

doubt, "A. D.," by his method, p. 503, can do more bulk in the time; but there are several things in it which I cannot credit. That fruit is ripe is sufficient test for me that the seed is the same; then to allow the seed to lie until the fruit is partly decomposed is considered an error in practice. Some of your readers who see this will know by their own experience, that Tomato seed soon spoils itself by self-sprouting. I should be sorry to clean any Tomato seed by the water plan, in fact I can see no need of it, the seed saved by me being white, or light-brown, and good. My method admits also of the fruit being eaten while in prime condition. That the more solid-fleshed Tomatos are nearly seedless I know full well, and to grow Tomato seed for sale must be done at a loss. I was offered 2s. 6d. per pound once. These remarks of mine I commend to the man who has a good Tomato, and wishes to save its seed. *S. Castle, West Lynn.*

THE BULB MITE.—I found several of my Eucharis bulbs were attacked by this pest and have been making some experiments under the microscope, with the following results. I put six in some clean water to see if they would drown: they seemed quite to enjoy this treatment and increased in number to forty-two in twelve hours. I then tried a batch in strong salt-water: they seemed quite comfortable in this, and were alive after twelve hours, although their offspring had perished. Next, I put some in lime-water which has the reputation of killing them: I found them quite healthy and nimble after twelve hours' immersion. Strong tobacco-water seemed to have no appreciable effect on them, but a bath in a mixture of paraffin and water killed them in about an hour. I am now making further experiments by soaking in paraffin a bulb that has the mite in it. I shall then pot it up and let you know the result. Perhaps some of your readers may be interested in knowing something about this destructive insect, and those who have not seen it under a microscope in water, or salt-water, have a treat in store, if they can avail themselves of it, and would not regret the time spent on this wonderful specimen of creation. In water, it seems to throw out dark clouds as big as itself from every portion of its body and legs, and drawing it in again in a most marvellous manner. *Edward Collins.*

TO DESTROY MEALY-BUG AND THRIPS ON STOVE PLANTS AND ORCHIDS.—After many years' trial I find the following mixture the safest and most efficient to use:—One pint of salad-oil, a quarter of a pint of camphorated spirit, well mixed. It may be put on with a camel-hair pencil wherever the pest is seen. I always keep a small bottle in the stove ready for use. For thrips I find it more convenient to use one pint of water with which a quarter of a pint of camphorated spirit has been mixed, and sponge the leaves over. This insecticide is not offensive to the sense of smell, and should be used when the foliage is dry. *Wm. Smythe, Basing Park, Alton.*

NARCISSI (see p. 666).—We have in the botanical department here numerous drawings of Narcissi by Salisbury, with manuscript notes and specimens; some of the latter represent Haworth's varieties, and one, at least, was given by him to Salisbury. They will be found in the second volume of the "Botanical Manuscripts," and drawings of R. A. Salisbury, which the late Dr. J. E. Gray presented to the department. *James Britten, Natural History Museum.*

THE GENUS CRYPTOPHORANTHUS, OR WINDOW-BEARING ORCHIDS.

THROUGHOUT the whole range of the extensive Orchid family it would be difficult, if not indeed impossible, to find a more extraordinary little group than the one now under notice, and to which the term Window-bearing may well be applied. The flowers do not open at all in the ordinary manner, but the sepals remain united both at base and apex—two small lateral openings, one on either side, where the upper sepal joins the lateral ones, being the only openings into the flower. That of one species has been compared to the head of a bird, with a perforation where the eyes should be. And while all the species are remarkable on account of their structure, some at least are of considerable interest from a horticultural point of view. But they are known under

other names. In fact, the genus is practically a new one as far as gardens are concerned, though it was described six years ago. But even at the present time the species have never been collected together, and the object of the present paper is to supply this deficiency. Two of them came into my hands a short time ago on two consecutive days, one from an esteemed correspondent, the other flowering in the Kew collection, and as the latter required a name I had to overhaul the genus to find one. And now for its history, for it will be seen that our knowledge has accumulated but slowly, and that its claim to rank as a distinct genus has been very tardily recognised.

In 1836 Lindley described (*Bot. Reg.*, sub t. 1797) the first species of the genus, under the name *Specklinia atro-purpurea*, the specimen seen by him being a cultivated one, from a plant imported from Jamaica. *Specklinia* was then considered a distinct genus, but as Lindley afterwards came to the conclusion that it could not be maintained as distinct from *Pleurothallis*, all the species were by him transferred to the latter, and our present one became *Pleurothallis atro-purpurea* (*Bot. Reg.*, 1842, *Misc.*, p. 81). In 1845 the plant was figured by Sir William Hooker (*Bot. Mag.*, t. 4164) as *Masdevallia fenestrata*, Lindl. MSS., not a word being said about its previous publication under the aforementioned names. Sir

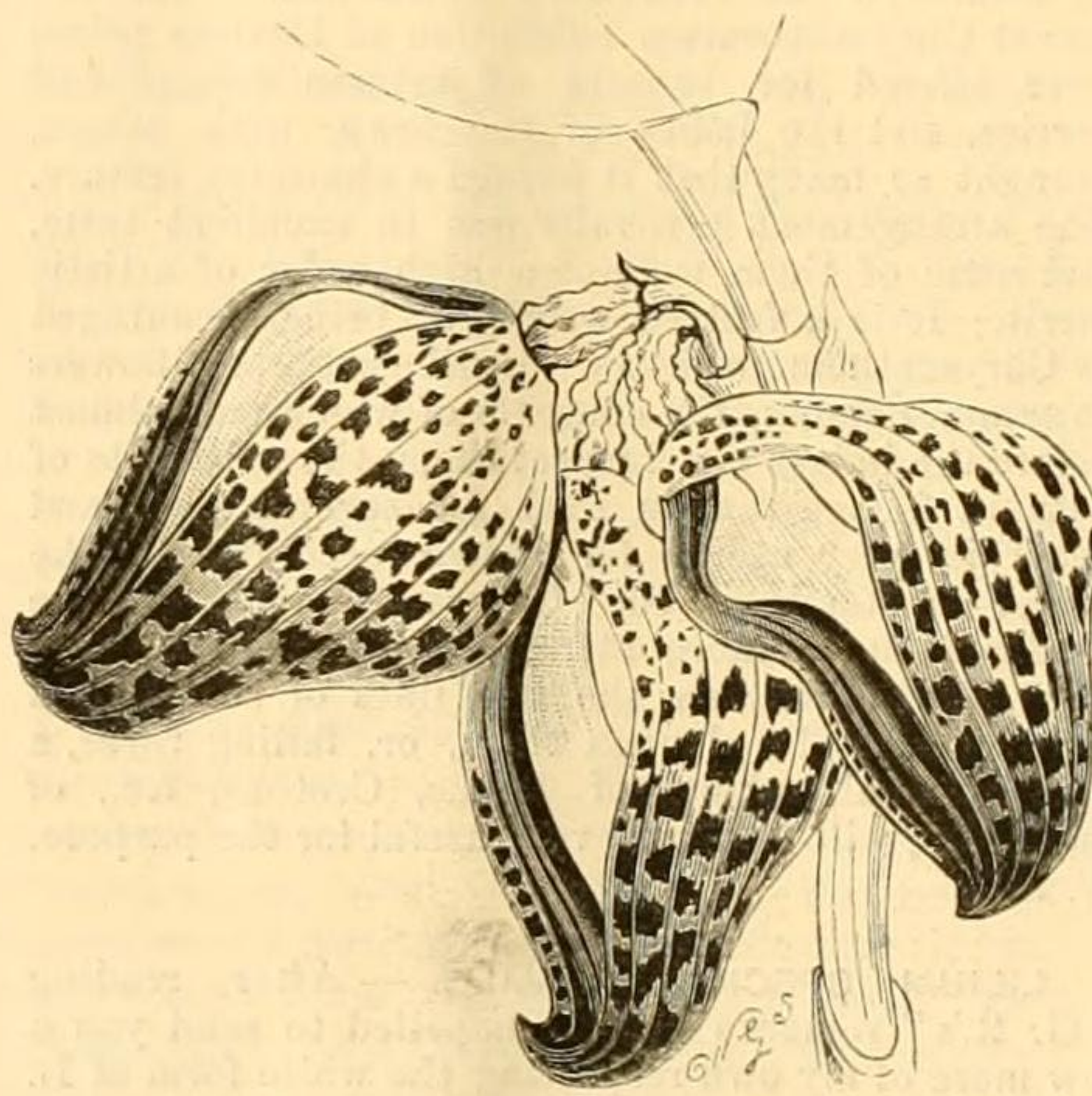


FIG. 134.—MASDEVALLIA DAYANA, SHOWING THE "WINDOWS."

William called the plant the "Windowed Masdevallia," and remarked:—"This is one of the very curious productions of Nature of which there are such frequent instances in the orchideous plants. The plant is not only singular in colour, the flowers being externally of a deep blackish blood colour, but still more singular in form, with the sepals united below and at the apex, leaving a space much below the apex, which is open and window-like, the whole representing the head of a bird, with a perforation where the eyes should be." This plant was sent from Jamaica by Purdie in 1843, and flowered during October and most of the winter months at Kew.

In 1875 a second species appeared, Professor Reichenbach describing *Masdevallia gracilentia* in these columns (n. s., iv., p. 98) from Costa Rica; whence it was introduced by Endres, and flowered by the Messrs. Veitch, and also at the Hamburgh Botanic Garden. It was described as near *M. fenestrata*, but smaller, the flowers blackish-purple, and with the aperture much greater. A third species appeared in 1878, *Masdevallia hypodiscus* being described (*Gard. Chron.*, n. s., x., p. 234) from some unpublished locality. It was introduced by Lehmann for Mr. Stuart Low, who flowered it. It is said to be twice the size of *M. gracilentia*, its nearest ally, the flowers to be deep violet-purple, with a very long narrow window, and numerous whitish fringed crests all over the principal veins. *Masdevallia Dayana*

soon followed, in 1880 (*Gard. Chron.*, n. s., xiv., p. 295), from New Grenada. Mr. Day obtained it at a sale of Linden's plants. It was also sent by Wallis to the Messrs. Veitch. Professor Reichenbach observed, when describing it:—"I always think of certain birds—partridges—when seeing the flower." It is a large and handsome species, the flowers being $1\frac{1}{2}$ inch long, the window very long and narrow, and the colour very different from that of the preceding ones. The upper sepal is honey-coloured, heavily blotched with dark purple behind, shading off to blackish-purple towards the apex; the lateral sepals bright yellow, with a few minute purple spots, but shading off to a dull purple towards apex. A figure which recently appeared in these columns (n. s., xxvi., p. 428, fig. 86, here repeated) well shows its peculiarities.

Two Brazilian species also appeared, not, however, as *Masdevallias*, but this time described under *Pleurothallis*. Rodriguez, in 1877 (*Gen. et Sp. Orch. Nov.*), described *Pleurothallis fenestrata* (p. 12) and *P. cryptantha* (p. 13), both from Brazil. The former he describes as having numerous flowers borne in fascicles, the colour blackish-purple, except the base, which is dirty yellow with purple spots, and the plant, with the exception of the flowers, having the general appearance of *Oncidium pumilum*. The latter he describes as having minute leaves, the flowers much smaller than the preceding, and borne from one to three together below the leaves; the colour of the sepals white spotted with lilac outside, but wholly lilac within, the petals white, the lip white spotted with lilac, and the column yellow.

In 1881, Rodriguez published a second part of the above work, and having come to the conclusion that the above two species could not be retained in *Pleurothallis*, he made a new genus for their reception, which he called *Cryptophoranthus*, in allusion to the hidden parts of the flower—i.e., the petals, lip, &c.—being concealed within an almost closed flower, the only opening into which was by a pair of small windows at the side. He also added a third species, *C. punctatus*, with very small pendulous flowers, the colour greenish with brown-carmine spots outside, and dark brown inside; the petals apricot-yellow margined with brown, and the lip wine-coloured. All these seven species have the same remarkable windowed flowers, and the one abovementioned as now flowering at Kew is an eighth species, which will be described at the close of this paper. All agree in structure, and will have to be brought together.

The question now arises, Do they constitute a distinct genus, or a mere section either of *Masdevallia* or of *Pleurothallis*? *Cryptophoranthus* is not included in the main body of the *Genera Plantarum*, but Mr. Bentham obtained Rodriguez's work in time to mention the genus in a note in the Addenda, where he speaks of it as perhaps forming a distinct section of *Pleurothallis*, and in this work he retains *Masdevallia fenestrata* in *Pleurothallis*. But in his "Note on Orchideæ" (*Journ. Linn. Soc.*, xviii., p. 292) he says:—"Distinct as are the characters which separate *Masdevallia* from *Pleurothallis*, there is one species which has apparently with equal right been published by Lindley himself in both genera—*Pleurothallis atropurpurea* or *Masdevallia fenestrata*. It has the stem elongated below the leaf, and the sepals without spreading points, as in *Pleurothallis*; but the flowers are large, as in *Masdevallia*, under which genus it has been figured, and has established itself in our collections." Professor Reichenbach, as we have already seen, retains it in *Masdevallia*. I think, however, every one who has followed me thus far will agree that *Cryptophoranthus* has as much right to be considered a section of one genus as of the other, or, in other words, that it belongs to neither, but constitutes a distinct genus, as distinct—indeed, more so—than many other groups which are universally admitted as genera.

Eight species of *Cryptophoranthus*, then, are known, and as they range over an area from the West Indies to the Andes and Brazil, it is probable that other species remain to be discovered. The

fertilisation of this remarkable genus, and the economy of the peculiar structure of the flowers, remains a mystery. Darwin investigated it minutely, but was completely baffled with it, and I cannot do better than conclude with a summary of his remarks upon it. *Masdevallia fenestrata* was the species he experimented upon, and the full account may be found at p. 168 of his *Fertilisation of Orchids*. Speaking of the flower, he says that "the three sepals always cohere together, and never open, two minute lateral oval windows seated high up the flower and opposite to each other, affording the only entrance into it. The presence of these two minute windows show how necessary it is that insects should have access in this case as with all other Orchids. How insects perform the act of fertilisation I have failed to understand. At the bottom of the roomy and dark chamber formed by the closed sepals the minute column is placed, in front of which the furrowed labellum stands, with a flexible hinge, and on each side of the two upper petals, a little tube being thus formed. Hence, when a minute insect enters, or a larger one inserts its proboscis through either window, it has by touch to find the inner tube in order to reach the curious nectary at its base. After cutting away the sepals I vainly endeavoured, by pushing a bristle into the tubular flower, to remove the pollinia. The whole structure of the flower seemed carefully intended to prevent the withdrawal of the pollinia, as well as their subsequent introduction into the stigmatic chamber. Some new and curious contrivance has here to be made out." Thus far Mr. Darwin, who only knew one species, and now that eight are known, the flowers varying from a quarter to 1½ inch long, and the windows differing considerably in shape and relative size in the different species, our curiosity is enhanced. The following are the species, beginning with the large and ending with the small-flowered ones:—

Cryptophoranthus, Rodr., *Gen. et Sp. Orch. Nov.*, ii., 79.

1. *C. Dayanus*, Rolfe.—*Masdevallia Dayana*, Rehb. f., in *Gard. Chron.*, n. s., xiv., 295; xxvi., 428, fig. 86. New Grenada.

2. *C. hypodiscus*, Rolfe.—*Masdevallia hypodiscus*, Rehb. f., in *Gard. Chron.*, n. s., x., 234. Locality not stated.

3. *C. atropurpureus*, Rolfe.—*Specklinia atropurpurea*, Lindl., in *Bot. Reg.*, sub. t. 1797.—*Pleurothallis atropurpurea*, Lindl., in *Bot. Reg.*, 1842, *Misc.*, p. 81.—*Masdevallia fenestrata*, Lindl., *ex Hook.*, *Bot. Mag.*, t. 4164. Jamaica and Cuba.

4. *C. gracilentus*, Rolfe.—*Masdevallia gracilentia*, Rehb. f., in *Gard. Chron.*, n. s., iv., 98. Costa Rica.

5. *C. fenestratus*, Rodr., *Gen. et Sp. Orch. Nov.*, ii., 80.—*Pleurothallis fenestrata*, Rodr., *l.c.*, i., 12, Brazil.

6. *C. cryptanthus*, Rodr., *l.c.*, ii., 80.—*Pleurothallis cryptantha*, Rodr., *l.c.*, i., 13. Brazil.

7. *C. punctatus*, Rodr., *l.c.*, ii., 80. Brazil.

8. *C. maculatus*, Rolfe, n. sp.—Stems extremely short. Leaves elliptical, obtuse, very fleshy, with numerous purple spots or small blotches on the upper surface, 1¼–2¼ inches by ¾–1¼ inch; apex minutely tridenticulate. Flowers numerous, two lines long, situate at the base of the leaf on the very short stem (so short that the flowers actually lie on the soil), obovoid, obtuse, pubescent, yellow, densely spotted with crimson; the windows extending from the middle half-way to the apex of the sepals, half as broad as long. Petals spathulate, obtuse, yellow, with crimson at apex, and a few spots of the same colour below. Lip cordate-elliptical, obtuse. Column-wings small, denticulate above. Petals and lip half equalling the sepals.

A very remarkable little plant, lately flowering at Kew, sent by Mr. Walker, no locality being given; but as another plant which came with it proved on flowering to be the Brazilian *Saundersia mirabilis*, I think this, too, may have come from Brazil. It appears to be allied to the preceding species, but differs in the broader spotted leaves, the proportionately longer, obtuse petals, differently shaped lip, and other characters. *R. A. Rolfe*.

RAVENALA MADAGASCARIENSIS.

We give at fig. 135 a representation of this striking tree, from a photograph kindly sent us by Mr. Hart. The specimen was planted in 1876 at King's House, Jamaica. In this country it is only in tropical stoves of the largest size that this noble plant can be grown, but the imposing character of the foliage is such that some sacrifice is well endured for its sake. We append a brief description from the *Treasury of Botany*:—"A splendid Madagascan plant, constituting a genus of Musaceæ. The trunk is like that of the Palm, and is built up by the sheaths of the leaf-stalks, and they diverge from the upper portion of the stem somewhat in the same manner as the ribs of a fan, from its centre. The flowers are closely crowded in the axils of large bracts or spathes which are arranged in two rows along the terminal flower-stalk. In botanical characters the flowers are similar to those of the species of *Musa* and *Strelitzia*, but they differ in the stamens, which are six in number. The fruit also is woody, capsular, three-celled, and three-valved; and the seeds are arranged in two rows,



FIG. 135.—RAVENALA: THE TRAVELLER'S TREE.

in each of the compartments of the fruit, and have a pulpy blue arillus surrounding them. This noble plant is called by the French the Traveller's Tree, probably on account of the water which is stored up in the large cup-like sheaths of the leafstalks, and which is sought for by travellers to allay their thirst. The broad leaves are used as thatch to cover the huts in Madagascar. The seeds are edible, and the blue pulpy aril surrounding them yields an essential oil. The blades of the leaves are oblong in form, and are larger in size than those of any known plant, being simple, except the *Victoria regia*."

TRADE NOTICES.

UNFAIR TRADING IN BULBS.

As dealers in bulbs we think the trade ought to make some combined stand against the prices the Dutchmen charge for their bulbs to dealers, and then immediately afterwards flood the towns with bulbs to be sold at any price they will make. Here in Birmingham we have had from thirty to sixty cases sold by auction per week since the commencement of the season, and we have no power to stop

these sales; but what could be done would be to insist upon getting bulbs at something like the price they are sold under the hammer.

Bulbs of Hyacinths of fair quality have been sold this year at 4*d.* per dozen—blues and reds, named; sorts such as Lord Macaulay at 6*d.* a dozen, and mixtures at as low a price as 1*s.* 6*d.* per hundred. Large bulbs of *Polyanthus Narcissus* have been sold at prices from 2*s.* to 6*s.* per hundred; yellow *Crocus*, fair bulbs, as low as 10*d.* per thousand (see invoice enclosed).

It may be observed that few white Hyacinths are sent to these sales; but many good sorts, such as *Norma*, white *Baronness Thuyl*—the white varieties fetching 1*s.* 6*d.* to 2*s.* per dozen. Anemones to name, *Crocus*, *Ranunculus*, *Lilies*, &c., are among the bulbs disposed of at these absurd prices. *Pope & Sons*.

SOCIETIES.

LUTON HORTICULTURAL.

NOVEMBER 16 AND 17.—The fourth annual *Chrysanthemum soiree* and show of fruits, roots, and vegetables, in connection with this Society, was held in the Waller Street Plait Hall, and although the number of exhibits was not quite so numerous as in some previous years, yet the quality of the exhibits and the general arrangement of the specimens was a distinct advance upon former exhibitions.

The collections of *Chrysanthemums* were arranged round the sides of the hall, the background being relieved by an assortment of greenery, which had a very pleasing effect.

The cut blooms with the fruit and vegetables occupied commodious tables running down the centre of the hall, this being further embellished by numerous foliage plants and a fine collection of *Primulas*, not for competition, from the conservatories of C. R. Fenwick, Esq. (gr., Mr. J. Underwood), High Firs, Harpenden. While in some classes the competition was not very keen, in others a good number of exhibits were shown, the vegetables being particularly worthy of note.

Plants.—For a group of *Chrysanthemums*, any variety, not exceeding 9 feet by 7 feet, the 1st prize went to Mr. Edwin Coupers, Old Bedford Road, for a cleanly grown and well balanced group as to colours; 2nd, Mr. J. J. Kershaw, Bedford Road House; the 3rd prize was awarded to Mr. W. Phillips, The Lancrets, whose group contained some excellent plants of the *Barbara* variety, but the block was composed of too many white varieties to be effective.

In the class for six specimen plants, distinct, Mr. E. Coupees again was the successful competitor; Mr. H. Gibbons, Park Street, taking 2nd; and Mr. J. J. Kershaw was a rather bad 3rd.

For six pompon plants, there was but one exhibitor, whose plants were certainly poor.

Cut Blooms.—Twelve (incurved), distinct.—1st, Hon. Baron Dimsdale (gr., Mr. W. Jarvis), Essenden House, Hatfield, a beautiful lot which easily secured premier honours, and contained *John Salter*, *Jeanne d'Arc*, a grand white variety; *Beauty*, *Lady Hardinge*, Mr. Bunn, Mr. Cobay, *Princess Beatrice*, very fine; *Queen of England*, *Lord Wolseley*, *Empress of India*, *Bronze Jardin des Plantes*, and *Prince Alfred*. 2nd, Mr. W. Phillips, a nice lot, some good blooms of *Cherub*, *Emily Dale*, and *Princess Beatrice*.

Twelve (Japanese), distinct.—The Hon. Baron Dimsdale was unquestionably 1st, with a fine display of *Japanese*, *Val d'Andorre*, *Soleil Levant*, *Madame C. Audigier*, *Thunberg*, *Duchess of Albany*, *Edward Audigier*, *Elaine*, *Belle Paule*, *Mons. John Laing*, an exquisite variety; *Comtesse de Beauregard*, very beautiful. The 2nd place was secured by Mr. W. Phillips with *Comte de Germiny*, *J. A. Davis*, *Peter the Great*, *M. Burnet*, a lilac-mauve, very pretty; *Album plenum*, *Bras Rouge*, *Mary Major*, and *Japanaise*.

Six bunches of pompons, three trusses each.—1st, Mr. H. L. Sell, Windsor Street, Luton.

In the amateur divisions for plants and cut blooms some very creditable exhibits were staged, which must have been very gratifying to the executive, while at the same time the collections reflected much credit upon the growers.

Mr. George Barford showed some very fair specimen plants artistically trained in a pyramid form which were awarded a 1st prize.