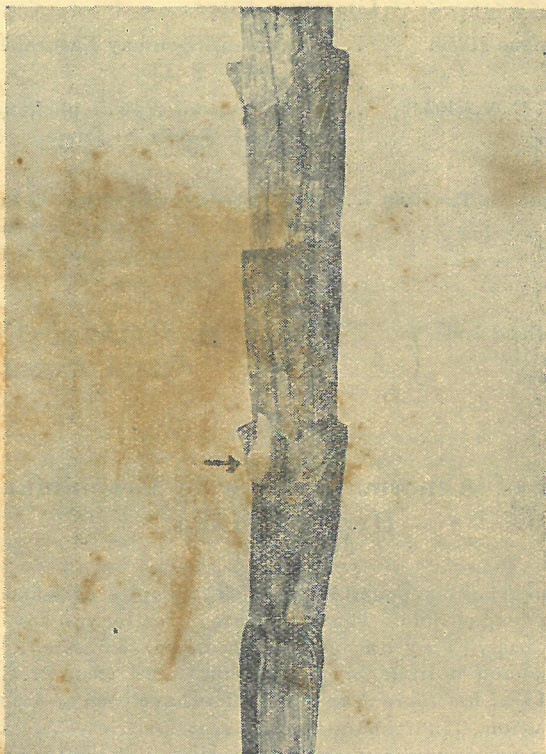


Research Notes:

Growth From a Dried Specimen of  
*Dendrobium aqueum* Lindle

In October 1952, a specimen received from Sri Jackson of Travancore Tea Estates, Vandiperiyar (P. O.) was identified in the Madras Herbarium as *Dendrobium aqueum* Lindle. This is an epiphytic orchid commonly found in Western Ghats at elevations ranging from 3,000 to 7,000 ft. The specimen was left in a brown paper cover for incorporation later on. On 15th of April, 1953, when the specimens were sorted out for poisoning and preservation, the stem of *Dendrobium aqueum* Lindle was noted to have a bud development to over 3 mm. in length (vide photograph). On careful examination, it was noted to have another similar but smaller bud development.



Singh (1933) has recorded the production of buds on dry specimen of *Coleus barbatus* Benth belonging to the natural order Labiatae, a fortnight after the collection of the plant while changing the drying sheets. Natarajan (1950) has recorded the occurrence of fresh buds growing from the dry terminal distal ends of the herbarium specimen *Portulaca tuberosa* Roxb. belonging to the natural order Portulacaceae fifteen days after its collection.

The editors of the Journal of Bombay Natural History Society, (1950) have recorded their experience of the dried tubers of *Euphorbia khandalensis* Blatt bursting into flowers six months later; and after leaving it in formaline fumes for

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one year when planted in a pot, it continued to flower and fruit for more than eight years. They have also stated that it is common experience in Bombay to find epiphytic orchids growing even after they have been dried, pressed and attached to the herbarium sheets; but no specific instance has been given.

The present case of growth from the dried specimen of *Dendrobium aqueum* is interesting in that the growth is after a change in climate from the very hot weather to the humid and rainy weathers experienced at Coimbatore at that period. The atmospheric humidity was ranging from 70% to 75% during the hot period and with the continuous summer showers received, the humidity rose above 82% and reached even 97%. This increase of humidity of the atmosphere had invigorated the buds of the more or less dried specimen to grow. This indicates the efficient adaptability of the epiphytic orchids in utilizing the moisture of the atmosphere even without the special tissues as velamen.

#### Literature Cited :

1. Anonymous (1950) .. Journal of Bombay Natural History Society. Vol.—49. p. 135.
2. Singh T. C. N. (1933) .. "An unusual growth phenomenon in *Coleus barbatus* Benth" Current Science Vol. 1. p. 273.
3. Natarajan A. T. (1950) .. "A note on the growth in a Herbarium specimen of *Portulaca tuberosa* Roxb." Journal of Bombay Natural History Society. Vol.—49. pp. 134—135.

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### Production of Abnormal Leaves in Groundnut—*Arachis Hypogea*, Linn.

The groundnut has compound leaves with two pairs of leaflets situated close to each other on a long petiole. The leaflets are opposite, sub-sessile with a short pulvinus at the base. They are medium sized, i. e., 3.6 cms.  $\times$  1.8 cms. in the spreading varieties and a little bigger, 5.1 cms.  $\times$  2.4 cms. in the bunch types. Instances where a leaf had more than four leaflets have been noticed at the Agricultural Research Station, Tindivanam (South Arcot District—Madras). The supernumerary leaflets are invariably smaller in size, i. e., 2.0 cms.  $\times$  1.1 cms. in spreading and 3.5 cms.  $\times$  1.6 cms. in the case of bunch types. Their number varied from one to three per leaf. Normally two or three such leaves occur in one plant in the bunch and rarely two in the spreading type but in the East African variety AH 6668 'Teso bunch' as many as ten abnormal leaves were counted. The attachment of these leaflets to the main rachis is peculiar, they are not distributed like the normal leaflets but are found attached to a small pulvinus which appears to be a branch of the pulvinus of the normal leaflet. In some cases, the leaf blade is not developed and a stipule like spur is noticed in place of the abnormal leaflets (vide plate). This abnormality, was not confined to any single variety but was noted in all the 37 bunch and 49 spreading varieties raised on the station. But this occurrence was more common in the bunch types than in the spreading types. In

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the variety AH 262 'Improved Spanish' the occurrence of abnormal leaves with 7 leaflets was more common. The abnormal leaves are produced when the plants are about a month old and immediately after the receipt of heavy rains following a severe drought. The leaves produced subsequently are normal.

The reason for this abnormal behaviour is rather difficult to assess. Since none of the other species of *Arachis* have been reported to have more than four leaflets it cannot be attributed to atavistic tendencies. Possibly, it is only an attempt to get rid of the excessive water content and in this respect it may bear resemblance to the production of diminutive leaves in rainy weather in the case of the normally cladode and phyllode bearing plants like *Opuntia delinii*, *Casuarina equisetifolia*, *Parkinsonia*, etc.

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## Review

**'Plant Protection in India' published by Messrs. The Imperial Chemical Industries (India) Limited:** The second edition booklet 'Plant Protection in India' published by Messrs. The Chemical Industries (India) Limited issued this year has been got up in attractive form and contains useful information.

It is divided into ten sections giving details of recent advances, materials brought to use for protection of field crops and stored products, sprayings and dustings and the equipment for them, compatibility of sprays and dusts and common insect pests, fungus diseases and weeds, and their control. The booklet is well printed and has a number of excellent illustrations.

Considerable trouble was taken in getting up Section VI-on common insect pests and their control. Under 'control' in this section there are only a few items that require some changes from the view point of Madras Department of Agriculture. With the rapid changes that are taking place in Economic Entomology no booklet on the subject can be perfect by the time it comes out of the Press and on that account its value cannot be under estimated.

V. T. R.



**Madras Bananas—A Monograph.** by K. Cherian Jacob. (Government Printing, Madras, 7 Rupees 6 annas.): Mr. Cherian Jacob has given the botanical and the horticultural world a monumental work in the monograph on Madras Bananas. The monograph has nine chapters dealing with the history of the banana, area, nomenclature of the the cultivated bananas, systematic descriptions etc. The author has made the book further useful and interesting even to a non-scientist by including in the monograph chapters dealing with cultural practices, economic, Banana products, dietetics, analysis of the fruits of the varieties of Banana. There are five appendices which enhance the value of the book and makes it easy for reference to any aspect of banana dealt within the book. There is besides an exhaustive Bibliography and a carefully prepared index. The monograph runs to 228 pages and what is most noteworthy is, the publication has as many as 84 beautiful illustrations.

While there have been publications, mainly by foreign authors, such as William Fawcett's "The Banana, its cultivation, distribution and commercial uses" 1913 and that of P. K. Raynalds, "The story of the banana, 1926 and several others in the form of bulletins, articles etc. vide the Bibliography of the monograph, it will not be an exaggeration if I state that the Madras Bananas is unique in its kind, the first to clarify the nomenclature of the cultivated bananas and fine banana a new and fitting name, and also the first to standardise the varieties and give each of them all through systematic description. A perusal of chapter ii will show clearly how the author arrived at the new name *MUSA SAPIDISIACA*, K. C. Jacob, nom, now, (*Musa Sapientum* L, et *Musa*) new specific name "Sapidisiaca" suggested to Jacob by no less a Botanist than Dr. N. L. Bose of the Kew Herbarium, London, takes its first half from *Sapientum* and the second half from *Paradisiaca*. It must be remembered that this not a combination, but a *nomen novum* as the author has clearly explained it from the systematic Botanist's point of view. Mr. Jacob has gratefully acknowledged the apt suggestion made by Dr. N. L. Bose.

As a book, systematic Botanist with an eye for details as well as for classification, the 500 varieties which were subjected to study have been standardised and classified into 53 varieties, 15 sub varieties 5 exotic types and one instable type. Appropriate common names mostly selected out of the local names have been allotted to them. Detail and accurate systematic descriptions of the varieties etc. are given in chapter vi for which a very valuable artificial key has been furnished in chapter v.

The author is to be congratulated for the valuable service rendered both to the scientific and the lay world. The book will prove useful to the Research workers or Bananas and to the common man who is interested in growing bananas for whom there is plenty of information on all aspects, such as selection of varieties, cultural practices, economics, Dietetics, analysis of varieties of fruits etc. Banana is definitely cheaper fruit than mangoes or apples in India, easy to raise and one that is available in the market all round the year and this monograph should help the banana grower to raise large plantations through which banana fruits should be made abundant for consumption by the majority who are poor who cannot afford to go in for costlier protective food. The book is well got up and price moderate so that it could be on the shelves of not only research libraries but also Colleges, Schools and private libraries of individuals interested in fruit growing.

S. N. C.



## Gleanings

**Novel method of interplanting sugarcane with Rice-Taiwan's sugar development programme:** The traditional preference of farmers for food crops has resulted in interplanting of the crops on Taiwan, including the interplanting of rice and cane, rice and vegetables, cane and legumes, and other systems. Rice - cane interplanting in 1947 - '48 was carried on over 15,000 acres, which amounted to 5% of total sugarcane acreage. The economics of the system is that cane planting, usually from August to September, can take place while the second crop of rice is going to flower in the field. Agronomists have ingeniously arranged to have one row of rice moved close to the next in every five rows, allowing one row of space for the planting of sugarcane. As it is important to maintain a certain level of water for the flowering period of rice, the seed pieces of cane are just put on the top of the mud of the paddy field and covered with soil and fertilizer, until the rice is harvested. This rice - cane interplanting system makes a bridge for a rotating system of rice and sugarcane within three years.

[Extract from *Sugar*, February 1953, p. 39]

**Minor elements in nutrition of sugarcane - Role of copper:** In an investigation on the practice of inter-calary cultivation of food crops (corn, carrots, beans, potatoes) it was noted that on strips where potatoes had been cultivated the yields of cane and sugar were greatly in excess of yields on strips where potatoes had not been grown. Records showed that the potatoes in question had been sprayed with Bordeaux mixture, which indicated that the phenomenon was due to the copper that had been incorporated into the soil. In a subsequent series of field experiments on various sandy, sandy loam, and clay types of soil treated with 4 to 7 kilograms of copper sulphate per hectare, it was found that yields of cane and sugar were increased by 30 to 40% and more. However, this increased production did not carry over to the first ratoon crop, which were not above ordinary; in other words, the copper treatment had no after-effect.

[Extract from *Sugar*, March 1953, p. 66]

M. L. K.