of the subjacent weathered rock, when examined under a petrological microscope.

In the case of transported soils a clear distinct contact is seen between the soil and the subjacent geological formation. This contact by itself should in most cases be sufficient to decide the nature of the soil. It is needless to say that the other two conditions mentioned for sedentary soils are absent in this case. In addition all the circumstances which prove an *unconformity* between two geological sedimentary beds (e.g. change of fossils, denuded surface, change in the angle of dip) go to show the transported nature of the soil.

Transported soils are classified according to the agent of transport, viz. wind, glaciers, rivers and rain. The next question arises as to where we can expect to find sedentary soils and where to find transported soils; for instance *Æolian* or wind-transported soils are found in parts of Rajputana and the Punjab. Glacier deposits may be expected only in the sub-Himalayan zone as they are not common in India as in Europe and North