

STUDIES ON INDIAN BANANAS

I. A Descriptive Study of Twenty-four Varieties*

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THE specific and varietal relations as well as the classification of the banana, an important cultivated agricultural crop, is ill-defined and in some cases contradictory (Linnaeus, 1753; Baker, 1893; Schumann, 1900; Jacob, 1934 and others). The chief reason for the existing confusion in the taxonomy of the cultivated bananas appears to be the lack of proper descriptive study of the numerous varieties, both cultivated and wild. The importance of a detailed descriptive study is stressed by Teodoro (1915) and he is supported by Backer (1924) and Cheesman (1934). In his excellent discourse on the banana varietal problem, Cheesman (1934) discusses the numerous defects in the existing nomenclature and classification and stresses the importance of varietal descriptions suitably illustrated as a preliminary necessity for the study of the various varieties extant in each region before the existing chaos in nomenclature and classification can be removed.

Published work on South Indian bananas have not adequately satisfied the detailed study necessary for ready spotting out of well-known varieties of bananas (Jogiraju, 1931; Jacob, 1934, 1942 *a*, 1942 *b*). In this paper, therefore, an attempt has been made to thoroughly go into the question of the description of twenty-four well-known varieties of bananas grown in this province. This attempt has necessarily to be followed by other investigations in the lines undertaken here, which, in the opinion of the author, will put the banana classification on practical lines.

The materials for the study were obtained from the Banana Experimental Area and the College Orchards of the Agricultural Research Institute at Coimbatore. The brief descriptions presented in this paper are the sum effect of the bulky data collected during two years of investigation on a purely descriptive systematic work.

DESCRIPTION OF VARIETIES

The names applied to the varieties in this paper are those standardised by Jacob (1934). To make the descriptions complete a few of the important

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synonyms of each variety are given, the synonyms referred to being extracts from *South Indian Bananas*, by Jacob (1934).

1. *Kullan*

Plant.—The plant is stout and dwarf attaining a height of about seven feet; trunk upto 25 inches in girth at base, light green in colour, tapers very little from the base to the crown; outer sheaths light green with dark spots at the junction of the leaf-sheath and petiole. Leaf-blades about 5 feet long and 24 inches wide at the widest part, green, glaucous on the under-surface, texture tough or leathery. Lamina base equal, deeply cordate. Petiole rather short and stout, margins winged and the channel wide; shape of leaf elliptic. Total number of leaves produced being about 29, and suckers 5. Duration medium (about 15 months).

Bunch.—Peduncle or stem thick, tomentose, almost at right angles to the pseudo-stem. Hands and fruits compact; fruits at right angles to the main axis; number of hands 8 to 12; the bunch may weigh from 25 to 30 lb.; the bottommost hand with about 20 fruits and the rest with 12 to 14 fingers or fruits arranged in two rows. The sterile axis is clothed with persistent male flowers and dried bracts.

Fruit.—Small, 3 to 4 inches long, about 4.5 inches in girth at the middle, plumpy, irregularly five sided and the angle ridges rather indistinct at full maturity; base broad, apex blunt; skin thin with little spongy fibre on the inner surface, leathery and bright yellow when fully ripened; pulp slightly tending to be yellow, juicy and sweet. Keeping quality of fruit good. This serves as a dual purpose variety (Plate V, Fig. 6; Text-Fig. 11).

Synonyms.—Rasalu or Rasa arati of Peddapur (East Godavari Dist.), Theer vazhai of Erode; Kuzhi vazhai of Udamalpet; Enugu arati of Jeypore.

2. *Nendrapadathi*

Plant.—Tall, attaining a height of about 10 feet; trunk about 24 inches in girth at base, tapers from base to crown; colour of pseudo-stem light green. Leaf blade about 7 feet long and 22 to 24 inches wide, green, leathery. Lamina base unequal, acuminate. Petiole long, margins pink coloured and slightly apart; total number of leaves 27; suckers 8 per plant. Duration medium (about 17 months).

Bunch.—Peduncle or stem tomentose, pendulous. Hands and fruits compact; fruits slightly curved; number of hands 8 to 10 and with about 14 fingers or fruits per hand. Bunch weighs about 40 lb. Male flowers persistent clothing the sterile axis.

Fruit.—Of medium size, 6 to 8 inches long, about 5.5 inches in girth at the middle, tapers to a distinct apex; five sided and the ridges prominent. Skin thick, leathery, lemon coloured, easily peels off from the pulp; pulp firm, cream coloured, core not fairly developed, flavour mildly pleasant, taste sweet with little acidity, seeds absent. Keeping quality fairly good. This is a dual purpose variety (Plate V, Fig. 8; Text-Fig. 5).

Synonyms.—Nendran vanna of Trichur Farm; Kuthiravalan of Pulamanthol (Malabar).

3. *Nana Nendran*

Plant.—The plant attains a height of about 10 feet, trunk about 22 inches in girth at base. Pseudostem light green with pinkish tinge in colour; tapers from base to crown. Leaf green, about 7 feet long and about 24 inches in width at the widest part; the margins of the petiole and the mid-rib of leaf coloured pink; petiole margins not wide apart but overlapping. Duration early maturing (about 14 months).

Bunch.—Drooping, stem thick but not clothed with hairs. Bunch not compact; number of hands 4 or 5 with about 7 to 9 long fruits per hand, fruit at almost right angles to the main axis. Bunch weighs about 15 lb. Male flowers and bracts persistent (Plate IV, Fig. 7).

Fruit.—Long, cylindrical, 11 to 12 inches in length, about 5 inches in girth, almost straight, irregularly five sided, ridges disappearing at full maturity; base narrowing; apex short but distinct; skin thick and leathery, with little spongy fibre on the inner surface; skin tough, golden yellow coloured, peeling off with difficulty from the pulp; pulp firm, slightly pink in colour, core fairly conspicuous, flavour mildly pleasant, taste medium sweet, quality medium as a dessert fruit; keeping quality good (Text-Fig. 13).

Synonyms.—Nendra vazha of Calicut; Nendra bale of Moodbidri (South Kanara); Thiruvodan of Tellicherry; Chengazhikodan of Trichur Farm; Ethakka of Alwaye.

4. *Attu Nendran*

Plant.—Tall, height about 11 feet, girth of trunk at base about 27 inches. Other characters same as Nana Nendran; number of leaves about 36, suckers 14. Duration late maturing (about 19 months).

Bunch.—Drooping, compact with 7 to 8 hands with long fruits, curved upwards. Medium bunch weighs about 30 lb. Male flowers and bracts persistent clothing the axis (Plate V, Fig. 1).

Fruit.—Long, slightly curved, pedicel curved, length about 9 inches, girth at middle about 5.5 inches; irregularly five sided, angle ridges distinct, sides slightly inflated, base narrowing, apex tapering with a prominent long pointed beak; skin thick with little spongy fibre on the inner surface, tough, golden yellow coloured when fully ripened, peels off with some difficulty from the pulp. Pulp firm, pinkish, core conspicuous, flavour mild, tastes as Nana Nendran. Good for culinary purpose (Text-Fig. 1).

Synonyms.—Nendran of Tellicherry; Nedu Nendran of Trichur Farm; Yethan of Sendamarai.

5. *Myndoli*

Plant.—Description same as that of Attu Nendran; leaves 34; suckers 16. Duration late maturing (about 19 months).

Bunch.—Same as Attu Nendran, but number of hands more than that of Attu Nendran; hands about 10, compact, fruits long and curved. Medium bunch weighs about 50 lb.

Fruit.—Same as Attu Nendran for all details.

6. *Moongil*

Plant.—Description same as that of Attu Nendran and Myndoli. Number of leaves about 35; total number of suckers about 17. Duration very late maturing (about 17 months).

Bunch.—Semi-erect, peduncle green, glabrous and thick; number of hands one or two, each with about 15 fruits; fruits curved showing the appearance of curved horns, and the axis ends blindly. Staminate flowers are not at all produced. Medium bunch weighs about 20 lb. (Plate V, Fig. 9).

Fruit.—Large, about 13 inches long, about 6.5 inches in girth at middle, cylindrical, curved; pedicel long and slightly twisted, irregularly five-sided angle ridges distinct, sides some flat and others slightly inflated; base narrowing, apex tapering with a prominent long pointed beak; skin medium thick with little spongy fibre on the inner surface, tough, golden yellow coloured, peeling off with some difficulty from the pulp; pulp firm, pink in colour, core fairly distinct, flavour mildly pleasant, taste medium sweet, quality medium as a dessert fruit, keeping quality good. Good for culinary purpose (Text-Fig. 8).

Synonyms.—Otta Mukil of Trichur Farm, Cochin State.

7. *Pacha Nadan*

Plant.—Attains a height of about 10 feet, about 25 inches in girth at base; pseudo-stem light green in colour, tapers from base to crown; leaf blades about 6.5 feet long and about 27 inches wide at the widest portion, green in colour, glaucous below, texture leathery, lamina base equal; petiole margins wide apart. Shape of leaf oblong; total number of leaves about 28, suckers about 9 per plant. Duration medium (about 15 months).

Bunch.—Drooping; peduncle or stem green, thick and glabrous; hands and fruits compact; fruits almost at right angles to the main axis. Number of hands 6 to 7 with about 12 fruits per hand. Medium bunch weighs about 25 lb. Sterile axis naked, *i.e.*, the staminate flowers and bracts are deciduous, and the axis ends in a pendulous 'heart' (Plate IV, Fig. 9).

Fruit.—About 5.5 inches long; 4.5 inches in girth at the middle, almost straight and uniform in cross-section, irregularly 5-angled, angle ridges prominent, sides rather flat; apex blunt and not prominent. Skin greenish yellow, peeling off easily from the pulp, with a large amount of spongy fibre on the inner surface; pulp firm, rather white in colour, core not conspicuous, flavour mild, taste rather saltish, quality medium to fair keeping quality poor. The fruit is used both when green and ripe (Text-Fig. 12).

Synonyms.—Eradan and Thodan of Perintalmanna (Malabar); Kadali of Mayavaram; Kali of Tanjore; Pacha Ladan of Trichy; Pachai Vazhai and Kali of Pollachi; Kal Kadali of Srivilliputtur; Pacha Bale of Hospet; Pacha arati of Cumbum (Kurnool District).

8. *Kali*

Plant.—Description the same as that of Pacha Nadan. Duration early (about 13 months).

Bunch.—Almost same as that of Pacha Nadan; the bunch weighs about 20 lb. Sterile axis pendulous and naked.

Fruit.—Medium to small, about 4.5 inches long and about 4.5 inches in girth, spindle shaped, almost straight, stout and plump in the middle, somewhat 5-angled, angle ridges disappearing on full ripening, sides slightly inflated, base broad, tapering to a short pedicel; apex broad, blunt with a short and thick beak; skin thick, leathery to tough with a considerable amount of spongy fibre on the inner surface, lemon yellow coloured when fully ripened, peeling off easily from the pulp; pulp firm, cream coloured, core slightly conspicuous; taste sweet but little acidic, flavour pleasant; quality fair to good (Plate V, Fig. 4; Text-Fig. 4).

Synonyms.—Vannan of Kongad; Padathi of Alwaye; Mannan of Mannantoddy; Vellai Chingan of Sankarankoil; Pacha nadan of Thisayanvilai; Kuppamannan of Nileshtar; Valiyathodan of Nilambur; Mundilapadan of Nilambur; Kali Thodan of Nilambur; Kai Vazhai, Pakki, Padu Vazhai and Vella Padan of Gudalur (Nilgiris).

9. *Kunnan*

Plant.—Pseudo-stem slender as compared with the other varieties. Height of plant about 9 feet, girth at base about 20 inches; colour of trunk light green. Leaf narrow, 7 feet long and 22 inches wide; lamina thin and soft; leaves erect, petioles slender and long; lamina base equal; petiole margins touching. Duration medium (about 16 months).

Bunch.—Small, compact and pendulous; hands and fruits compact, slightly turned upwards. Number of hands about 10 with about 12 fingers to a hand. Medium bunch weighs about 20 lb. Sterile axis naked and pendulous (Plate IV, Fig. 2).

Fruit.—Small, length about 4.5 inches, and about 4.5 inches in girth at middle, slightly ridged, and the angle ridges absent when fully ripened. Pedicel distinct; apex prominent and pointed. Skin, green and shiny, thin with a slight amount of spongy fibre on the inner surface, bright yellow when ripe, and easily peels off from the pulp; pulp cream-coloured, firm, when fully ripened, sweet with an aroma. Keeping quality good. This is a dual purpose variety (Text-Fig. 6).

Synonyms.—Jirike Bale of Kallamandkur (S. Kanara); Tirunolli Kadali of Kasaragod (S. Kanara); Adukku Poovan of Nileshtar; Adukkann of Tellicherry; Madras arati of Piridi near Bobbili; Vellai Kadali of Sankarankoil; Nar Kadali of Sendamaram; Sanna Akulu chettu of Nidubrolu (Guntur District).

10. *Adakka Kunnan*

Plant.—Same as that of *Kunnan*.

Bunch.—Compact with a large number of fruits; number of hands 9 to 10, with 12 fruits per hand. Medium bunch weighs about 20 lb. Sterile axis mostly naked (in some cases a few clusters of dried male flowers were observed to be persistent on the axis) and pendulous (Plate IV, Fig. 3).

Fruit.—Small, about 4 inches long and about 5.5 inches in girth at the middle; spindle-shaped, plumpy at the middle, ridges absent; base broad, apex prominent with a pointed beak; skin green with an ashy bloom, thin, turns dull yellow when completely ripe, peels off from the pulp with some

difficulty; pulp firm, cream coloured, core distinct, sweet, keeping quality fairly good. Green fruits used for culinary purpose (flour made out of this is considered an ideal infant food) (Text-Fig. 7).

Synonyms.—Chara Kunnan of Kongad (Malabar); Veneetu Kunnan of Perinthalmanna; Mutti Kunnan of Perinthalmanna (Malabar); Mundi Kunnan, Vennir Kunnan of Pulamanthol; Cheru Kunnan of Trichur Farm.

11. *Karim Kadali*

Plant.—Tall, about 11 feet high; 22 inches in girth at base; pseudo-stem or trunk deep purple in colour with greenish tinge, tapers from base to crown. Leaf about 7 feet long and 27 inches wide at the widest part of the lamina; lamina green, mid-rib purple coloured both on the inner and outer surface, base unequal, left side longer than the right. Petiole long, margins wide apart, left margin winged and deep purple in colour; shape of leaf oblong; total number of leaves 29; total number of suckers 18. Duration medium (about 14 months).

Bunch.—Large, compact with 7 hands, each with 14 fruits, fruits all curved; peduncle stout, brownish green, tomentose. Sterile axis slightly purple, long, ending in a heart-shaped flower bud, bracts purple in colour. Medium bunch weighs about 25 lb. (Plate IV, Fig. 1).

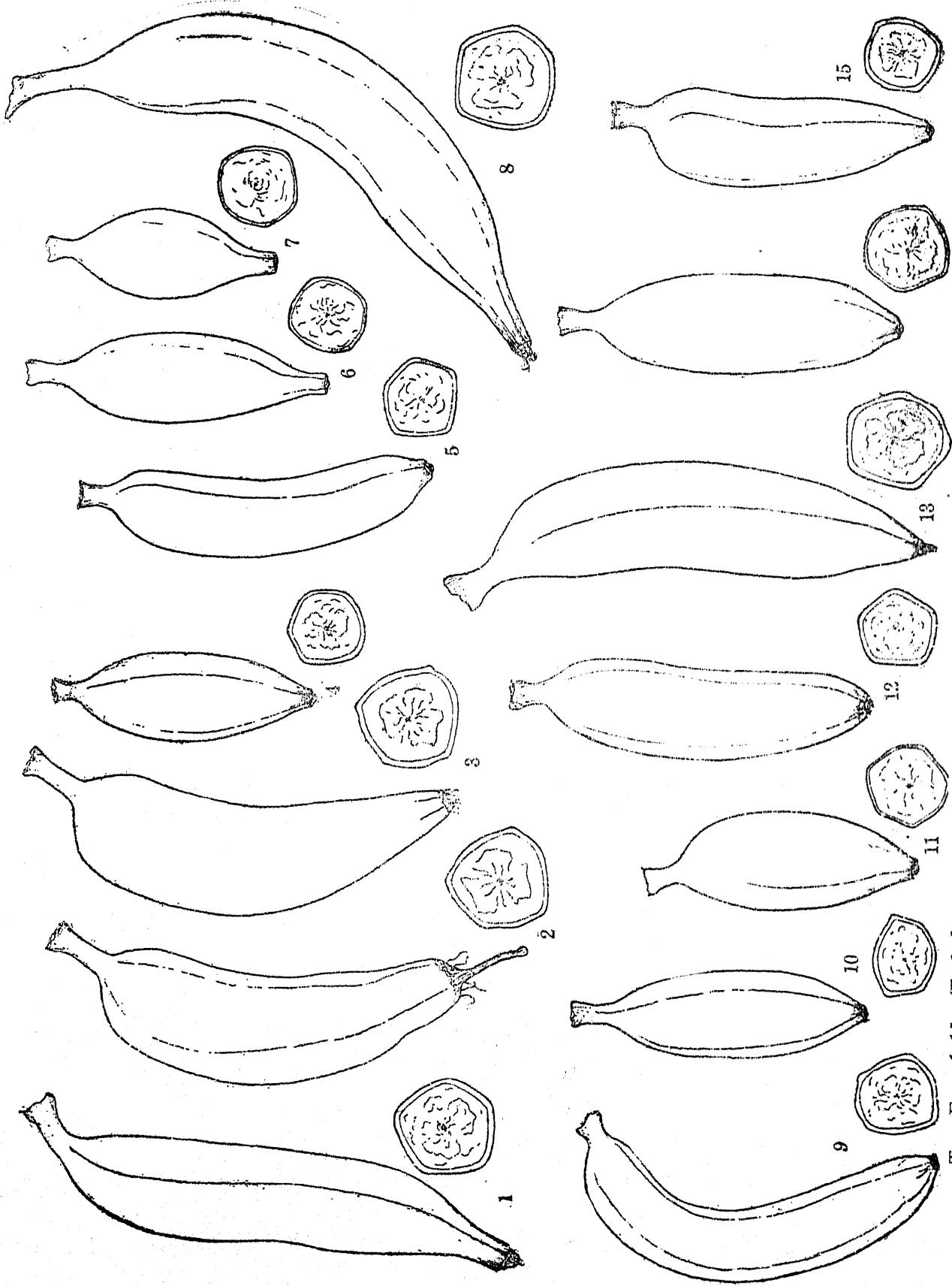
Fruit.—Long about 10 inches, about 5 inches in girth at the middle, curved, angle ridges five and indistinct at full maturity; base broad, pedicel short and indistinct; apex blunt, and beak rather absent; skin thick, yellow when ripe and easily peels off from the pulp; pulp firm, pale yellow coloured, sweet; quality good. This is a dual purpose variety (Text-Fig. 9).

Synonyms.—Karim Kadali of Alwaye and Trichur Farm; Irachikai of Kurumathur (Malabar); Irachiketti Kai, Chodari of Kuttuparamba; Vettan of Mannantoddy; Kari Vazha of Nilambur; Anaikomban of Kulithalai.

12. *Pey Ladan*

Plant.—Stout and tall; height about 12 feet; girth at base about 28 inches; pseudo-stem dark green, with slight pinkish tinge at base. Leaf long, length of lamina about 7 feet and width about 24.5 inches; base of lamina equal and cordate; petiole long, margins slightly pink coloured and touching. Shape of leaf oblong; total number of leaves about 40; total number of suckers about 22. Duration late maturing (about 19 months).

Bunch.—Large, compact with about 8 hands, each with about 14 fruits. Sterile axis stout and naked. A normal bunch weighs about 20 lb.



TEXT-Figs. 1-15. (Each figure represents a sketch of an individual fruit of the variety in question $\frac{1}{3}$ natural size)

- FIG. 1. Attu Nerdran, FIG. 2. Monthan, FIG. 3. Nalla Bontha, FIG. 4. Kali, FIG. 5. Nendrapadathi, FIG. 6. Kunnian,
- FIG. 7. Adakka Kunnian, FIG. 8. Moongil, FIG. 9. Karim Kadali, FIG. 10. Enna Benian, FIG. 11. Kullari, FIG. 12. Pacha Nadan,
- FIG. 13. Nana Nerdran, FIG. 14. Ney Mannan or Yenneettu Mannan, FIG. 15. Kuri Bontha.

Fruit.—Short, flat sided, angle ridges fairly prominent; base broad and apex slightly tapering to a blunt beak, pedicel short; skin green with slight bloom and dull yellow when fully ripe, thick and leathery with a considerable amount of spongy fibre on the inner surface, peels off easily from the pulp; pulp rather white in colour, texture loose, core conspicuous, taste sourish sweet, quality not good as a dessert fruit.

Synonyms.—Mada Vazhai of Erode; Pey Monthan, Pey Valai of Trichy; Peyan of Coimbatore; Mayil Vazhai of Kuttanandal (Madura).

13. *Mayil Vazhai*

Plant.—Height about 9 feet; girth at base about 23 inches; pseudo-stem stout and dark green in colour; leaf long, about 6 feet and about 24 inches wide at the broadest portion of the lamina; lamina base equal, cordate. Petiole long and stout; petiole margins pink in colour, and almost touching each other. Shape of leaf oblong; total number of leaves per plant about 27, total number of suckers produced per plant about 17. Duration medium (about 15 months).

Bunch.—Small, hands and fruits not compact; number of hands 5 to 7, each hand with about 12 fruits; peduncle green and stout and smooth. Sterile axis naked; male flowers deciduous; a medium bunch weighs about 20 lb. (Plate IV, Fig. 8).

Fruit.—Small, angle ridges being prominent; base broad and ends in a short pedicel; apex blunt with an indistinct beak; skin green with a slight ashy bloom, dull yellow when ripe, thick and tough with a considerable amount of spongy fibre on the inner surface, easily peels off from the pulp; pulp white and soft, sweet but little acidic; quality medium as a dessert fruit; occasionally a few seeds are met with at the apical end—seeds small and of the shape and size of a black pepper.

14. *Ney Mannan*

Plant.—Tall, about 10 feet high, girth at base about 26 inches; pseudo-stem dark green in colour with an ashy bloom when young, leaf long, lamina about 6.5 feet long, width about 25 inches; lamina base equal, cordate; petiole long, margins pink in colour and almost touching each other; shape of leaf oblong; total number of leaves about 31, total number of suckers about 16. Duration medium (about 15 months).

Bunch.—Large, very compact with about 10 hands and about 145 fruits; peduncle green, glabrous and stout; sterile axis naked; male flowers deciduous; a normal bunch weighs about 45 lb.

Fruit.—Small to medium, 4.6 inches long, 4.3 inches in girth; ovate oblong, almost straight, plump at base and tapering at apex, irregularly five sided, angle ridges fairly distinct, sides flat to slightly inflated, base broad tapering abruptly to a medium angled pedicel; apex broadly tapering with a short thick beak; skin rather thick, leathery to tough with considerable amount of spongy fibre on the inner surface, peels off easily from the pulp, orange yellow in colour when ripe and dark green when unripe; pulp white in colour, firm, core inconspicuous, flavour pleasant, taste sweet, quality medium to good. A few seeds are occasionally met with; the green unripe fruits are generally used for culinary purposes (Plate V, Fig. 7; Text-Fig. 14).

Synonyms.—Thiyyan Mannan, Iyyan Mannan of Tellicherry; Mala Vannan, Kallu Vannan of Calicut; Ney Vannan of Kongad; Malamundi of Nilambur; Patinharan of Perinthalmanna; Nattu Vazhai of Pannakadu; Vayal Vazhai of Sankarankoil; Peyan of Nanguneri; Kari Bale of Ramapuram; Javari of Hospet; Bhynsi mouze of Kurnool, etc.

15. *Venneettu Mannan*

Plant.—Description same as for Ney Mannan.

Bunch.—Description same as that of Ney Mannan (Plate V, Fig. 2).

Fruit.—Same as that of Ney Mannan except that it is ashy coated when unripe, and dull yellow when ripe; green fruit used as a vegetable (Plate V, Fig. 10).

Synonyms.—Sambal Vazhai of Malli; Peyan of Palamcottah; Boothi Bale of Ramapuram; Boothi Javari of Kampli; Boodithi of Kurnool, etc.

16. *Monthan*

Plant.—Tall, about 12 feet high, girth about 27 inches at base; pseudo-stem light green in colour; leaves large, lamina length about 6.5 feet, width at the broadest portion about 26 inches, lamina base equal and cordate; petiole long and stout, margins touching; total number of leaves about 32; total number of suckers about 16. Duration medium (about 15 months).

Bunch.—Not compact, with about 5 to 7 hands, each hand with about 10 fruits; sterile axis naked, male flowers deciduous; peduncle green and glabrous; a medium bunch weighs about 25 lb. (Plate IV, Fig. 4).

Fruit.—Large, about 10 inches long and 6 inches in girth at the middle; slightly curved, fairly plump, irregularly five-sided, angle ridges fairly prominent, sides flat or slightly inflated; base broad, tapering to a long, angled pedicel; apex broad with a prominent knob-shaped beak; skin thick, tough

to leathery with a considerable amount of spongy fibre on the inner surface, peels off with some difficulty from the pulp; skin straw yellow in colour when ripe; pulp firm, cream coloured, core fairly conspicuous, taste medium sweet, pasty when quite ripe, and quality poor as fresh fruit. Generally used for culinary purposes (Text-Fig. 2).

Synonyms.—Silandi of Moodbidri; Banga Bale of Udipi; Manga Bale of Kundapur; Aunda Bale of Mangalore; Manga Kai of Kasaragode; Manga Vazha of Nileshwar; Sodari of Kurumathur; Thezhuthani of Telli-cherry; Thenali of Calicut; Ponthan of Kongad; Ponnai Kaya of Perintal-manna; Ponnai of Nilambur; Chetti Kaya of Ponnai; Nathangi Monthan of Erode; Erode Monthan of Kulithalai; Kondai Monthan, Yendra Monthan of Trichy; Trichinopoly Monthan of Negapatam; Nattu Monthan of Tenkasi; Thoppul Vazhai of Thangachimatam; Kalyanakai of Hospet; Bontha of Kalava.

17. *Pacha Montha Bathees*

Plant.—Same as that of Monthan.

Bunch.—Very compact hands and fruits; number of hands more than five; sterile axis short and naked; medium bunch weighs about 40 lb.

Fruit.—Of varying sizes; the fruit of the first four or five hands are big in size as in Monthan, but the rest are short. Fairly plump, irregularly five sided, angle ridges fairly prominent, sides flat, base broad, tapering to a long angled pedicel; apex broad and blunt as in the Monthan. Other characters same as the Monthan.

Synonyms.—Batheesa of Gopalpur; Nalla Batheesa of Piridi; Pacha Batheesa of Palteru; Pacha Bontha Batheesa of Vizag.

18. *Sambrani Monthan*

Plant.—Same as in Monthan.

Bunch.—Same as in Monthan.

Fruit.—Same as Monthan, but the unripe fruit is ashy coated; the ripe fruit is dull yellow in colour.

Synonyms.—Bonya Kilandi of Udipi; Vennettu Manga of Nileshwar; Venneettan Thezhuthani of Mannantoddy; Boothan Kaya of Gudalur.

19. *Buditha Montha Bathees*

Plant.—Description same as that of Pacha Montha Bathees;

Bunch.—Same as Pacha Montha Bathees (Plate IV, Fig. 5).

Fruit.—Almost the same as Pacha Montha Bathees; skin of unripe fruit ashy coated, while that of a ripe fruit is dull yellow in colour.

Synonyms.—Thella Batheesa of Piridi; Boodithi Batheesa of Palteru.

20. *Nalla Bontha*

Plant.—Description same as that of Monthan.

Bunch.—Description same as that of Monthan (Plate V, Fig. 3).

Fruit.—Almost same as that of Monthan excepting that the apex in this case is not knob-shaped as in the Monthan, but it is sharp and pointed to an extent (Text-Fig. 3).

Synonyms.—Pacha Bontha of Gopalpur; Bontha of Panchadarla; Monthan of Tenkasi; Manattu Monthan of Sankarankoil; Palakolu Bontha of Jagarlamudi.

21. *Nalla Bontha Bathees*

Plant.—Description same as that of Nalla Bontha.

Bunch.—Description same as that of Pacha Montha Bathees.

Fruit.—Same as ordinary Monthan, excepting that the apex of the fruit is pointed and not knob-shaped.

Synonyms.—Isika Bontha, Pichika Bontha of Jagarlamudi.

22. *Thella Bontha*

Plant.—Almost the same as Nalla Bontha in all characters.

Bunch.—The same as in the Nalla Bontha.

Fruit.—Same as Nalla Bontha but the skin is ashy coated; when ripe the skin is dull yellow in colour.

Synonyms.—Boodithi Bontha of Gopalpur and Vizagpatam.

23. *Kuri Bontha*

Plant.—Height about 8·5 feet; girth at base about 25 inches; pseudo-stem dark green in colour; leaf-blade about 7 feet long and about 27 inches wide; petiole long, margins almost touching; total number of leaves about 33, and suckers about 16.

Bunch.—Not compact, small, hands about 8 with about 14 fruits or fingers per hand; medium bunch weighs about 20 lb.; sterile axis naked (Plate IV, Fig. 6).

Fruit.—Small, about 4·5 inches long and about 4·5 inches in girth at the middle, spindle shaped, almost straight, plump in the middle, nearly

five angled, angle ridges distinct, sides inflated; base tapering to a short pedicel; apex broadly pointed with a short and thick beak; skin thick, lemon coloured, leathery, peeling easily from the pulp; pulp slightly tough, almost white in colour, core indistinct, taste sourish sweet, slightly acidic, quality medium; seeds occasionally met with (Text-Fig. 15).

24. *Enna Benian*

Plant.—Height about 8.5 feet, girth at base about 24 inches; pseudo-stem light green in colour, with the margins slightly coloured pink and with a slight ashy bloom; length of lamina about 6 feet, width about 25 inches; petiole long, margins pink coloured and close together; lamina base equal and cordate; total number of leaves about 27, suckers about 23. Duration medium (about 15 months).

Bunch.—Small, not compact. Hands about six, each with about 14 fingers or fruits; medium bunch weighs about 15 lb.; sterile axis naked and long.

Fruit.—Medium sized, about 5 inches long and about 4.5 inches in girth at middle, spindle shaped, almost straight, somewhat irregularly five sided, sides flat, narrowing to base and tapering to apex with a short and thick beak; skin thick, leathery to tough, orange yellow coloured, with a considerable amount of spongy fibre on the inner surface of the skin; skin peels off easily from the pulp; pulp soft to firm, yellow coloured; core distinct, flavour mild, slightly acidic, quality medium as dessert fruit (Plate V, Fig. 5; Text-Fig. 10).

DISCUSSION

The chaos caused by adopting different approaches for the study of nomenclature and classification of bananas has evoked criticism from a number of workers, notably by Cheesman (1934). The most important defect lies in the nomenclature of the varieties and this has been well emphasized by him in his excellent treatise on the banana varietal problem. The distribution of these edible bananas is so wide that the same variety is known by many names in the different regions where they are grown, hence the difficulty in standardising the varietal names becomes boundless. In India, Jacob (1934) has done considerable work to standardise the varietal names and has given a list of vernacular names to be used for the varieties, which really limits the application of his key to restricted areas of South India. Furthermore his descriptions of the varieties are by no means complete.

Linnaeus classified the different varieties under two species, namely, *Musa sapientum* and *Musa paradisiaca*, taking into consideration the deci-

duous or the persistent nature of the male flowers. Linnaeus's classification as pointed out by Cheesman (1934) cannot hold good in respect to some of the varieties at least, because the character of the persistent or the deciduous nature of the male (functionally staminate) flowers has been shown by the above study to be a very variable character. For instance, a few plants of the variety Adakka Kunnan described in this paper were observed to have some clusters of the dried male flowers persistent on the axis. Again provision is not made to group those types which do not at all produce any staminate flowers. For instance, the variety Moongil described herein does not at all produce any male or staminate flowers and the fruiting axis ends blindly after the formation of one or two hands of fruits.

Confusion exists regarding the nomenclature of the species. Baker (1893) places '*paradisiaca*' as a sub-species of *Musa sapientum*, while Schumann (1900) considers '*sapientum*' as a sub-species of *Musa paradisiaca*, and the Kew Bulletin of 1894 lists '*paradisiaca*' as a variety of *Musa sapientum*. The widely grown dwarf banana is termed *Musa Cavendishii* Lamb., the dwarfness having been taken into consideration. The dwarfness happens to be so distinct in appearance that no confusion had hitherto arisen, but it has been shown by Cheesman (1933) that at least one tall banana variety appeared so closely related to the dwarf that if a specific name is to be used for the one it should also be applied to the other. And since the dwarf is linked by intergrading forms with more than one tall banana variety, the possibilities of confusion if *Musa Cavendishii* is to be admitted as a possible specific name, are boundless. Jacob (1934) classifies all the cultivated varieties of bananas even including the dwarf banana (*Musa Cavendishii*) under one species which he also names *Musa paradisiaca*.

It has already been stressed that no classification of the edible bananas is possible at all until much study has been devoted to the diagnosis of the varieties (Teodoro, 1915; Backer, 1924; Cheesman, 1934). The present study, though restricted to only a few varieties, has clearly brought out the futility of certain systems of classification and the importance of a descriptive study. The extant literature on banana descriptions is generally restricted to the study of the characters which are not always important from the viewpoint of the grower. Such features are inevitable when botanical considerations outweigh those of practical utility, and when living specimens are not invariably studied. In South India the leaf production in banana is a very important economic character while the production of suckers is of equal importance to the grower. The difference between the varieties is so great that it is a surprise that these characters are ignored in banana descriptions.

An important feature of the present study is to accord due importance to such economic characters.

SUMMARY

1. Twenty-four varieties of bananas grown in South India, the fruit of which is either used for culinary purpose or both as a vegetable and a fruit, were chosen for the study.

2. The plants were studied from the time of planting the sucker in the field upto the time of the harvest of the fruit bunch, and a description embodying certain important characters is given for each variety.

3. The experimental data presented clearly indicates that in the classification of bananas it is of paramount importance to take the total effect of all the important characters, namely, the different plant characters such as the stem, leaf and fruit, with accurately drawn illustrations rather than depend on a minor character like the persistent or deciduous nature of the male flowers in the bunches.

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EXPLANATION OF PLATES

PLATE IV

(This plate shows the fruiting bunches of nine varieties of bananas.)

- FIG. 1. *Karim Kadali*—Note the naked axis after the fruiting region.
- FIG. 2. *Kunnan*.
- FIG. 3. *Adakka Kunnan*—Note the compact nature of the bunch.
- FIG. 4. *Monthan*.
- FIG. 5. *Buditha Montha Bathees*—Note the compact nature of the bunch and also the numerous hands of fruits.
- FIG. 6. *Kuri Bontha*.
- FIG. 7. *Nana Nendran*—Note the few number of hands and the persistent and dried bracts.
- FIG. 8. *Mayil Vazhai*.
- FIG. 9. *Pacha Nadan*.

PLATE V

(This plate shows the fruiting bunches of five varieties and a hand in each of five varieties.)

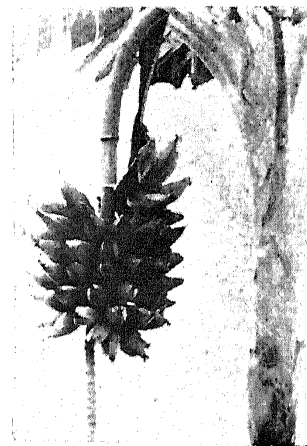
- FIG. 1. *Attu Nendran*—Note the compact bunch and the persistent bracts and flowers.
- FIG. 2. *Venneettu Mannan*—Note the ashy bloom on the fruit.
- FIG. 3. *Nalla Bontha*.
- FIG. 4. A hand of *Kali*.
- FIG. 5. A hand of *Enna Benian*.
- FIG. 6. *Kullan*—Note the persistent bracts after the fruiting hands.
- FIG. 7. A hand of *Ney Mannan*.
- FIG. 8. A hand of *Nendrapadathi*.
- FIG. 9. *Moongil*—Note the long and curved fruits, and the very short axis ending blindly without any flower or bract.
- Fig. 10. A hand of *Venneettu Mannan*—Note the ashy bloom on the fruit.



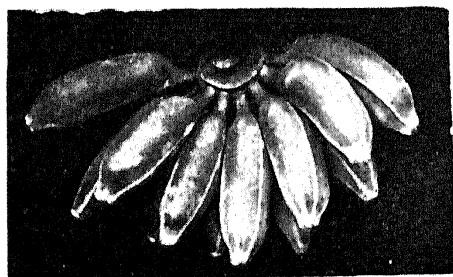
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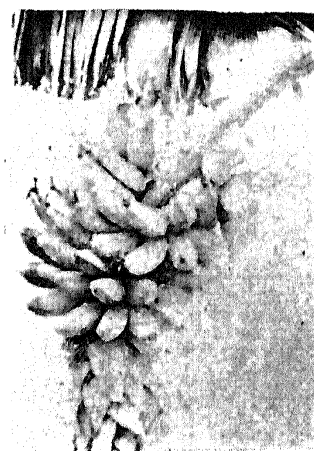
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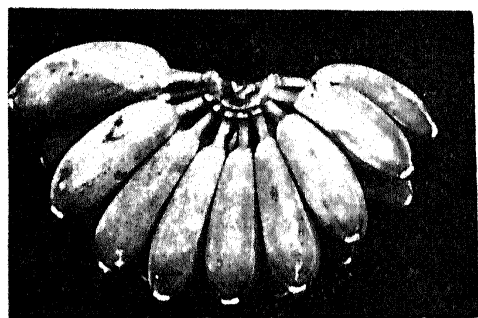
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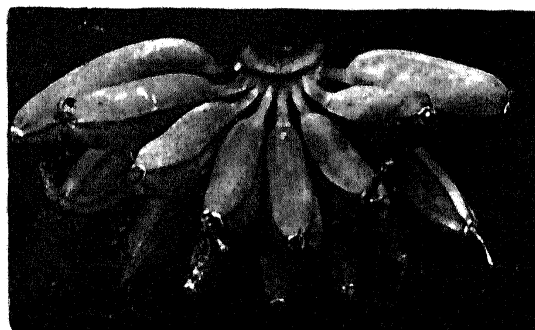
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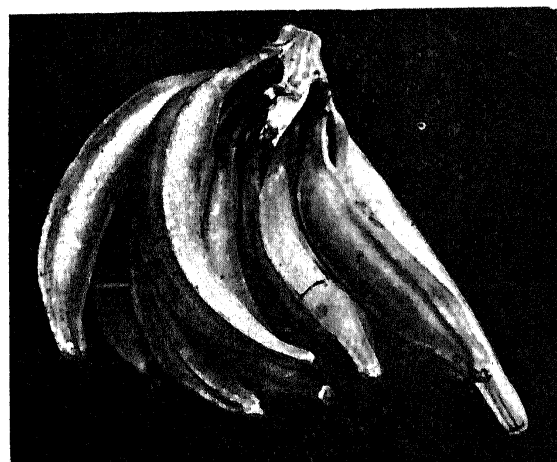
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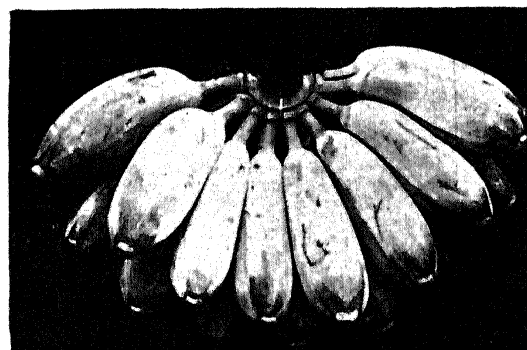
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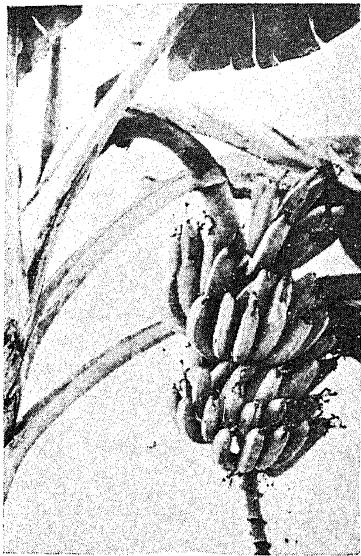
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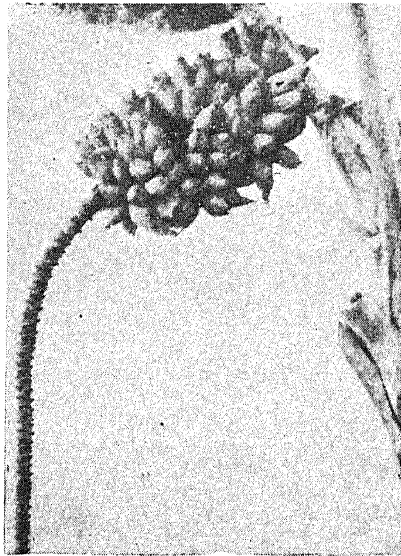
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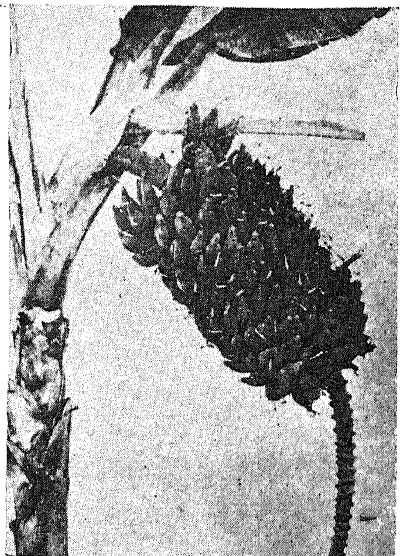
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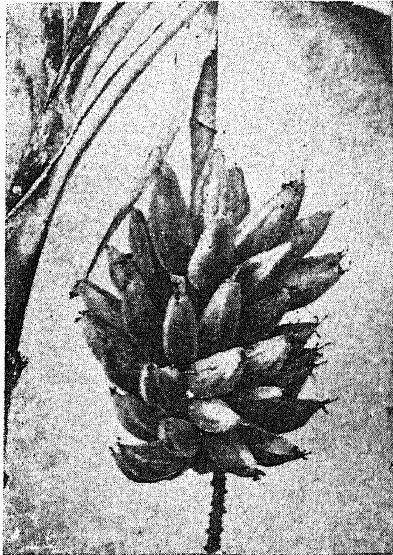
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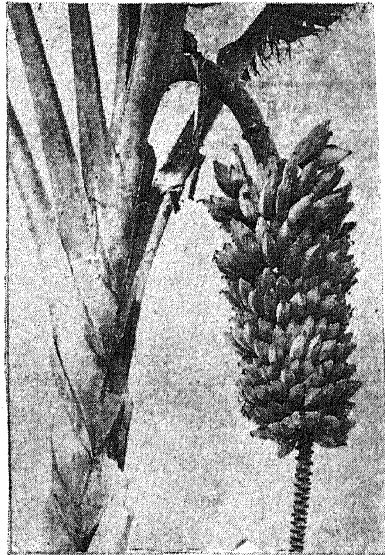
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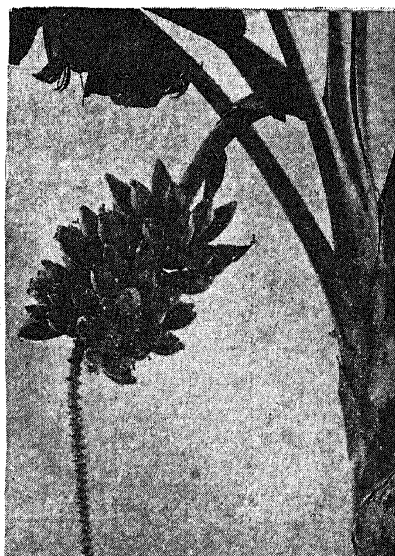
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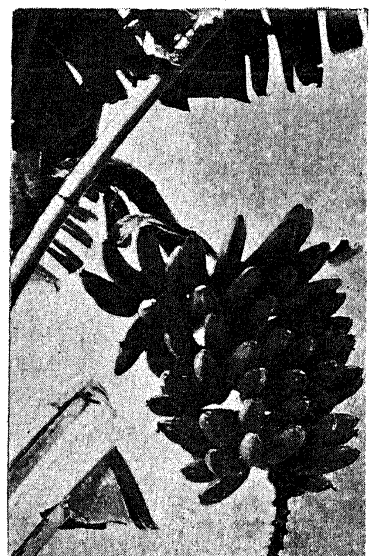
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