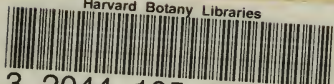




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CONTENTS OF VOL. XVII.



	AGE
THE CEDAR OF GOA. By Dr. M. T. MASTERS, F.R.S., &c.	1
THE DECIDUOUS TREES AND SHRUBS OF JAPAN. By Mr. JAMES H. VEITCH, F.R.H.S.	12
RARE TREES AND SHRUBS IN THE ARNOLD ARBORETUM. By Mons. MAURICE DE VILMORIN, F.R.H.S.	22
HYBRID NARCISSI. By the Rev. G. H. ENGLEHEART, M.A., F.R.H.S.	35
BOTANICAL EXPLORATION IN BORNEO. By Mr. F. W. BURBIDGE, M.A., F.R.H.S.	44
FLOWERING TREES AND SHRUBS. By Mr. GEO. NICHOLSON, A.L.S., F.R.H.S.	56
EXAMINATION IN HORTICULTURE, 1894	66
CACTACEOUS PLANTS. By Mr. JOHN W. SINGER	71
FILMY FERNS. By Mr. J. BACKHOUSE	79
RELATIONS BETWEEN GARDENERS AND THEIR EMPLOYERS. By Mr. MALCOLM DUNN	86
LORD BUTE'S VINEYARDS. By Mr. A. PETTIGREW	95
HOW TO POPULARISE ORCHID-GROWING. By Mr. E. H. WOODALL ...	104
ORIGIN OF COMMON VEGETABLES AND THEIR VALUE AS FOOD. By Professor G. HENSLOW, M.A., F.L.S., &c.	113
CHRYSANTHEMUMS. By Mr. C. E. SHEA	128
PRINCIPLES OF JUDGING AT FLOWER SHOWS. By Mr. JAS. DOUGLAS...	135
RICHMOND ALLOTMENT-HOLDERS	140

	PAGE
EXTRACTS FROM THE PROCEEDINGS OF THE SOCIETY:—	
ANNUAL GENERAL MEETING: REPORT AND BALANCE SHEET	i
SCIENTIFIC COMMITTEE MEETINGS.....	xiv and cxlvii
FRUIT COMMITTEE MEETINGS	xxviii and cliii
TRIALS AT CHISWICK: VEGETABLES	clxix
FLORAL COMMITTEE MEETINGS	xxxviii and clxxxi
TRIALS AT CHISWICK: FLOWERS.....	cexiv
ORCHID COMMITTEE MEETINGS	lxxxiii and ccxxviii
NARCISSUS COMMITTEE MEETINGS	cxxxvii
TEMPLE SHOW, 1894	cxxxii
BULBOPHYLLUM LEYSIANUM	cxxxiv
A SUBSTITUTE FOR COFFEE	cxxxvi
BOOKS FOR THE LIBRARY	cxxxviii
DONATIONS TO CHISWICK	cclxii
LINDLEY LIBRARY.....	cclxiv

JOURNAL

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ROYAL HORTICULTURAL SOCIETY.

VOL. XVII. 1894.

PART I.

THE "CEDAR OF GOA."

By Dr. MAXWELL T. MASTERS, F.R.S., F.R.H.S., &c.

[Read at the Scientific Committee, March 13, 1894.]

MUCH and varied interest attaches to the plant commonly known as the Cedar of Goa. From a decorative point of view it is very elegant and distinct, and is largely planted in Spain, Portugal, and Southern Europe generally, as also in most of the warm-temperate or sub-tropical countries of the world. It is rather tender in most parts of the British Isles, but in the South and West, and especially in Ireland, it may be considered hardy. Specimens bearing cones were exhibited at the Conifer Conference from gardens in Cork and Wicklow.*

From the time when it was first made known till recently it has suffered from a multiplicity of names. This has arisen from imperfect information concerning it. Generically it has been included under *Cedrus*, *Juniperus*, *Sabina*, and *Cupressus*, but, by common consent, it now rests in the last-named genus. As to its specific name, there is still room for difference of opinion,

* In the Conifer Congress Report, pp. 507 and 569, mention is made of a specimen at Rosdhu, the property of Sir James Colquhoun, in Dumbartonshire, which had attained a height of 39 feet, with a girth, at 5 feet from the ground, of 2 feet 9 inches. Feeling doubtful as to the correctness of the name, I applied to Sir James for a specimen, which he was good enough to send me, and the inspection of which leaves no doubt whatever that this so-called Cedar of Goa is *Cupressus Lawsoniana*.

and corresponding diversity of practice, as will be made evident in the sequel.

In the vernacular it has always been the "Cedar of Goa"; but, unfortunately, the convenience of this general agreement is somewhat marred by the fact that the tree is certainly not a Cedar, and it is, to say the least, doubtful if it has any direct connection with Goa!

As to its native country, though often called *C. lusitanica*, Portuguese botanists repudiate the notion that it is a native of their country, and all of them agree that it was introduced into Portugal from Goa.

Brotero published in 1804, in his "Flora Lusitanica," the earliest systematic account of the Flora of Portugal as a whole. At p. 216 of the first volume we find in reference to this tree the following remarks: "Cupressus glauca, La Marck. C. foliis quadrifariam imbricatis, acutis: ramis patentissimis, infimis subdependentibus. Lusit. Cedro do Gôa. Cupressus Lusitanica, Tournefort. Colitur uti præcedens [*C. sempervirens*] præsertim Conimbricæ, Bussaco, et in Beira boreali: a Gôa in Lusitaniam olim evecta. Flor. autumn. Arbor procera, ad quinquaginta pedes et ultra alta, citius crescens, breviori vita fruens, ac ligno minus denso, quam præcedens." At the present time some of the Cypress trees which constitute the forest of Bussaco, near Coimbra, are said to have a height of 40 metres, and according to a note, the source of which unfortunately I cannot trace, there are over 5,000 trees, of which more than 500 vary in age from 50 to 240 years, whilst the rest have been planted during the last quarter of a century. The finest and most symmetrical specimen is rather more than 30 metres in height, with a bare trunk of 14 metres, which at a metre from the ground girths 3.50 metres. The branches of some of the trees form a mass of verdure 20 to 25 metres across, and 70 metres round.

Indian botanists, on their side, declare that no Cypress grows wild anywhere near Goa, though, at the present time, Cypresses are cultivated in the gardens of Western India, and have been planted along the Western Ghats. It may well have been introduced of late years into the Portuguese possessions from the mother country. Again, though possibly introduced by way of Goa, which was captured by Albuquerque in 1510, it does not

follow that it originally grew there. It may, for instance, have come from China, where the Portuguese established themselves (at Macao) in 1557. There is in the Kew collection a coloured drawing apparently representing this species, and with a legend in Chinese characters. The drawing was originally in the possession of the East India Company.

By calling attention to the deficiencies in our knowledge as to the history and source of this tree, a chance is afforded of obtaining the desired information hereafter. With this object, I have thrown together the following notes, which give the principal facts in the history of the tree as known up to the present time.

According to Henriques,* the earliest mention of the tree is in a poem by D. Berardo Ferreira de Lacerda in his "Solidades de Bussaco," published in 1634. It is worthy of note that in this the earliest notice the tree is spoken of as "Cypres," and the trees must even then have been of considerable size to have attracted the attention of the poet. At what time the tree first became known as "Cedro de Goa" is not stated, but the epithet must be taken as indicative of the established belief of its introduction into Portugal from Goa.

It has also been surmised that the tree may have been a native of the Azore Islands, and thence introduced into Portugal; but there is little or no evidence in support of this conjecture. In the Kew Museum is a thick slab of wood, about 21 inches in diameter, labelled thus: "*Cupressus sempervirens glauca*, from St. Michael's, Azores, and said to have been dug up from a depth of 100 metres below the surface of the ground. This tree, the *C. glauca* of Lamarck [*i.e.* the Cedar of Goa], is said to have been introduced into the Azores from the East Indies. There is, however, no *Cupressus* indigenous there [?], nor yet in the Azores at the present time." The slab was presented by Dr. Goeze, now Curator of the Botanic Garden, Greifswald, to whom, accordingly, I applied for further information, which he obligingly communicated in the following letter:—

"In 1866 I first went to Portugal, to take charge of the Botanica Garden in Coimbra. Shortly after my arrival there the University authorities sent me to the island of St. Michael's in order to acquire

* *Boletim da Sociedade Broteriana*, 1884. See summary by Professor Wilkomm in the *Garten Flora*, March 1890, p. 98.

some good collections of plants for the Coimbra Garden. On my visiting one of the splendid estates, the proprietor, Señor Antonio Borges da Camara, showed me large pieces of wood which evidently belonged to a coniferous tree, and which, *according to his statement*, had been dug out from a depth of 100 metres. Whether this statement be correct I cannot warrant; possibly 50 metres will do just as well. It was at my instigation that slabs of this wood were sent to the Kew Museum in order to solve the question as to the species. As you are aware, only one coniferous plant is now native to that group of islands—*Juniperus brevifolia*; but that species is known there in the form of a tall shrub, but never as a large tree from which such large wood specimens as that in question could have been obtained. Shortly after my return to Coimbra I visited the convent of Bussaco, which is situated in the midst of a beautiful forest, partly composed of splendid growths of *Cupressus glauca (lusitanica)*—some stems measuring 14 feet in circumference. Now the old monks' Chronica state that this 'Cedro' was introduced (by seeds) to Bussaco in 1622—not from Goa, as many people think, but from the Azores, where this species is actually not to be met with but in small cultivated specimens. Volcanic eruptions have often taken place in those islands, and it is, perhaps, not so very far off to suppose that this species, *Cupressus glauca*, was originally an Azorean one, destroyed there, centuries ago, by volcanic forces. This hypothesis, based, I admit, on very slight foundation, seems at least quite as possible as that the endemic *Juniperus brevifolia* should once have built up gigantic trees.

“As to the origin of the 'Cedro de Goa,' Sir Joseph Hooker and Professor Oliver think, as Professor Wilkomm states in the *Wiener Illustrierte Garten Zeitung* (1890, 3rd part), that *C. glauca* is only a variety of *C. torulosa*, a North Indian species, which would settle the question as to its origin from Goa. I formerly questioned several persons who had resided at Goa, but was informed by them that they had never met that tree there. I have another supposition still. The Jesuits, when going from Portugal to Goa, may well have introduced there (by seeds) the *Cupressus sempervirens*, very common in the South of Europe, and liable, as I observed during my long stay there, to very great variations. Once established in India, it may have given rise to still greater variation, and finally been reintroduced to Portugal as a new species.

“In conclusion, I still believe that the slab of wood from the Azores belongs to *Cupressus glauca*.”

Mr. Jackson has been good enough to compare for me the Azorean slab in question with wood of undoubted *C. sempervirens*, and finds no difference between them save what may be accounted for by age and exposure. Mr. Jackson adds that the wood is certainly not that of a Juniper. It may, then, I think, be

assumed that Dr. Goeze's slab of wood belongs to *C. sempervirens*. Whether *C. lusitanica* or *glauca* is a variety of *sempervirens* is another matter which will be considered later on.

Reverting to the recorded history of this tree, it is not till nearly fifty years after its first mention at Bussaco by the Portuguese poet before named that we find any further record of the tree, and then, curiously enough, in our country. In January 1680 we learn that Mr. John Watts was appointed to superintend the garden belonging to the Society of Apothecaries at Chelsea.* In 1682 the garden was visited by Dr. Hermann, Professor of Botany at Leyden, who proposed an exchange of plants, which proposal Mr. Watts went to Holland (1683) to carry into effect. The result will be stated in a succeeding paragraph. To keep as nearly as may be to a chronological sequence, it is requisite here to mention that in the Banksian Herbarium is preserved the herbarium of Sloane, to which I have had access through the kindness of Mr. Carruthers and the members of his staff, who, as also Mr. B. Daydon Jackson, have rendered me much assistance in this research. In one of the volumes in which Sloane's plants are contained is an inscription on the fly-leaf stating that the plants herein contained were "gathered in the fields and gardens about London in the year 1682, for my own [Sir Hans Sloane's] and Mr. Courten's collections." Among these plants is a small scrap, indeterminable as to the species, but which has the spreading primordial leaves so characteristic of a certain stage of growth in the species of *Cupressus*, *Juniperus*, and *Thuya*. This is called "*Cedrus ex Goa*," and reference is made to Ray's History, p. 1414, of which more anon. This specimen, then, dating from 1682, and subsequently identified by Ray, forms the earliest authentic record, so far as this country is concerned; but it is not wholly a satisfactory one for reasons above stated. In 1684 it was mentioned in a letter from Sloane to Ray among plants thought rare at Chelsea and Fulham.

About the same time, though I am not able to fix the exact date, the Duchess of Beaufort gave to Sir Hans Sloane two specimens of the "Cedar of Goa," gathered at Badminton. These two specimens are contained in the Duchess' herbarium,

* *Memoirs of the Botanic Garden at Chelsea*. By the late Henry Field, Esq. Continued to the present time by R. H. Semple, M.D., &c. (1878).

also preserved in the Natural History Museum, and undoubtedly both belong to what we still call the Cedar of Goa. Reference is made in connection with these specimens to Ray's "Historia Plantarum," p. 1414.

In 1687 we find the tree mentioned in Dr. Hermann's catalogue of the plants in the Leyden Botanic Garden in the following terms: "Juniperus ex Goa: Hujus propaginem hoc ipso mense transmisit ad nos ex Anglia Dominus Watsius nomine Cedri ex Goa. Ramis est magis expansis gracilibus, foliis glaucis tenuissimis et brevissimis. Cæteroquin superiori Junipero Virginianæ videtur similis."* Prof. Suringar obligingly informs me that in the Royal Herbarium at Leyden is still preserved a specimen of "Cedar of Goa" entirely corresponding to *Cupressus lusitanica* as communicated by Prof. Willkomm from Spain and by myself from an English garden. This specimen formed part of the herbarium of Van Royen, and was probably obtained from Hermann.

"Dominus Watsius" has already been mentioned in connection with the Chelsea Garden. It is to be noted that Watts called it a Cedar, but for Hermann it was a Juniper, and that the tree in England must be presumed to have been of considerable size, since Watts sent a cutting ("propaginem") to Leyden.

The next mention of the tree is by Ray in his "Historia Plantarum," vol. ii. p. 1414, and again at pp. 1798 and 1916, anno 1688. Ray speaks of the plant first as a Juniper or a Cedar, but afterwards refers it to Sabina.

It is desirable to quote precisely what this author says. At page 1414 he thus writes: "His addit D. Hermannus Juniperum seu Cedrum ex Goa, quæ ramis est magis patulis, gracilibus, foliis glaucis tenuissimis et brevissimis cæteroqui superiori [Junipero Virginianæ] videtur similis."

At page 1798 of the same volume it is included in the list of plants in Bishop Compton's garden, as observed by Ray in the following passage: "*Cedrus ex Goa falso dicta, rectius Sabina Goensis*. Hæc arbor nec Cedrus est neque Juniperus, sed potius Sabinæ Indicæ Species. Non enim baccas producit sed conos e squamis compactos aliarum Coniferarum instar. Folia, odor, fructus, (qui et Sabinæ vulgari sterili creditæ* [* marginal note

* *Horti Academici Lugd. Batav. Catalogus*: autore Paulo Hermann, p. 346 (1687).

"ex observatione accurata D. Dale"], conulus squamosus est) Sabinæ speciem esse arguunt. Hanc arborem in Histcria ex sententia Hermanni pro Juniperi specie descripsimus."

At page 1916 Ray further adds: "Cedrus a Goa malè collocatur inter Juniperos, est enim conifera et Sabinæ species, eujus odorem gravem spirat."

In 1696, Plukenet, in his "Almagestum," page 326, has these references: "Sabina conifera *Goensis* fœmina rarioribus foliis. Juniperus ex *Goa* H. *Leyden* 346. Cedrus ex *Goa* vulgo Sabina conifera *Goensis* mas, foliis crebrioribus cœsiis—Sabina conifera *Goensis* confertissimis crispatis foliis, circa virgulas triplici serie dispositis," a description which in some particulars suggests a Juniper rather than a Cypress. It is probable that Plukenet here refers, not to two distinct species, still less to two separate sexual states, but to two stages of growth of the same tree, one with the primordial leaves only, the other with the adult foliage, and this is borne out by a specimen in the Banksian Herbarium (R. H. 20, 1798), "gathered by Dr. Plukenet" and labelled "Cedrus ex Goa."

The foliage on the adult trees is also variable, and seedlings from the same tree vary greatly in the density of their foliage and other characters.

Specimens labelled in accordance with the nomenclature of Ray and of Plukenet are preserved also in the Sherardian Herbarium at Oxford, as I learn from the kindness of Prof. Vines and Mr. Druce (see Nos. 5,838, 5,839, 5,843, 5,844).

Tournefort visited the trees at Bussaco in 1689, and in his "Institutiones," p. 586 (1700), speaks of our plant as "Cupressus lusitanica patula fructu minori." It must be remembered, however, that the word "lusitanica" was used by Tournefort as a qualificatory adjective, and not as a distinctive name, the binominal system not then having been introduced.

No mention of the tree is made in the first or in the second editions of "Miller's Dictionary," published in 1731 and 1733 respectively. In subsequent editions Tournefort's description was translated thus: "Spreading Portugal Cypress with smaller fruit." In the eighth edition (1768), the first in which the binominal system of Linnæus is introduced, Miller definitely calls the plant "Cupressus (Lusitanica)," and describes it as follows: "Foliis imbricatis, apicibus aculeatis

ramis dependentibus." Miller distinctly states that the plant of this species sent to the Leyden Garden by his predecessor, Watts, came from the garden of Bishop Compton at Fulham. It is worth while to cite what Miller says at length :—

"The third sort is at present pretty rare in English gardens, though of late years there have been many plants raised here ; but this sort is not quite so hardy, I fear, as the common Cypress, for the plants are frequently killed or greatly injured in severe winters, and in the hard frost in 1740 there was a large tree of this kind entirely killed in the gardens of his Grace the Duke of Richmond at Goodwood, in Sussex, which had been growing there several years; and in the year 1762 many large trees were killed. There are great plenty of these trees growing at a place called Bussaco, near Cœmbra, in Portugal, where this tree is called the Cedar of Bussaco ; and there it grows to be a timber tree, so that from thence the seeds may be easily procured.

"This tree grows naturally at Goa, from whence it was first brought to Portugal, where it has succeeded and been propagated. Formerly there were some trees of this sort growing in the Bishop of London's garden at Fulham, where it passed under the title of Cedar of Goa, by which it was sent from thence to the Leyden garden with that name."

Compton was made Bishop of London in 1675, and died in 1713. Unfortunately we have no clue to the source whence he derived his specimens, but it would seem most probable that he received them from Portugal. It is well known that he received numerous plants and seeds from what are now the United States, but it is not at all likely that he received the Cypress from that source. As Miller speaks of "trees," they must have been introduced for some considerable time when he wrote.

Hermann, as we have seen, received a cutting from Watts, and, from Miller's statement, it seems certain that Watts obtained it from the Bishop's garden at Fulham ; although, as he was at the time superintendent of the Chelsea Botanic Garden, he might possibly also have sent it thence. In Miller's time the tree was grown at Chelsea, as is shown by a specimen in the Banksian Herbarium from Miller, but labelled subsequently "Cupressus pendula, L'Héritier MSS." This specimen is clearly referable to *C. lusitanica*, Miller.

Succeeding writers occupied themselves more with the ques-

tion what name the tree should bear than with the problems concerning its origin. It may suffice to say that in 1784 L'Héritier figured and described our plant as *C. pendula*,* a name taken up by Aiton in the first edition of the "Hortus Kewensis," vol. iii. p. 373 (1789). In 1790 Lamarck called it *C. glauca*,† and in 1804 Brotero adopted Lamarck's name and gave the description cited on p. 2. ‡

Aiton, in the second edition of the "Hortus Kewensis," vol. v. p. 323 (1813), follows Brotero and Lambert in the use of this name.

It is not needful to pursue any further the record of the Cedar of Goa, as represented in European literature, gardens, and herbaria. Successive writers have merely compiled from their predecessors without giving any additional information. One thing comes out clearly, and that is that the Cedar of Goa of the literature as above cited, and of European gardens, is decidedly the *Cupressus lusitanica* of Miller. The name he gave, or adopted from Tournefort, has been abandoned by some on the ground that the tree is not native to Portugal, but as it is the oldest name, and the oldest trees, whatever their origin, are found in Portugal, it seems better to retain the name *lusitanica*.

Whether it is a true native of Portugal, whether it is a true species, or whether it is a derivative from *C. sempervirens* (which grows commonly in Portugal as a cultivated plant), or from the West Himalayan *C. torulosa*, are all points which I venture to think are still undecided, although, of course, we must not underrate the testimony of Professor Henriques and other Portuguese botanists, who are unanimous, as we have seen, in considering the tree as of Indian origin.

Before we can discuss these points it is requisite to ascertain what species of *Cupressus* grow in the vicinity of Goa.

Professor Henriques, on this head, *l.c.*, cites a Portuguese forest engineer, Señor Lopes Mendes, as saying that, although he had traversed the whole territory of Goa on duty as forestry commissioner, he never met with any "Cedar" the characters

* L'Héritier, *Stirp*, 15, t. 8.

† Lamarck, *Encycl.*, ii. p. 243.

‡ Brotero, *Flora Lusitanica*, i. p. 216; also under the same name in Willkomm and Lange, *Prod. Flor. Hispan.* (1861), i. p. 21.

of which agreed with those of *Cupressus lusitanica*. Dalzell and Gibson, in the "Supplement to the Bombay Flora" (1861), p. 83, mention the tree under the name of *Cupressus glauca*, and state that it is common in gardens, native and European.

Brandis in the "Forest Flora of India," p. 534, and Sir Joseph Hooker in the "Flora of British India" (1890), vol. v. p. 645, referring to Dalzell and Gibson as above cited, add that it is extensively cultivated in the Western Ghats, whence it was introduced into Portugal. If this be so, then the cultivation of the tree in the Ghats must be of considerable antiquity. Other authors, among them Carrière, go so far as to say that the tree has been introduced into Mexico, and there given rise to new varieties. But in all probability this statement rests upon an inaccurate identification of specimens, and the Mexican plants referred to this species are doubtless distinct indigenous species.

The resemblance between *C. sempervirens*, *C. torulosa*, and *C. lusitanica* is sufficiently close to justify the inference that they may all have originated from a common stock, and at a relatively not very remote period. Still at the present time the three forms mentioned appear to me to have a title to be considered "good species," and, in spite of the recognised variability of *C. sempervirens*, I have not met with a specimen that could fairly be confounded with *C. lusitanica*. This, however, is a matter of opinion and individual judgment. It may be well, therefore, to append a description of the true "Cedar of Goa," and to point out the distinctive features which appear to separate it from *C. sempervirens* and from *C. torulosa*. It must, however, be admitted that no form of words is adequate to convey the differences sometimes observable by the eye.

C. LUSITANICA, Miller. Lambert, Pinus, tab. xxxii. folio edit.

Branches terete, covered with reddish-brown bark. Herbaceous branchlets densely crowded or loose, somewhat regularly pinnately branched, arching, slender, 4-cornered. Leaves on the older branches variable, approximate, broadly ovate, subulate, acuminate, appressed, slightly spreading at the tips. Leaves on the herbaceous shoots about 2 mill. long, 4-ranked, erecto-patent, oblong-lanceolate, somewhat obtuse, slightly convex at the back, and with a central gland, margins concave. Male catkins terminal, 2-3 mill. long, yellow, oblong or subglobose. Scales continuous with the leaves, suborbicular or subtriangular, acute

at the apex. Cones scattered, stalked (stalk 5-6 mill. long), subglobose, about 1 cent. diam., brown, covered with a glaucous bloom. Scales woody, subangular, rugose, with a markedly projecting umbo, and the tip of the otherwise connate bract free, somewhat leafy and recurved. Seeds numerous, obovate, oblong, winged, brown, with a gland near the base.

This description is taken from specimens sent to me by Prof. Henriques from Bussaco. The Cedar of Goa, as cultivated since 1750 at Kilmacurragh and in many British and Continental gardens, is much more loosely branched, but the form of the leaves, the male catkins, and the cones are nearly identical in form, though differing in their smaller size from the Portuguese specimens. A specimen sent to me by M. Naudin as *C. pendula glauca* is also of loose open habit, and has cones as much as 15 mill. in diameter.

C. TORULOSA, from the mountains of North-West India, differs from *C. lusitanica*, more especially in its leaves, which are shorter, thicker, blunter, and more convex. The convex sides of the lateral leaves, which are inflexed at the tips, give the branchlets a beaded appearance, from which the species takes its name. The cones are more frequently clustered, sessile or very shortly stalked, less glaucous, whilst the bract and the umbo of the scale are much less prominent.

C. SEMPERVIRENS, though very variable, is distinguishable from *C. lusitanica* by its ultimate branchlets, which are less angular, its leaves less convex, smaller and about 1 mill. long. The cones have generally shorter stalks, and are usually larger, more oblong, greyish or brownish, often shining, but not glaucous. The bosses of the scales are generally pyramidal and pointed, and the tips of the bracts are not so leafy as in *C. lusitanica*.

DECIDUOUS TREES AND SHRUBS OF JAPAN.

By Mr. JAMES H. VEITCH, F.R.H.S.

[Read March 13, 1894.]

No country or region within the north temperate zone possesses within so limited an area an arborescent flora so rich and so varied in its ingredients as Japan, and as a natural consequence from no other country of like extent have our gardens and parks been enriched with so many and so beautiful trees and shrubs, both evergreen and deciduous, as have been introduced from the realm of the Mikado. Without doubt this exuberant vegetation is due to the geographical position of the country, combined with its configuration, its extensive seaboard, and its remarkable mountain systems, all of which conduce in every way to the presence and growth of a luxuriant vegetation, and which, moreover, aided by a climate that to a European may seem at times too humid for personal comfort, favours in the highest degree the productiveness of the soil. As a comparison of the climates of Great Britain and Japan has already been fully discussed, and their most obvious differences as affecting the hardiness in this country of the trees and shrubs indigenous to Japan have been brought under the notice of the Fellows of the Society, I need not here make further remarks on the subject than to refer you to the Report of the Conifer Conference, page 22, where the differences are stated.

During my recent travels in Japan I was fortunate enough to meet with Professor Sargent, Director of the Arnold Arboretum at Harvard, near Boston, U.S.A., one of the greatest living authorities on dendrology, and with him I made several excursions to localities of especial interest as regards the indigenous trees and shrubs found wild. The richest deciduous forests are in the hilly districts lying in the centre of the main island. Here, at elevations of from 2,000 to 5,000 feet, the number of species to be found within the space of a few miles is very great, and to a somewhat less extent similar phenomena occur in parts of Hokkaido, the northern island. In these districts, owing to the great humidity of the climate, the arborescent vegetation attains a luxuriousness and rapidity of growth unknown in this country.

Since his return to Harvard, Professor Sargent has published a remarkable and most interesting series of notes on the Forest Flora of Japan in the American *Garden and Forest*, a paper which has a considerable circulation in Great Britain. To what he has written in a general way I have very little to add. In responding to the invitation of the Council to lay before you my impressions of the wonderful forest flora of Japan, I shall confine my remarks chiefly to those trees and shrubs that are as yet scarcely known, or are still but rarely seen, in British Arboreta. I shall pass without notice a large number of trees and shrubs of Japanese origin that have long been in our midst, making exception only in the case of such species as appear to me to have not yet received the attention they deserve.

To begin with the Magnolia family. Eight species of Magnolia are met with in Japan, of which one at least, *M. conspicua*, is an introduced plant from China. Of these eight, five, or perhaps six, have been introduced into this country, now fortunately including *M. hypoleuca*, by far the finest of the arborescent forms. I consider this species not only the handsomest of the Magnolias, but one of the handsomest deciduous trees in Japan. Both in the main island and in Hokkaido, in the hill forests it attains a height of from 80 to 100 feet, its large leaves forming a pyramid of foliage of striking beauty and often quite symmetrical. Its flowers, which are produced in large numbers on the adult trees, are delightfully fragrant, and when fully expanded are from 6 to 7 inches in diameter. Scarcely less handsome are its cones of brilliant scarlet fruit, 6 to 8 inches long, standing in autumn above the broad obovate leaves. *M. hypoleuca* may be compared with the North American species, *M. tripetala*, so long known in British gardens as the Umbrella Magnolia, but in my opinion it will prove superior to it as an ornamental tree. Of smaller size than *M. hypoleuca* is *M. Kobus*, which attains a height of 80 feet in the neighbourhood of Sapparo, where it is common. The flowers, which appear early, are smaller than those of *M. hypoleuca*, as are also the leaves; the tree itself forms a narrow pyramid with short slender branches, but becomes somewhat round-topped when old. In the United States and in this country its hardiness has been proved. The third arborescent species is *M. salicifolia*, a small slender tree, 15 to 20 feet high. I met with it in the extreme north of the main island, at an

elevation of 2,000 to 3,000 feet. The flowers I did not see, but from the quantity of fruit produced it must be a very free-flowering kind, and from the size of the buds it is not rash to assume that the blooms are correspondingly large. This species is new to the British Arboretum. Of the shrubby species, *M. stellata* and *M. parviflora* should have a place in every garden.

Belonging to the same family as the Magnolias is *Cercidophyllum japonicum*, the largest of the deciduous trees of Japan. It occurs in its finest state in Hokkaido, where at the base of the low hill slopes, in damp situations, it attains a height of from 90 to 100 feet, with a trunk 3 to 4 feet in diameter; but more commonly it sends up a number of stems, which are united together into a stout trunk 8 to 10 feet through, but which gradually diverge at a comparatively short distance from the ground. It occurs almost throughout the whole length of the islands, and when growing at high elevations it forms a much smaller tree, rapidly diminishing in size as it spreads southwards, till it becomes no larger than a good-sized bush. It is in this form that it has been introduced into British gardens.

Two Limes are indigenous to Japan. One is like the small-leaved British species *Tilia cordata*; the other, *Tilia Miqueliana*, is a large tree, from 70 to 80 feet high, with a trunk 4 to 5 feet in diameter. It has not so stately an aspect as our European Lime, owing perhaps to its always being found crowded with other trees. It is still very rare in British Arboreta, where it is known under the name of *Tilia mandshurica*; it is common in the northern island, Hokkaido, and is quite hardy.

Before turning to the Acers, which form the most conspicuous feature of the deciduous forests, there is one sapindaceous tree that should not be passed unnoticed; this is *Æsculus turbinatus*, the stateliest and largest of all the Horse Chestnuts, evidently destined to become better known in this country than it is at present, for it grows freely, and as a park tree it will be found a most desirable subject, being quite distinct from the common species. This noble tree owes its escape from destruction mainly to the inaccessible positions in which it is found. As distinguished from our common Horse Chestnut, its foliage is of a darker hue, its floral racemes are longer and more slender, and its pale yellow flowers are smaller.

Respecting the Maples, nearly all of which are now well known,

I need not say much, but would like to draw your attention to two rare species, *Acer nikkoense* and *A. Myabei*, the latter of which has only been known to science since 1888. *A. nikkoense* is in some respects the more striking tree of the two; it attains a height of from 40 to 50 feet, with a trunk of 15 to 18 inches in diameter; its ternate leaves, with dark green upper and pale grey-green lower surface, which turn to a brilliant scarlet in the autumn, cannot fail to make it one of the most ornamental of Maples: these characters, together with the broad "keys" of its fruit, mark it as thoroughly distinct. Although this tree has a wide distribution in probably all the islands, it is by no means common; it is much isolated, standing singly at intervals, but why so cannot yet be explained. I saw only one bearing seed, and this was literally covered with its characteristic fruit. Maries sent it to us about fifteen years ago, and one tree at Coombe Wood, and probably the only one in England, is now about 15 feet high; thus far it confirms the high opinion I formed of it in its native country. *Acer Myabei*, discovered by Professor Myabe, the eminent Japanese botanist attached to the college at Sapparo, is not much unlike the Norway Maple, *A. platanoides*. It attains a height of from 30 to 40 feet, and forms a broad round-topped handsome tree that will in all probability prove hardy in this country.

Of other rarer Maples, *Acer Tschonoski*, a small bushy tree from 15 to 20 feet high, and *A. capillipes*, with foliage turning to deep scarlet in autumn, are still desiderata in this country. I have seen the latter seed freely, and a good quantity was obtained, but, unfortunately, the seed appears to lose its vitality during the long transmission from its native country.

When we consider that upwards of twenty-five species of *Acer* are found in Japan, and that several of these species have diverged into many varieties, it is not surprising that the Maples should form so prominent an ingredient of the deciduous forests of the country as they do. The remarkable fact concerning them is, that so many forms, with foliage so strikingly different, should be aggregated within so limited an area. If we glance through the various forms of leaves in *A. argutum*, *A. carpiniifolium*, *A. cratægifolium*, *A. trifidum*, *A. palmatum*, *A. nikkoense*, and compare them with the commoner forms as seen in *A. pictum*, *A. rufinerve*, *A. diabolicum*, and others, we

cannot avoid feeling astonished at the wonderful development of the genus in that part of the world, nor can we help looking forward with confidence, strongly supported by our own experience, that these Maples are destined to impart to our landscape and gardens some of the most pleasing and distinct features yet obtained from any group of exotic trees and shrubs.

A remarkable tree in many respects is *Meliosma myriantha*, which, although at present practically unknown in the gardens and parks of this country, can scarcely fail to become popular. It belongs to a small family of tropical trees and shrubs, chiefly Asiatic, but which is also represented in Tropical America by a very few species. In Japan, the Flora of which is so remarkable for the number of tropical genera represented in it, *Meliosma myriantha* is a rare tree. I saw it in limited numbers in the Nikko district and in a small grove on the eastern slopes of the thickly wooded base of Mount Chokaizan, on the extreme north-west coast. It is an exceedingly graceful tree, of somewhat low stature, rarely exceeding from 25 to 30 feet in height, with a slender trunk, wide-spreading branches, and large thin leaves, 8 inches long and 3 inches broad, of a most pleasing tint. Under cultivation at Tokyo, its somewhat loose drooping habit becomes modified into a more rigid, close, and pyramidal outline.

Among the *Rhus* family, *R. vernicifera*, the Japanese Lacquer-tree, but really an introduced plant from China, has played a conspicuous part in the development of the mechanical arts in China and Japan. *R. semi-alata* is remarkable for its brilliant autumn tints, but surpassed in this respect perhaps by *R. trichocarpa*, whose orange and scarlet foliage always attracts notice in the autumn, even amidst such exceptional surroundings as those I have attempted to describe. *R. succedanea* is an economic curiosity, as the source from which the Japanese obtained their principal supply of artificial light before the introduction of Russian and American petroleum.

It has often been remarked that Japan is peculiarly poor in leguminous trees and shrubs, a remark, of course, equally applicable to our own country. One of the handsomest representatives of the order is *Gleditschia japonica*, a tree 60 to 70 feet high, whose branches are armed with spines 3 inches long. As seen on the mountains of Central Japan, and under

cultivation in the neighbourhood of the towns and large cities, it is, I think, a more picturesque tree than the Chinese and American species with which we are familiar in this country. Among the most beautiful leguminous climbers and wall shrubs of Japanese origin *Indigofera decora*, *Cæsalpinia japonica*, the white and double-flowered varieties of *Wistaria sinensis*, and *Lespedeza bicolor* are well worthy of a place in every garden where room can be found for them.

In the Rose family, some beautiful trees are cultivated for their flowers as well as for their fruit. Foremost among these is *Prunus Mume*, which, as Professor Sargent has pointed out, is not a Plum but an Apricot. I saw it in Corea planted as a shade tree along the borders of the high roads. That it is a native of Corea is certain, and thence it was doubtless originally introduced into Japan, where it has become one of the most popular garden trees in the country. Under cultivation *Prunus Mume* produces white, rose-coloured, and red flowers, sometimes double, which appear before the leaves in February and March. *Prunus Mume* is planted in almost every Japanese garden of any pretensions; it is often dwarfed and pruned in a very curious manner, and in that state it is cultivated in pots. Surpassing in importance *Prunus Mume* as an ornamental tree is *P. pseudo-Cerasus*, probably the largest rosaceous tree in Japan. I have alluded in the *Gardeners' Chronicle* to the striking effect produced by groups and avenues of this tree when in full bloom. It is about the middle of April that it is in its glory. At Mukojima a row along the river bank a mile long, in some places faced by a row on the opposite side of the road, presents a floral sight not easy to forget; it is like walking under a ceiling of the softest pink. Around Tokyo it is to be seen everywhere; anything more beautiful during the few days it is in flower would be difficult to find. It much resembles on superficial view the wild Cherry of our woods, but it is larger, and the flowers are pink instead of white. In the early autumn it is conspicuous in the landscape for its deep scarlet leaves, which show their warm tints before those of the Acers begin to change; for this cause alone it is worthy of the attention of the landscape gardener. Its fruit is valueless.

The Japanese Flora includes about a dozen species of *Pyrus*, of which three are common to Europe. Of the rest, our old

favourite *Pyrus japonica*, with its beautiful varieties, still holds a foremost place among our early-flowering shrubs. I ought not to omit mention of two other rosaceous shrubs, which, although introduced some time ago, are not very often seen. I allude to *Stephanandra flexuosa* and *Rhodotypos kerrioides*, the last named a near relative of one of the oldest of old garden friends, *Kerria japonica*. Of the true Roses there is not much to be said; most of the best have long been in cultivation; two or three others are more recent introductions, and from the un-introduced wild kinds not much, I think, can be expected in a horticultural sense.

In the Saxifrage family, the Hydrangeas, of which there are some seven or eight species, are as conspicuous a feature in Japanese floral decorations as they are in ours, but of these species at least four would scarcely, I think, be welcomed in British gardens. It may not perhaps be generally known that *Hydrangea paniculata* in favourable situations on the hills of Hokkaido forms a tree 25 to 30 feet high. The allied monotypic *Schizophragma hydrangeoides* is a vigorous rambling plant useful for covering large spaces. Among the Hamamelids, *Hamamelis arborea* and *H. japonica* are certainly handsomer shrubs than the American type species, *H. virginica*. *Corylopsis pauciflora* and *C. spicata* are worthy of mention as dwarf early-flowering shrubs that may be found useful for forcing, especially the first named. In this family is the curious but little known monotypic *Disanthus cercidifolius*, a spreading shrub 8 to 10 feet high: the small dark purple flowers appear in October, when the fruit is developed from the flowers of the preceding year, and when the leaves begin to put on their rich autumn tints of vinous red and gold.

Among the Japanese Araliads there are seven species of *Acanthopanax*; at least one of these would be an interesting addition to the British Arboretum. I allude to *Acanthopanax sciadophylloides*, a tree sometimes attaining a height of 40 feet in the mountain forests of Nikko and on Mount Hakkoda in Northern Honda; its handsome foliage would impart a distinct feature to our park scenery. Another species is *A. ricinifolium* cultivated in British gardens under the name of *Aralia Maximowiczii*; in the forests of Hokkaido it is a large tree from 60 to 80 feet high, with a trunk of 4 to 5 feet in diameter.

Of the six or seven species of *Cornus* found in Japan, *C. Kousa* (sometimes called *Benthamia japonica*) and *C. brachypoda* are now well established in British gardens, and always admired when seen in flower. The Honeysuckle family, represented by seven genera in Japan, has supplied some of our most beautiful shrubs and climbers, notably *Viburnum plicatum* and *Lonicera flexuosa*. In the *Styrax* family, including *Symplocos*, *Styrax*, and *Pterostyrax*, by far the most important, horticulturally speaking, are the two species of *Styrax*, of which one, *S. Obassia*, with its noble foliage and lovely white flowers, is still unfortunately very scarce. Professor Sargent compares *Pterostyrax hispidum* with the North American Snowdrop-tree (*Halesia tetraptera*), to which it is inferior as an ornamental tree, although well worthy of a place for park and landscape effect. And here I may mention the Japanese Ash, *Fraxinus mandshurica*, common in the low grounds and swamps of the northern island, where it rises to a height of 100 feet, with a straight stem 3 to 4 feet in diameter. Its locality and surroundings are suggestive of its use as a marsh tree in Great Britain. The second Japanese Ash, *Fraxinus pubinervis*, is as yet but little known.

Passing over a long series of Natural Orders, consisting chiefly of herbaceous types, I proceed to bring under your notice some of the finest of Japanese timber trees. Foremost among these is a member of the Elm family, *Zelkova Keaki*, which is considered the most valuable in the country. It attains a height of from 80 to 100 feet, with a trunk often 8 to 9 feet in diameter, which is crowned by a compact head of dense foliage. Owing to the presence of a crowded population, and the great value of the tree for timber, it is rarely met with in a wild state. The same may be said of many other trees of any economic value; many such have been planted by the inhabitants for centuries past, so that when specimens of great age and size are seen it is not always possible to say whether their presence is due to the hand of nature or of man. It is only in the most remote districts difficult of access that the best timber trees of Japan are found wild. It is scarcely necessary to add that *Zelkova Keaki* was introduced into this country many years ago by my father, John Gould Veitch, under the name of *Planera acuminata*; the earliest seedlings must now have attained a considerable size, and it

would be both useful and interesting to know something of their progress and present condition.

Turning to the Oaks, which form one of the principal elements of the Japanese forests, one of the best known in British gardens is *Quercus dentata*, more familiarly recognised as *Q. Daimio*, remarkable for its long ovate deeply serrate lobed leaves. In the extreme north of the central island and around Sapparo it grows on dry gravelly slopes at no great elevation above the sea. I met with *Q. dentata* in quantity near Fukuro, at the base of Chokaizan, on the north-west coast, growing at low elevations; it sometimes attains a height of 60 feet, but, owing to its irregular spreading habit when old, it is not so attractive as in its younger state. The Oaks of the northern island are totally different from the evergreen Oaks of the south; they are highly ornamental trees for the landscape, and also valuable for their timber. The best of these are *Quercus crispula* and *Q. grosseserrata*, which form a considerable part of the forest growth around Volcano Bay. Here are many fine specimens of both species—that is, if they are specifically distinct, for in general appearance they are very similar. Even so accurate an observer as Professor Sargent considers them indistinguishable in habit, bark, and foliage; the cup and acorn of *Q. crispula* are, however, different from those of *Q. grosseserrata*; both are grand trees, of from 80 to 100 feet high, that should receive a trial in this country. Another species, *Quercus glandulifera*, is the common Oak of the high mountains of Central Japan, and probably the most widely distributed of all. Compared with those just mentioned, it is a tree of much smaller dimensions, affording in this respect and in its foliage a striking contrast to the massive aspect of *Q. dentata*.

The Hornbeams of Japan include several species, some of which are doubtful natives. Unquestionably the finest representative of the genus is *Carpinus cordata*, a common forest tree of Central Hokkaido, growing with Oaks, Ashes, Maples, Walnuts, &c., and attaining a height of about 40 feet, with a trunk 18 inches in diameter. Its leaves are from 6 to 7 inches long, and often 3 inches broad at the widest part; they turn to a brilliant golden yellow in autumn, and these, with the large drooping catkins 5 to 6 inches long, and the narrow pointed buds, form together a striking *ensemble* that renders this tree well worthy of a place in the British Arboretum. Other native species of

Hornbeam are *Carpinus laxiflora*, *C. japonica*, and *C. yezoensis*, the last named seen only in cultivation in the neighbourhood of Tokyo.

Pterocarya rhoifolia is a large and important tree, 60 to 80 feet high, with a straight trunk 2 to 3 feet in diameter; it occurs on the slopes of Mount Hakkoda up to 5,000 feet elevation. At the time of my visit it was finely in fruit, and its large pinnate leaves were beginning to assume their autumn tints. Other important trees are *Juglans Sieboldiana*, *Alnus japonica*, *Alnus firma*, and *Platycarya strobilacea*, but I must refrain from wearying you with details, and conclude my remarks with a brief notice of two Birches that are so unlike any we are accustomed to see in British plantations that their introduction will be welcomed by all lovers of arborescent vegetation; of both these species I obtained a quantity of seed. One is *Betula Ermani*, common on the higher slopes of the mountains of the central island; it is well distinguished by the bright orange-coloured bark of the principal branches, in strong contrast to the white of the trunk. Superior to this as an ornamental tree is *Betula Maximowiczii*, which is really one of the finest trees of the northern forest, and perhaps one of the most beautiful of all Birches, certainly one of the most distinct; it not infrequently attains a height of 80 to 90 feet, with a trunk 2 to 3 feet in diameter, covered with a beautifully variegated grey and orange bark, a piece of which may now be seen in the Museum at Kew. The leaves are longer than those of any Birch known, being from 4 to 6 inches long, and almost as broad.

I have endeavoured to bring under your notice some of the leading features of the forest flora of Japan, very imperfectly it is true, but enough, I hope, to awaken some interest in the subject, and to show what a wealth of material yet remains available for the improvement and further adornment of our park and landscape scenery.

RARE TREES AND SHRUBS IN THE ARNOLD ARBORETUM, U.S.A.

By Mons. MAURICE DE VILMORIN, F.R.H.S.

[Read March 27, 1894.]

THE subject I have to deal with is in itself a very extensive one ; and if I had been expected to give all the interesting circumstances about the origin and organisation of the Arnold Arboretum, as well as the history of the introduction and properties and a brief description of the plants contained therein, I should at once have declined a task so far beyond my capabilities. It will, I think, be much more useful to say a few words on the actual condition of the grounds at the Arboretum (after recalling very briefly its past history), and then to take a general survey of the whole collection, passing by a great many plants, and stopping only where a peculiarly fine or vigorous or rare tree or shrub would cause a visitor to pause and make inquiry of his guide about it. The questions asked about a plant would be as to its earliness ; the way to get it into flower ; how to distinguish it from closely related species ; how much frost it will bear, and so on.

The Arnold Arboretum is situated some six miles south-west of the city of Boston ; the ground is much broken in every direction by gentle or steep slopes, so that sunny and warm or cool and moist places are to be found in different parts of the enclosure. The summer is very warm, but the air is not so dry as it is some miles more inland. In winter the thermometer will fall almost every year to 10 degrees below zero (Fahrenheit), and the common Yew, the *Thuja gigantea*, &c., are not proof against such extremes, and as a consequence it may be safely said that all the plants successfully cultivated there will stand the winter in any place in England or France.

I need only remind you very briefly of the gift by Arnold ; the agreement made by his friend and trustee, Emerson, with the Corporation of the Harvard University ; the appointment of Professor C. S. Sargent as director ; the liberality of the Director and of Mr. Hunnewell in providing for a special building for the museum and library ; the beginning of the organisation ; the gathering together of living or dried specimens from all

parts of the world; the first laying out and planting in a methodical manner of the botanical collection.

Some years ago an agreement was made between the city of Boston and Harvard University, giving the city the right of including the grounds of the Arnold Arboretum in their system of parks, on the condition of providing a police force and making the roads and drives through the Arboretum. This work is now very nearly finished. The boggy places have been trenched, the soil has been in most places deeply worked, and is almost all ready for actual planting. Except a few acres that will be kept in their present state of a wild and natural woodland copse, and the space required for propagating and nursery purposes, all the grounds are to be planted according to the following general principles: The botanical families will be planted as much as possible in their natural sequence, but advantage will be taken of the differences of soil and aspect to place each genus or species in as good a situation as possible so far as light and soil and water are concerned, the most prominent places being reserved for the American specimens of a genus. Of every large-growing tree five to ten specimens are planted, one receiving more space and a more suitable position to enable it to grow into a specimen tree, and the others being more or less closely grouped.

Nearly one-third of the ground is now planted in this way. The making of the roads and the necessary working and trenching of the land in many places prevented any quicker advancement of the work. Indeed, the amount of work already done is enormous. Many species of trees are already 20 feet high, and the number of the different shrubs in some of the beds or natural-looking thickets is to be counted by hundreds of thousands in this park of 175 acres.

Where the actual plantations have been made, the natural outgrowth of the soil in wild plants and shrubs is permitted to cover the ground, in order to shelter and protect the newly planted trees and keep the soil cool and moist. *Kalmia angustifolia*, *Myrica asplenifolia*, &c., quickly spring up and form thick carpets, proving that the soil is nearly destitute of limestone, which is a great advantage for the cultivation of an extensive collection of woody plants, as a great many of them, especially in the leguminous or conifer orders, would be injured by the presence of any appreciable amount of chalk or limestone in the soil.

In speaking of the shrubs of the Arnold Arboretum I shall sometimes mention specimens I noticed in Professor Sargent's private grounds at Brookline, one mile nearer Boston, as some rare and beautiful examples there are older than those in the Arboretum. Some interesting trees and shrubs I noted also in Mr. Hunnewell's grounds near Wolseley, a splendid and beautifully kept garden, but also of comparatively recent date—not more than thirty years old at most.

The time of my visit was the end of June and beginning of July—the very best time, according to the Professor, to go through the Arboretum.

The future position of the Magnolia tribe will be a very favourable one, close to the Museum building and to the entrance nearest Boston. The spot has just been deeply ploughed and trenched. Magnolias are as yet only to be met with as young specimens in the Botanical School of the Arboretum. Among these the best, as to the number and symmetry of the limbs and the density of foliage, seems to be the *M. Kobus* from Japan. The tree is very hardy. I saw it in Meehan's Nurseries, near Philadelphia, grafted on *M. acuminata*. A new introduction from Japan is *Magnolia parviflora*. In France the newly imported plants flowered on their arrival, but have refused to flower since. At the Arboretum the specimens are grafted on *M. acuminata*, and bloom every year. The *Cercidiphyllum* is a beautiful member of the Magnolia family. With us in France it seldom succeeds well, the new shoots being often cut by the late spring frosts, or the young tree scorched and burned by the summer sun. Here, near Boston, I found splendid young trees, 18 to 20 feet high, and without a dead leaf upon them. They are planted on the northern side of the groves, and in such position they are branched nearly to the base, without a single fault, and are very beautiful. The choice of such a position is quite logical. The tree will germinate and develop in its native country in dense and moist woodlands, and never have any part exposed to the sun except quite the top branches. The rainfall in Japan is heavy, and in our drier climates it is absolutely necessary in some way to prevent the excessive dryness of the soil, and even of the atmosphere near the tree, and the sun from scorching the young stem; hence a northern aspect and the preservation of all the lower branches are desirable. The climate of New England seems

to suit very well a beautiful Japanese and Chinese climber, *Actinidia polygama*. In the vicinity of Boston a good many houses have fine specimens of it on trellis work with a north exposure. The drooping and fine foliated shoots are very rich and effective. Facing the south *Clematis paniculata* is sometimes planted. This is a late bloomer, and the plentiful white flowers will not open before late in August or September. Except for Southern England this creeper will probably not be as interesting as it is on the other side of the ocean.

A good many Barberries are cultivated in the Arboretum. One of the finest is *Berberis Thunbergii*. Some fine figures of the plants were given in the *Garden and Forest* and other horticultural papers. But the bush far surpasses even the illustrations, and the specimen growing in the nook of Professor Sargent's rock garden is indeed a marvel.

Like *Cercidiphyllums* and *Gordonias*, the *Stuartias* (or *Stewartias*) are difficult to manage. I am not acquainted with any successful cultivator of *Stuartias* in France, and for my own part I ultimately lost all my plants. Even in America I saw few really good cultivated specimens of the native species, and in the Arboretum they are not to be compared as to the symmetry of branches, the abundance and healthy appearance of the foliage, with a beautiful new species introduced there from Japan. The plant was as yet without a specific name at the time of my visit; it was 10 feet high, in the best possible condition, and flower-buds were already visible.

A good many Maples are to be found in the Arboretum and in the gardens of the Sargent family. Nearly all the East American species have been long known in Europe, and I pass them by; but I was surprised to see so many forms of the Japanese *Acer polymorphum* near Boston. Some of them are very hardy. Another very fine small tree is *Acer* or *Negundo cissifolium*, also a Japanese (see fig. 1, p. 26). The pointed leaves make a very dense but graceful mass of foliage. The colour is very good, the old leaves being green, and the new ones, and the top of the shoots, brownish-red. *Acer truncatum*, with its fine slender shoots and loose five-lobed leaves, is also very graceful, and of the same colour in early summer as the last.

The use of the *Ampelopsis Veitchii* as an ornament for city houses is so general that the plant has received in New



PRUNUS PENDULA,

Fig. 1.

NEGUNDO CIRSIFOLIUM.

England the nickname of Boston Ivy. Another graceful *Ampelopsis* (not self-clinging) in the Arboretum is *A. serjaniæfolia*; the foliage is gracefully cut. The plant is, in the cold climate of Boston, truly herbaceous, the shoots being produced every spring from long tuberous roots, and killed down every winter. Of the true vines (*Vitis*) some beautiful species are noteworthy. The hardiness of *Vitis Romaneti* and of *Vitis amurensis* is complete; the latter beautifully covers with its large, thick, and richly coloured leaves the pillars of a rustic door in the Professor's garden. One special attraction of the Arboretum is the *Vitis palmata* (*Vitis rubra* of Michaux), rediscovered by Engelmann; the foliage is indeed quite ornamental. Of *Phellodendron amurense* a good many specimens exist; the origin of the seedlings or young plants being different, so are the specimens; in fact the tree seems to be disposed to sport a great deal, and of some twenty trees growing in a small spot in the nurseries, four distinctly different forms could be singled out. The finest and most curious one has a truly tuberous bark that seems as fine-grained and elastic as that of the Cork Oak. This tree is of a beautiful golden yellow in the autumn.

Of the *Zanthoxylums* the native species (*Z. americanum*) is indeed a fine bush, 3 to 4 feet high, very ornamental, and quite hardy. Of the *Celastrus*, the Japanese species, *C. articulata*, is the finest as far as foliage and habit are concerned; but the common one, *C. scandens*, has finer and larger fruits, yellow and red. *C. (Orixa) japonica* grows as a round, and rather flattened, light green bush.

Ilex glabra is successfully grown, but it will not be found much farther inland, and the vicinity of the coast seems to be necessary for it. In winter, branches laden with the small black fruits are sold in immense quantity. I saw it very gay with its numerous flowers. *Ilex decidua*, with small scarlet fruits, *Ilex verticillata*, and *I. monticola*, some of them better known as Prinos, are also fine shrubs, and well worth having. They thrive best in deep moist sands mixed with peat, and in a sheltered position.

Of the numerous and graceful set of the American *Ceanothus* the Arboretum can show but few, most of the species being of Western America, where the winter is far less severe.

Of the Sumach family, many and interesting species are

grown. What a pity it is the Poisonous Oak should be so dangerous a plant! No vine, I should think, is to be compared to it in the way in which, on the rich or moist soils of the Eastern States, it clothes the otherwise bare trunks of the trees with its twining shoots, covered with glossy foliage and large picturesque leaves, so lovely in the autumn. For artistic beauty the plant is indeed as highly endowed as for deadly properties, the berry being as attractive as it is poisonous. The *Rhus canadensis*, with beautiful, thick, nicely cut leaves, is worthy of being better known; it is a low bush, and quite proof against drought. *Rhus aromatica*, with leaves bearing a close resemblance to the Field Maple, is also a very fine bush, that will make good hedges, or for the front of plantations, shrubberies, or groves.

In the leguminous tribe I will mention the Amorphas, and especially *A. canescens*. The name is sometimes given in mistake by nurserymen to some varieties of *A. fruticosa*, which are very common. The true *A. canescens* of Nuttall is a low, somewhat stiff, grey-leaved, late-blooming shrub, but the contrast of the whitish colour of the foliage, the dark purple of the flowers, and the gold of the stamens is quite a sight, and every amateur would, I am sure, consider this shrub a great attraction in his collection.

Wistarias are much grown in New England gardens, and sometimes as potted shrubs, to be placed out of doors in large casks. For this purpose they are propagated from cuttings, and kept as standards, 5 to 10 feet high, when by pruning they are made to branch and to become bushy. Fine specimens require ten years' preparation. In the Arboretum the time of flowering is as follows: *W. sinensis* is closely followed by *W. japonica*, then comes *W. multijuga*, and the American *W. frutescens* will close the series, the fine variety *W. frutescens magnifica* being the latest. Compared to *W. sinensis*, *W. japonica* is more glossy in the foliage, and the flower seems smaller; otherwise there is but little difference in their appearance.

Two species of *Prunus* are very interesting—one, *Prunus pendula* (see fig. 1, p. 26), for its gracefully drooping mode of branching; the other, *Prunus pumila*, for its ability to thrive in poor sandy soils, its hardiness, and edible fruits. Its common name in the Central and Northern States is Sand-Cherry, the small fruit being about the size of a small Cherry, and the stalk long and thin.

The colour is dark red ; many are sour, but some varieties are but slightly acid, or even quite sweet, and the American pomologists are confident of getting some still more improved varieties in time. The erect form of this species—the Chicago form, as they call it—is the best. A close ally, *P. Baseyi*, or it may be a new form of *P. pumila*, was recently found in the Rocky Mountains.

Prunus maritima, 10 feet high, is very fine when in flower ; *Prunus americanus* and *P. nigra* have small brilliant fruits, and some varieties are quite edible. The Cherry-like fruits of *P. alleghenensis* make excellent preserves, and the plant is a very free bloomer ; so also are *P. pendula* and *P. Miqueliana*, both Japanese or Chinese species.

Among the tall Spiræas I noticed as a fine bush *S. Tobolskiana*. It is in the Sorbifolia section (Sorbaria), but the foliage is more plicate. One recommendation of it is that it flowers ten or twelve days later than *S. Lindleyana*.

A good many botanical species of the Rose are to be seen, not in the Arboretum, but in other places round Boston. Near the track of the Boston and Albany Railroad many banks and beds are planted with a single form of *R. humilis*, an elegant little plant, very graceful, and of a chaste delicacy of colour. It may be a little deficient in leaf, so that the soil is not as completely hidden as with our garden Roses ; a double form of this species is a charming little thing of a very light pink colour, nearly blush. *Rosa Watsoniana*, with deeply cut, almost dissected leaves, is very curious and pretty, even without flowers. It appears to be a very good stock for grafting. A new species from Cashmere was under observation, as yet without a recognised name. It seemed to me different from my own seedlings from the same country. The American species, *pisocarpa*, *setigera*, *foliosa*, *nitida*, and *lucida*, are now known to many European amateurs. They are generally noticeable by the holding of their bright berries far into the winter. Some interesting crosses were made in the Arboretum between *R. rugosa* and *R. microphylla*, between *R. Vichuraiana* and *R. multiflora*, &c. Some of the hybrids are described or mentioned in the later volumes of the *Garden and Forest*.

Among the Pyrus the finest specimens are in the Professor's garden in Brookline, being 12 to 15 years old. The newest to

me in general appearance was the *P. betulifolia* from China. The general shape is roundish, the shoots being long and more or less curved; the foliage is greyish, the leaves far apart, but plentiful enough; the fruits are very small. In *Pyrus sinensis* the fruits are smaller still, being no larger than Olives (in June they were like large Peas). Judging by the profusion of the berries, the tree must be quite a sight when in flower.

Of the Mock Oranges there is a fine collection. One of the most singular is the plant known as Falconiera, or *Philadelphus Falconieri*. The narrow petals give the flowering trusses a very curious appearance; *P. Zeyheri* is very near to it, if not identical. *P. speciosissimus* seems to be related to *grandiflorus*; it is very large and very early flowering. *P. coronarius Columbianus* is large and late. *P. Lewisii*, from the Rocky Mountains, is also a late flowerer. *Philadelphus microphyllus*, from the same place, is already distributed, and has even been hybridised in our gardens.

The Chinese Hydrangea succeeds very well in the moist parts of the Arboretum. So does *H. radiata*, with leaves silvered underneath. *H. arborescens* of the Middle States is hardly a shrub, but rather a small tree.

Among the Cornus, a rare species, *Cornus Kousa* or *Benthamia japonica*, seems to be very promising. It is a close ally to the American flowering Dogwoods, *Cornus florida* and *Cornus Nuttallii*. The Japanese species has bracts two inches across, and more pointed than in *C. florida*. The effect is very good, and the plant seems vigorous and healthy.

Among the Diervillas or Weigelas, the two American species are in marked contrast with the Asiatic ones, by reason of the modest colour of the flower—greenish-yellow and red—but the abundance of the branches and the lustrous green abundant foliage make the two species, *D. sessiliflora* and *D. Lonicera*, excellent bushes for shrubberies and clumps.

Two Loniceras I noticed as beautifully fruited. *L. hispida* has charming fruits in pairs, coral coloured, more than half an inch long and half as broad. *L. involucrata*, from the States, is late-flowering, and bears fine berries, red and orange coloured. *L. Maximowiczii*, too, has carmine-coloured fruits in pairs, and is a fine shrub.

Of the Vacciniæ and Ericæ there is a very large collection

in the Arboretum, and it would be surprising if it were not so, as such a number of species of these genera are American, hardy, and highly adapted for the partially moist and even peaty soil of the place. Of the Whortleberries many species are interesting, from the small *Vaccinium pennsylvanicum* carpeting the sandy woods, to the larger Carolinian *V. hirsutum*, with hairy fruits. *V. stamineum* has a good place in the collection, and deservedly so. The Tangleberry (*V. frondosum*) bears fine round blue berries. The Huckleberries are interesting, both for the culinary uses of the fruits and the elegance of the foliage. The Cox Huckleberry, from the Northern States, is late-flowering (*Gaylussacia dumosa*). The commoner *G. resinosa* has small branchlets, and small light green leaves; it is a very good plant for moist and peaty sands.

The Andromedas are numerous and thriving. The Japanese species (*A. japonica*) succeeds well, and seems to be very hardy. This plant has found its way into many gardens, and will be more and more appreciated. It has begun to sport, and will probably give some fine varieties. Of the American species, the well-known *A. speciosa** and its fine variety *pulverulenta* are very attractive. The tall *A. arborea*,† sometimes 25 feet high, was a surprise to me. *Leucothoë Catesbæi* and *Cassandra calyculata* are also well deserving of cultivation, not to be replaced hastily by novelties.

Some of the Rhododendrons are very distinct. *R. Vaseyi* has a very singular pointed leaf in the way of the Weigelas, but very thick; *R. punctatum* is very small leaved; *R. brachycarpum*, quite hardy, has leaves rusty and downy underneath, with pale rose flowers: all are interesting.

Somewhat to my surprise, I found fine specimens of *Styrax japonica*; a small tree in the Botanic Gardens of the Harvard University was white with flowers. Near Paris it succeeds poorly, but I should think it is more injured by the dryness of the atmosphere than by the cold, as it is considered hardy in Boston.

One of the chief objects of my visit to the Arboretum was to see the Chinese and Japanese Lilacs (*Ligustrina* or *Syringa*) in flower. Far from being disappointed, my anticipations were far surpassed by the beauty of these lovely little trees. There

* Now *Zenobia speciosa*.

† Now *Oxydendrum arboreum*.

are very fine specimens, 12 to 15 feet high, in the Arboretum; the oldest were planted in the Professor's grounds. A young



FIG. 2.—SYRINGA JAPONICA.

tree of *S. japonica* (see fig. 2) is 15 to 18 feet high; many others are nearly as large, and fast growing. The branches of

this species are rather strong and firm, the leaves large, and the trusses of flowers enormous. The time of flowering is about the end of June. *S. amurensis* has smaller wood and smaller leaves, and is rather earlier. *S. pekinensis* is very graceful, with large shoots, thin and incurved, and very light and elegant inflorescence.

Of true Lilacs there is a good collection. *S. Emodi* of nurseries is known as *S. villosa* var. *hymalaica*; the Chinese form is the better, and is entitled to be considered as the type of the species.

Some beautiful specimens of *Catalpa speciosa* at Mr. Hunnewell's were in full bloom. This splendid tree has very large flowers ten days earlier than *C. bignonioides*, and it has more erect branches. I have had flowering specimens in France for three years, and it succeeds even in warm and rather dry places.

Pyramidal Oaks thrive near Boston; near Paris they are injured, and in our worst winters sometimes killed. I suppose that most of our French Pyramidal Oaks are seedlings from the few old trees found near Orthez (Basses-Pyrénées), and are somewhat tender, while another hardier but otherwise similar form comes from Germany. The many biennial-fruiting American Oaks are extensively planted; they are, in fact, quite a feature of the Arboretum, but they are too well known to require mention here. Of the Asiatic Oaks I noted *Q. sinensis*, a very close ally to, if not a form of, *Q. serrata* of Japan; the leaves are very much like a Sweet Chestnut, but whitish underneath and firmer. *Q. macranthera*, from the Caucasus, seems to grow very well, and to make a fine tree.

Fagus asplenifolia has a regular profusion of beautiful branchlets, and this peculiarity is often utilised in New England for making big pruned hedges, which become very dense. They have no weak places, and the lightness of the leafage corrects to a great extent the dulness of the massive form.

The Hickories and other nuts are among the finest American forest trees, and the noblest of the magnificent series are planted in prominent places. *Carya alba*, *sulcata*, and *porcina* are magnificent trees. So is *Juglans nigra*.

On private property near the northern entrance to the grounds I noticed a very singular Walnut. The likeness to the

English was quite apparent, and still the distinctive characters were very obvious. In the opinion of Professor Sargent the tree is a hybrid of *Juglans regia* with some American species, probably *Carya sulcata*, in which case it is similar to the origin of *J. Vilmoriniana*, a probable hybrid of *J. nigra* and *J. regia*. The Professor knows other specimens of natural hybrid origin.

The small *Kalmia angustifolia* and *Myrica* (*Comptonia*) *asplenifolia* are found everywhere wild in the grounds, and I wondered not a little to find the latter so thoroughly established in an often dry and poor soil, and holding its own against the other spontaneous bushes, whilst we in Europe take so much trouble to cultivate it in peat, and then sometimes fail to succeed. Is it to the vicinity of the sea and the somewhat moist atmosphere that we are to ascribe this vitality, or are we killing the plant by coddling it too much? In Boston they plant it in poor sand, and simply let it alone.

The beautiful Japanese *Betula corylifolia* is as fine in the Arboretum as I ever saw it, even at Kew. The yellowish tint of the shoots and golden hue of the foliage, along with its healthy appearance, make it quite distinct and fine. Good use is made of two small or trailing American species, *B. humilis* and *B. pumila*. They are excellent for covering banks and forming large beds.

Of the Conifers large-sized specimens are not to be seen in the Arboretum. Their section of the grounds being a new addition, they are as yet only from 6 to 15 feet high. In the Firs and Spruces, the Japanese species, *Abies brachyphylla*, *A. Veitchii*, *Picea Alcockiana*, and the American *P. pungens*, seem to promise very well. At Mr. Hunnewell's I saw a fine young tree of *Abies sachalinensis* and a large and beautiful blue Douglas Fir 35 feet high. In the same place there is a bluish *Larix leptolepis* of about the same size. The beautiful Western Larch has been planted in choice places in the Arboretum; the finest are those grafted on *L. leptolepis*. A singular creeping form of *Thuja canadensis* was found in a wood near Boston; it is very curious, and has been propagated by the New York and Rochester nurserymen. A great favourite in New England is *Thuja japonica* or *Thuyopsis Standishii*. It stands the winter better than the American *T. gigantea*, Nutt. (*T. Lobbii*, hort.), and the branching habit is more compact in the Japanese tree. The Japanese *Taxus cuspidata* is also preferred to the *T. baccata*, which would often be injured

by the frost. *Taxus canadensis* is also hardy, but too trailing so that the Japanese Yew is considered the best. *Retinospora aurea* is much used, sometimes as an isolated bush, and often for pruned hedges; it is quite hardy and enduring.

Such is the brief record of my notes among the new and rare trees and shrubs at and around the Arnold Arboretum. Much could be said also of the common shrubs at the same place, as large beds are made there of the very commonest materials, and these are often not the least effective. Good examples of similar plantations are to be seen in the Boston new-laid parks and elsewhere.

HYBRID NARCISSI.

By Rev. G. H. ENGLEHEART, M.A., F.R.H.S.

[Read April 10, 1894.]

LITTLE apology is needed for the fragmentary and tentative character of a paper which touches upon the subject of Hybridity. For, notwithstanding the great and growing attention devoted to it during the last half-century, it will need the piecemeal monographs of generations, and a master-mind for their co-ordination, to disentangle and reduce this vast and complex study to ascertained law. Especially to the worker among bulbous plants knowledge of this kind must come very slowly. The experiments and inferences of a dozen years have but made me feel how much I require the outcome of at least another dozen in order to prepare a paper worthy to be called instructive. Seedling Narcissi take from four to six years to bloom, and usually two or three more to develop their mature character of size, form, and colour. And they must be flowered in hundreds at least, since an abundance not only of time but of material is necessary for the examination of particulars enough for the establishment of trustworthy inductions. A few gleanings from this small specialist's work of mine I can lay before you to-day; but the flowering of my plants becomes fuller and fuller of interest and enlightenment spring by spring, and the observations of the present season, while they sometimes

corroborate, quite as often modify or cause the abandonment of the conclusions of the past. Some few years hence, *Deo volente*, perhaps the Society will allow me the attempt to come before it with a discourse fuller of compact and useful information.

The hybridist who goes about his work thoughtfully has, I take it, three chief objects in view:—

(1) The improvement of existing varieties.

(2) The advancement of our knowledge of the phenomena of cross-fertilisation. He will not be content with the acquirement of a “rule-of-thumb” *art* of producing improved plants, but by systematising and recording his methods will help onwards the endeavour to reduce cross-fertilisation to an orderly *science*.

(3) The verification or correction, under the light of his own experiments, of the work of his predecessors in the same field; also the examination of the work of Nature. The raisers of cross-bred Orchids have again and again reproduced artificially, and thus assigned with certainty to their parentage, natural hybrids whose origin was before unknown or merely guessed at.

When, a good many years ago, I sowed my first Narcissus seed, it needed some boldness to aim at excelling the beautiful flowers bequeathed to us by former workers, and, from the florist’s point of view, the sentiment “*pereant qui ante nos nostra fecerunt*” was almost excusable. But from the scientific side it was evident that much remained to be accomplished. Messrs. Leeds and Backhouse, from whom, with a few notable exceptions, we inherit this wealth of “Daffodils,” which has changed the face of our gardens and markets in spring, have left a very imperfect record of their methods in detail. Leeds, indeed, the author of half these flowers, has given us no clear information to speak of, and Backhouse, who raised the finest, in the short account contributed to the *Gardeners’ Chronicle* of June 10, 1865, seems to give a somewhat vague summary from memory rather than to draw from accurately kept notes. Thus he does not specify the parentage of his remarkable productions “Emperor” and “Empress” more particularly than to say they were the offspring of *N. bicolor*, a name which itself denotes more than one form, and some other variety of *N. pseudo-Narcissus*. Indeed, although they have been produced within living memory, the *precise* origin even of whole classes or

sections of these "Weardale" and "Longford Bridge" Narcissi, *e.g.* of *N. Barri*, *Burbidgei*, *Leedsi*, *Nelsoni*, has been an open question. Therefore I proposed to myself the task of attempting to "make" all these flowers over again, in order to determine with certainty their origin. The gradual achievement of this undertaking has been, to myself at least, extremely full of interest, and successful beyond my expectation. I have raised, and from time to time exhibited together with their parents, flowers not only typical of every group of these modern hybrids, but in many cases actual reproductions and fac-similes of individual varieties, *e.g.* of *N. incomparabilis* "Stella" and *Leedsi* "Acis," both from Backhouse's collection. Many of my seedling flowers, if "shuffled up" with a handful of Messrs. Barr's named kinds, could scarcely be again distinguished from them. A considerable representative gathering is here on the table in your sight.

In another task, too, I have been enabled to succeed, namely, that of carrying out more fully a series of experiments in hybridisation partly accomplished and partly only suggested by Dean Herbert. One direction of Herbert's great and versatile powers was to the appreciation, long before it was appreciated elsewhere, of the importance of, and of the future in store for, the science of cross-fertilisation. In passing, I would say that he has not yet been accorded his full rank as an acute original thinker and investigator. He was singularly modern in his scientific conceptions; for instance, of the experimental method, and in such *dicta* as that a species "appeared to him to differ not at all from a well-marked local variety," and that "artificial hybridisation, far from confusing botanical classification, was the surest test of scientific division." His experiments, of which the Society has the records, together with his original drawings, in its archives, provided most valuable material for Darwin, with whose name his is not unworthy to stand.

Probably Herbert's familiarity with the Amaryllidaceæ as a special study led him to choose the Narcissi for his experiments. The choice was happy, for, while they are almost all hardy and will, with remarkably few exceptions, intercross to almost infinite combinations, their range of form and colour is large enough to supply well-marked derivation and modification in the hybrids, and yet much simpler and easier to trace when thus transmitted

than, *e.g.* in the Orchids. With an acuteness which we can now hardly estimate, for of such knowledge

Most can raise the flowers now,
For all have got the seed,

Herbert surmised that certain so-called species of *Narcissus* were natural hybrids, and established the fact in two cases, of *N. incomparabilis* and *N. odorus*, by actual experiment. All this ground traversed or indicated by Herbert I have gone over, with the following results. Nearly all the crosses have been effected both ways, *i.e.* by using every flower employed both as seed-parent and as pollen-parent. This alternation causes certain differences of form and colour, which will presently be mentioned, but are insufficient to affect the identity of the resulting "species" now spoken of:—

- | | | |
|--------------------------------|-----------------------|------------------------------|
| (1) <i>N. pseudo-Narcissus</i> | × <i>N. poeticus</i> | = <i>N. incomparabilis</i> . |
| (2) <i>N. pseudo-Narcissus</i> | × <i>N. jonquilla</i> | = <i>N. odorus</i> . |
| (3) <i>N. tazetta</i> | × <i>N. jonquilla</i> | = <i>N. intermedius</i> . |
| (4) <i>N. tazetta</i> | × <i>N. poeticus</i> | = <i>N. biflorus</i> . |
| (5) <i>N. poeticus</i> | × <i>N. moschatus</i> | = <i>N. montanus</i> . |
| (6) <i>N. poeticus</i> | × <i>N. jonquilla</i> | = <i>N. gracilis</i> . |
| (7) <i>N. bicolor</i> | × <i>N. poeticus</i> | = <i>N. Macleayi</i> . |

All these I have raised not only once, but in successive generations for greater surety. Occasionally my crosses have produced not only types, but very counterparts of these wild or ancient garden Narcissi. Thus from collected *N. muticus* of the Pyrenees, planted and seeded in my garden, × *N. poeticus*, I have hybrids which differ in no respect from the wild *N. Bernardi*, a local Pyrenean form of *N. incomparabilis*. *N. major* × *N. jonquilla* has resulted in a form of *N. odorus* new to me until Messrs. Barr lately showed me a variety obtained from its wild habitat in (I understand) the South of France, where, I can have no doubt, *N. major* and *N. jonquilla* must grow together. As to *N. biflorus*, which has by some botanists been rightly assigned to *N. tazetta* × *N. poeticus*, while by others it has been considered of doubtful origin, it is curious that Herbert, in his "Amaryllidaceæ," sees "no reason to think it a hybrid production, for it does not exhibit appearances between those of any Narcissean genera, or even species." It is undoubtedly intermediate between

tazetta and *poeticus*,* as is proved by flowers here on the table and raised in my garden from the cross. You will observe that while one of my seedling varieties closely resembles the ordinary *biflorus* of our gardens, others are almost identical with "Muzart orientalis," "Bazelman major," and "Bazelman minor," three Narcissi commonly classed with the *tazetta* or *polyanthus* Narcissus, but long since suspected of the hybrid source to which they must now be assigned. From the white trumpet-Daffodils, *N. cernuus*, *albicans*, &c., and *N. poeticus*, I have flowered a large number of seedlings which practically reproduce all the forms of *N. Leedsii* now in cultivation, and among them flowers not separable from *N. montanus*. I feel sure that this was named and brought to our gardens by some traveller who chanced upon it in a mountainous—perhaps Pyrenean—locality where *N. moschatus* grew in juxtaposition with *N. poeticus*. From *N. p. ornatus* × *N. jonquilla* I have a plant which, on account of the precocity of this particular *poeticus*, blooms earlier than *N. gracilis*, but in all other respects so closely resembles it, even in its very distinct clove-like scent, as to fully satisfy me of its origin. With regard to the singular little Narcissus *N. Macleayi*, I must own that none of my seedlings are small enough to claim complete identity with it. But from a variety of *N. bicolor* with cylindrical corona, commonly imported from Holland, and *N. poeticus verbanensis*, a dwarf mountain form from North Italy, I have what may be called *N. Nelsoni* in miniature, scarcely "one size larger" than *N. Macleayi*, and not otherwise differing from it. It is no uncommon occurrence for a seedling to be much smaller than either of its parents, and *N. Macleayi* may be an example of such diminution. Another wild hybrid, not known to Herbert, but of quite recent introduction, a Narcissus first found in the vicinity of Oporto by Mr. A. W. Tait, and named by him *N. Johnstoni*, was thought to have originated between *N. triandrus* and *N. pseudo-Narcissus*, its characters being intermediate, and both these species being indigenous in Portugal. Subsequently other varieties of *N. Johnstoni* were discovered in the Spanish Peninsula by Mr. Peter Barr, and are now in

* Two days after this paper was read I received a communication from Mr. Peter Barr, at that time on a botanical tour, stating that in the neighbourhood of Montpellier, and again near Quillan, he had found *N. biflorus* in abundance growing between wild *N. poeticus* and *tazetta*. With his letter came a large series of the flowers.—G. H. E.

cultivation. Being unable to obtain seed from *N. Johnstoni*, I could not test its parentage analytically, but from crosses effected between trumpet-Daffodils and *N. triandrus* I have raised the flowers here before you, and others, which have put the origin of the plant beyond question. This experiment has brought me a double satisfaction, for it has not only solved a doubt, but given birth to a new and extremely beautiful race of garden Narcissi—pendulous, Fuchsia-like flowers of waxy substance and refined colouring, which vary from pure white to delicate creamy tones of yellow.

I will now return to the garden forms of modern production, and state succinctly the results of my inquiry into their origin. I have proceeded, whenever possible, both analytically and synthetically, and by this double method have often secured double proof. For example, the Leeds and Backhouse seedlings included several kinds of pale trumpet Daffodils, such as *cernuus pulcher*, "F. W. Burbidge," and others, presumably intermediate between the true white Daffodils and yellow sorts. From self-fertilised seed of these pale trumpets I have obtained, sometimes from the same pod, both pure white and wholly yellow flowers, a reversion, or breaking-up into the original elements, which points clearly to this parentage. Again, by intercrossing white and yellow Daffodils I have raised pale seedlings which exactly match these Leeds and Backhouse kinds. The two proofs together are conclusive. As already stated, from *N. muticus* × *N. poeticus* I have produced *N. Bernardi*. My friend Mr. Wolley Dod has completed the evidence by sending me a remarkable series of flowers, ranging in both outward form and internal structure from *poeticus* through *Bernardi* to *muticus*. These came from one sowing of self-fertilised seed, gathered in his garden from *N. Bernardi*.

All the flowers grouped under the name *N. incomparabilis* are undoubtedly intermediate between the very variable *N. pseudo-Narcissus*, Ajax, or trumpet Daffodil, and *N. poeticus*. *N. Nelsoni* and *Backhousei* really fall under the same heading, the only distinction being that in their case the Ajax parent is *N. bicolor*. Of these two forms have long been cultivated in Holland and England, the one, to which I have already referred, having a cylindrical crown of stout substance, which in cross-fertilisation accounts for the form of flower seen in *N. Nelsoni* and

N. Macleayi; the other has a more expanded, funnel-like crown, which has caused the *Backhousei* form of *N. incomparabilis*. These effects I have observed in my own seedlings, but I must also say that a variety of *N. bicolor* such as "Empress" or "Horsfieldi" crossed with *N. poeticus* will give both *Nelsoni* and *Backhousei*.

The denomination *N. Barri* might without disadvantage be dropped, and the flowers now under it merged in *N. incomparabilis*. Many of them differ from *incomparabilis* but little in shortness of corona, and as to their origin I find they come from the same cross with it, and commonly from the same seed-pod. The group *N. Burbidgei*, however, is distinct both in its more decided reduction of corona and in its parentage. I have raised it in quantity and variety from the progeny of *N. pseudo-Narcissus* and *N. poeticus* crossed again with the latter, and believe that all the *N. Burbidgei* enumerated in Messrs. Barr's catalogue had that origin. My seedlings all show a fixed limit to the modification of internal structure caused by the first cross. If to the eye, without dissection, any *N. incomparabilis*-like flower has evidently biseriate stamens, *i.e.* if three of the anthers are *visibly* set well below the others, as in *N. poeticus*, it is the result of a secondary cross. I have found this simple test to be quite unailing. In the cross *N. pseudo-Narcissus* \times *N. poeticus*, the latter, especially when made the seed-parent, occasionally leaves the former unchanged in colour and intact in form except for a very slight shortening or clipping, so to speak, of the corona. This, I am persuaded, is the derivation of the group *N. Humei*. The outcome of the white trumpet Daffodils and *N. poeticus* is the class *N. Leedsi*. These parents, we know, were employed by Herbert, Leeds, and Backhouse. They also made use of *N. montanus*, itself a product of the same cross, in conjunction with white trumpets and with *N. poeticus*, thus obtaining the more drooping forms of *N. Leedsi* which were once classed as *elegans* and *galanthiflorus*. The division *N. tridymus* has its rise from *N. pseudo-Narcissus* \times *N. tazetta*. Of this I have several examples among my seedlings, and Messrs. Veitch have raised and exhibited it in considerable variety.

I have remarked that the cross *N. pseudo-Narcissus* \times *N. poeticus* embraces a large proportion of these hybrids. To it are due the sections *N. incomparabilis*, *Barri*, *Leedsi*, *Humei*

Nelsoni, *Backhousei*. This extension is primarily owing to the many degrees of form and colour which are presented by the yellow, the bicolor, and the white Daffodils included in *N. pseudo-Narcissus*. But the consequences of this cross differ to a certain extent according as the Daffodil and the *poeticus* are respectively used as male or as female parent. The great number of seedlings which I have now had the opportunity of examining enables me to state with confidence that, *on the whole*, the male is prepotent in determining both the form and the colour of the hybrid. In colour this is most marked. The cross *N. poeticus* (pollen) \times *N. pseudo-Narcissus* (seed) produces, in at least four cases out of five, forms of *N. incomparabilis* with *white* perianths, even where the *N. pseudo-Narcissus* is of a strong self-yellow. Out of the multitude of flowers of *N. incomparabilis* which have come to us from the Leeds and Backhouse collections, there are but very few with perianths of a decided yellow, as compared with those having white or pale perianths. The reason I believe to be this. It is more difficult to obtain hybrids from *N. poeticus* than by its pollen, since it is much more quickly self-fertilised on opening than the trumpet Daffodil. White-perianthed flowers, too, are the more attractive, and it is therefore probable that Leeds and Backhouse raised most of their *N. incomparabilis* from *N. pseudo-Narcissus* by pollen of *N. poeticus*, which order of cross-fertilisation has also the greater tendency to give the prized red edge or suffusion to the corona. In its influence upon form also the prepotence of the pollen-parent is sufficiently noticeable. Thus it is my experience that *N. poeticus* (pollen) \times *N. pseudo-Narcissus* (seed) gives *N. Barri* rather than *N. incomparabilis*, while the reversed cross gives a greater proportion of the latter longer-crowned form. Exceptions are abundant, but the rule is discernible where seedlings are grown in quantity. Some of the phenomena of hybridism in the Narcissi both throw light on their natural history and serve to break down their artificial divisions. Thus from the pure white Daffodils, not excepting even the Pyrenean *N. moschatus*, the whitest of all, crossed with *N. poeticus*, I have not only white *N. incomparabilis*, *i.e.* *N. Leedsi*, but also *N. incomparabilis* yellow both in corona and in perianth. Herbert remarked that the produce of *N. moschatus* was not always white. This must be an instance of atavism, and indi-

cates that *N. moschatus* is a white geographical development, not yet absolutely fixed, of an older yellow *Narcissus*.

A few other notes of observation may be of interest and some practical value to the hybridist. Sterility of hybrids does not obtain, in any general way, in the *Narcissi*. In my garden, on the borders of Hampshire and Wiltshire, there are few of the hybrids which do not yield good seed. Many varieties of *N. incomparabilis*, *Leedsi*, and *Burbidgei* bear a regular crop. Two consecutive hot springs have caused even *N. Johnstoni*, hitherto reputed sterile, to form large pods, promising ripe seed. Herbert, in his colder Yorkshire climate, found some kinds infertile in both ovules and pollen, which are with me abundantly fertile in both. So great is the effect of changed environment upon the reproductive power of plants that I am not prepared to disbelieve the statement, rejected by Herbert, that even the notoriously sterile *N. odoratus* has been recorded to ripen seed in Southern Italy. Many *Narcissi* bear seed under careful artificial fertilisation which rarely seed otherwise. In this way I have season after season obtained seed from *N. "Empress"* in some quantity, but a bed of some two or three hundred flowers, left purposely untouched on one occasion, did not afford a single seed. The variety of *N. poeticus* known as *N. p. verus* of Linnæus is rarely fruitful if not fertilised by hand, but every flower bears a pod if touched with pollen of *N. p. ornatus* or *N. p. poetarum*.

The microscope has been of assistance to me in this work. Noticing that the fine *incomparabilis* "Sir Watkin" was seldom self-fertilised, and that its pollen rarely fertilised other *Narcissi*, I magnified its pollen and found it very irregular and imperfect. Having thus learned that it must be applied to a flower often and plentifully to ensure the contact of some perfect grains, I have since succeeded in raising many seedlings by this pollen, and have found that some other pollens are similar and must be employed in the same fashion. My success in harvesting seed from *Narcissi* which appear to yield it seldom or never elsewhere is partly owing to my soil and climate, but may also be attributable to my practice of conveying pollen to the selected seed-parents not once only, but two or three times a day for several days, and thus making sure of its application at the moment when the stigma is in a receptive condition. That

the cross "has taken" is often evident by a visible change in the seed-pod from its normal shape and size, so that it is sometimes possible at the time of gathering to separate the cross-fertilised from the self-fertilised seed. Of late years I have been careful to obtain either pollen or the bulbs of my seed-parents from a distance, to ensure that differentiation which has been proved so beneficial in other plants, and can already see a resulting improvement in the character of my seedlings.

I must not discourse of the value of my own flowers from the florist's point of view, but may perhaps be allowed to point to my hybrids of *N. triandrus*, to such flowers as my "Albatross" and "Sea-gull," which constitute a somewhat distinct class, to my improved forms of *N. poeticus*, a beautiful race, which is as susceptible of improvement as the trumpet Daffodils, and to my hybrids of *double* Narcissi, as an argument that the potentialities of this fine spring flower are, for the painstaking hybridiser, by no means exhausted.

BOTANICAL EXPLORATION IN BORNEO.

By Mr. F. W. BURBIDGE, M.A., F.L.S., Curator of Trinity College
Botanical Gardens, Dublin.

[Read April 24, 1894.]

It seems a little presumptuous, perhaps, on my part to lecture on Bornean exploration, seeing that so much has been done by Sir Hugh Low, the friend and secretary of the late Sir James Brooke, or, as he was more familiarly called, "The Rajah of Sarawak." Rajah Brooke, Sir Hugh Low, and the present Sir Spencer St. John, after the Dutch, were really amongst the original explorers of Borneo, and to them is mainly due England's interest in the country, and the commercial importance of the Borneo of to-day.

To Sir Hugh Low we are especially indebted for one of the earliest and best of books* on the Sarawak territory, and it was he who originally discovered the noble flora of Kina Balu, and sent to Kew years ago specimens of the finest *Nepenthes* and *Orchids*

* Low's "Sarawak."

and other vegetation, and the very name of "Tuan Hillow" is a passport and household word in Borneo at the present time.

My own little share of Borean exploration took place during the years 1877 and 1878, and the main objects of my journey were the rare Orchids and Pitcher-plants or *Nepenthes*, and other tropical vegetation known or suspected to exist in that beautiful country. I am not sure that it is quite right and proper for travellers to write books or papers about where they have been and what they have seen and done; such works are really most infectious. If such books were suppressed or treated like dynamite, in all probability there would be a lesser number of our young people wanting to be explorers and collectors than there are, and I for one should not be before you to-day.

For in an evil moment I saw and read the "Himalayan Journals," by Dr. (now Sir) J. Hooker; "The Voyage of H.M.S. Beagle," by Charles Darwin; Mr. (now Sir) Hugh Low's "Sarawak"; Wallace's "Malay Archipelago," and St. John's "Life in the Forests of the Far East," and the influence of works like these is, I can assure you, too much for a boy to withstand who was born and bred in the heart of an English sporting county, and who was taught by his father to love everything that lives, and to admire and wonder at everything that grows. After deciding on my visit to Borneo, I became interested not only in books, but more especially in the living men and women who had been there, and in this way began my personal acquaintance with Dr. Alfred Russel Wallace, the late Miss Marianne North, and Sir Spencer St. John, all of whom gave me excellent advice and encouragement; indeed the only discord in my enthusiasm was in a note sent me by that veteran collector, Mr. Tom Lobb, and he said the natives of Borneo were "an infernal lot of liars and thieves," adding that he had seen enormous baskets full of the skulls of people they had murdered there for mere fun.

But I knew of many people having been murdered even in England, and so Mr. Lobb's note only served to whet my curiosity and expectations. Borneo is, roughly speaking, 10,000 miles away. Having insured your life and secured a suitable outfit, you get a berth on an ocean steamer either in London or Liverpool or Southampton, and off you go. If you are a good sailor the voyage is a pleasant one—rough in Biscay, smooth in the Mediterranean, dusty in the Suez Canal, and uncomfortably hot

in the Red Sea. The coaling port, Aden, may not delight you, but Ceylon or Penang will make you half frantic with delight, if the real traveller's "bee is in your bonnet," and the same is true of Singapore. It is an epoch in one's life to see and hear the free swing and cool rustle of Palm leaves for the first time in the open air, and even the Victorian Water Lily and the Sacred Nelumbium are none the less luxuriant and lovely as here seen in the open-air pools and canals. From Singapore you take a branch line to Borneo, a distance of about 700 miles, and when the steamer touches the wharf at Labuan you feel somewhat disappointed, for the coast-line is flat, and most of the low hills in sight have been denuded of their vegetation.

But, at any rate, you soon find that you have reached a part of the world where it is "always afternoon"; you have for once a climate with the heat and sunshine of eternal summer; you have come near the equator, where such things as frost and snow and winter are absolutely unknown. The sea is like burnished silver set with opals and pearls, and all around you lie, like emerald islets, hundreds of oases basking in a warm and shallow desert of sea. The main factors in tropical vegetation are simply Palms, Bamboos, Musas, Plantains or Bananas, and Tree Ferns, and these are the plants that really constitute the charm of all tropical scenery.

And when "at last," as Charles Kingsley has it, you land in Borneo itself, the luxuriance of its vegetation actually paralyses you, and you begin to doubt not only your own eyes, but your "mind's eye" as well. So robust and ample are stems and leaves, and so different the general aspect of many stove plants, that you don't recognise them as old hothouse friends.

Once and for ever you see how poor and puny all glass-house botany must ever appear to those whose lives have been spent in Nature's own great open-air conservatories.

Now you realise what tropical islands really are. Warmed by perpetual sunshine, deluged by copious rains, thrilled by electricity, they are really vast conservatories of beautiful vegetation, and at the same time enormous zoological gardens inhabited by gorgeous birds and rare and curious animals. Now and then, however, you are suddenly pulled up and brought back home, as it were. For example, you suddenly notice the great red man-like monkey, the orang-outang or "wild man of the woods,"

eating his breakfast off your host's choicest Mangoes or Bananas, and as he looks at you with a glance recognisant, benign and human, you feel that irresistible impulse of our Western civilisation, viz. to step forward and smile while you ejaculate those inane syllables, "I—I believe I have met you before!"

Now, if you want any statistics of Borneo you can find them in Whitaker's Almanack or in Hazell's Annual in five minutes when you get home, and I shall not weary you with such details here; but I may say that Borneo is about 800 miles long by 600 miles broad at its widest part, and that its area is considerably more than that of Great Britain and Ireland. The population is under 2,000,000, so that there is plenty of elbow room, and land and food are obtainable at a minimum cost in labour or capital. One of the chiefs there offered me a fertile little valley of 500 acres or so, and his very pretty daughter, in return for a shot-gun and ammunition; and had the lady not been made a factor in the bargain, I think I should have been able to boast of my Bornean estate to-day. But these Bornean ladies have nasty little tricks, and one of their amusements is to poison their husbands or friends when they are offended at or tire of them.

The population, broadly speaking, consists of the Malays of the coast-line and the Dyaks or Borneans of the interior. The original Borneans do all the work, and the Malays (who are presumably the Arab conquerors, now and then mixed with Chinese blood) collect all they can from them in the shape of taxes; but when I was there I heard some whispers about "Borneo for the Borneans," and "Home Rule."

Brunei, the capital city of Borneo, is fifteen miles inland, and stands on a great inland lake. It is sometimes called the "Venice of the East," and is a water city of 20,000 inhabitants, and the houses are on piles over the water just as were the Swiss lake dwellings of centuries ago.

In Brunei all communication even between one house and another, or one little terrace and another, is by boat, and the native market held here every morning in boats is one of the most curious sights in the whole world. The Sultan, who has a ramshackle old palace or island here, is nominally the ruler of the country, but his real power is *nil*. The smaller gunboats of

our service can steam up the Brunei River and anchor about five yards from the Sultan's door, and, after the usual salute has been fired, the dusky potentate is quite amenable to the soft and gentle arts of diplomacy.

By the courtesy of H.M. Resident in the British colony of Labuan, I obtained a firman or passport from the Sultan to travel and collect plants and animals in his territory. I was always well received and aided by his subjects, but I suspect that the fact of my being accredited by the English Government officials had much to do with this attention.

Most of the excursions from Labuan were made by way of the rivers along the north-west coast.

This portion of Borneo at the time of my visits was in its primitive wild state. There were no horses or ponies, no roads except the rivers, no bridges, no English residents, not even a missionary, except one solitary old Roman Catholic priest in Labuan itself. I had to carry all necessaries, and trust to any native hut for lodgings at night.

The only beasts of burden available were black water-buffaloes, and very useful they are in crossing the streams and for carrying baggage.

Good native boats and native boatmen are to be had everywhere—near the coast and alongside the rivers inland.

The most critical and laborious portions of my travels were the two distinct expeditions made to the great mountain of Kina Balu, and the voyage to the main island of the Sulu Archipelago, a group about midway between Borneo and the Philippines.

Kina Balu is an enormous mountain lying inland off Gaya Bay. It is nearly 14,000 feet in height, and is remarkable for the rare and curious vegetation that clusters on its slopes and in its defiles.*

Apart from the rare Orchids and Ferns found only in this district, the mountain itself is the only known habitat of the giant *Nepenthes* figured long ago by Sir Joseph Hooker † and Sir S. St. John.‡ Here only can be seen the quaint *Nepenthes Lowii* with its flagon-shaped urns.

N. Edwardsiana, with pitchers of elegant form, 12 to 20 inches in length, and of a soft vermilion colour, also grows here. So

* Dr. Stapf, in *Trans. Linn. Soc. Bot. Ser. 2, iv. p. 69, &c.*

† *Trans. Linn. Soc. vol. xxii.*

‡ *Life in the Forests of the Far East.*

also does *N. Rajah*, with pitchers like quart jugs, in one of which, according to Sir S. St. John, a rat was found drowned.

Again, along with the last named, is also found *N. villosa*, with its rosy-red Peach-like urns so splendidly frilled (nat. hyb. *N. Harryana*). *N. Rajah* is a terrestrial plant, but all the other three named are epiphytal, at least in their full-grown or adult stages, and to see these noble species growing here, clambering over shrubs and low trees, their stems throwing out roots into the mossy branches, and their great coloured urns depending from every leaf, is certainly a sight to see once and think of with pleasure ever afterwards.

And yet to me as to Sir Hugh Low, Sir Spencer St. John, and also to my good friend Mr. P. C. M. Veitch, who was with me on my first ascent of this mountain, there will always be some little regret, since three out of these four remarkable *Nepenthes* yet remain unknown alive, save in their native fastnesses on Kina Balu.

On our visit to Kina Balu, Mr. Veitch and myself walked all the way there and back, with our twenty-six native followers, all armed. We did all our own cooking, and slept in the native houses at night. It took us six days from Gaya Bay to Kiau, the last village, which stands at an altitude of about 3,000 feet on the lower slopes of the mountain. At this village, which is at least thirty miles inland, we were surprised to find Coconut and Areca-nut Palms, Orange-trees, and Bananas all growing luxuriantly. Around the rubbish-heaps here we saw luxuriant thickets of *Rubus rosæfolius*, covered with red fruit like Raspberries.

The great *Nepenthes* grow in a zone between 5,000 and 10,000 feet in altitude, in the clouds in fact, and there are heavy rains every night. Even during the sunny part of the day, when it does not always rain, the bushes and undergrowth and moss-covered branches of the dwarf trees are always saturated with moisture.

Our lodging on the great south spur of the mountain itself was in a cave at between 9,000 and 10,000 feet, and here it was so chilly at night that we found rugs and blankets a comfort, even though we had a great wood fire at the entrance of the cavern. Another journey to the Mari Parie spur was made (altitude 4,000 feet), but here there was no cave,

and we slept on brushwood beds, covered by our waterproof sheets.

We took the headman from the last village and some of his people to guide us up the mountain, and were much struck by the paralysing influence that the cold mountain air had upon them. One man carried up a fowl as a present for us, and when we reached the cave it had collapsed, and we had to warm it at the fire to make sure it was alive before it was killed for our supper. This same man, "Kurow," once gave me a few practical hints on cooking as a fine art. He had found a wild cat in a trap, and proceeded to roast the beast close to our camp, on a wood fire, without any sort of preparation whatever. The smell was dreadful, the animal having been dead some time, and I remonstrated with him, saying that we took off the beast's coat and removed its inside before cooking it. "That wouldn't be nice," said he; "meat have no flavour; how you make it taste nice that way?" "Oh," I said, "sometimes we cut up herbs and make stuffing." "Yes," he said in triumph to my men, "he takes away the nice natural-flavoured stuffing, and then he must make up a nasty mess of leaves and things to put inside."

On the plains and near the coast in Borneo the climate is pretty hot, say 95° in the shade at mid-day during the dry monsoon. I never saw the temperature below 75° at night, and so when our Labuan men got up to 10,000 feet elevation they thought a temperature of 50° or 55° bitterly cold.

But, apart from the *Nepenthes*, there are many fine Orchids and whole groves of lovely *Rhododendrons*, including the great golden-flowered *Rhododendron Lowii*, Hook. fil., a splendid plant, and many forms of *R. rugosum*, *R. stenophyllum*, *R. ericoides*, and others unknown.

The terrestrial *Cœlogynes* at 9,000 feet, growing on the same plateau as *N. Rajah*, were especially beautiful, and of three or four distinct species. There is also here a dainty *Eria*-like Orchid, having spikes of white flowers resembling *Lily-of-the-Valley*.

On another spur, at 4,000 feet, we found the two forms of *Cypripedium Dayanum* named *Petri* and *Burbidgei* respectively by Reichenbach. Here also, near the Pinokok Falls, grows *Nepenthes Burbidgeæ*, with long stems and decurrent bases to its leaves. The pitchers resemble those of *N. Rafflesiana* in size

and shape, but are ivory-white in colour, blotched with soft rose, the urns being thin and translucent like egg-shell porcelain.

Higher up grows a *Dendrobium* with black-haired bulbs, 5 to 7 feet in height, and flowers larger than those of *D. formosum giganteum*.

Then, as one might expect in such a fairy-like bit of cloud-land, always saturated with the moisture of dew or nightly rains. the Ferns are really wonderful in their luxuriance and beauty.

According to Mr. Baker, of Kew, I am credited with having added over fifty species to the Fern flora of the island, and a list of them, as also of those from the Sulu Archipelago, is given in my "Gardens of the Sun."

All Ferns are beautiful as seen at their best in their native haunts, but I shall never forget the exquisite groves of Tree Ferns, the *Gleichenias* and *Davallias*, the *Lindsæas* with steel-blue fronds, the noble groups of *Dipteris Horsfieldii* and *D. biformis* clustering on rocks, and, above all, the crisp *Todea*-like fronds of *Trichomanes pluma* draping wet rocks and dangling in feathery masses from the stems and branches of low trees.

The people who inhabit the lower ranges of Kina Balu are called "Piasau Idán, or, literally, "Cocoa-nut villagers," and they are a sharp and sprightly set of pagans, their main beliefs apparently being in omens good or bad according to their own convenience. They, however, do possess at least a glimmer of some future state, for they say their ancestors live on Kina Balu along with their ghostly buffaloes, and they begged of me not to wander upon certain sites sacred to their manes. They cultivate Rice, Tobacco, *Caladium esculentum*, and a few other culinary herbs and fruits, such as Cocoa-nuts, Betel-nuts, and Oranges and Limes. They use the primitive* hand-loom of sticks (still in use for the weaving of saddle-girths in Brittany), and prefer their own strong cloth of the native "Lamba" fibre (*Curculigo latifolia*) to the cheap and heavily loaded cotton goods of Europe. The old order reigneth, the men doing the talking and fighting, and the women most of the work. The name Kina Balu means "Chinese widow," and is supposed to be an etymological remainder of a Chinese colony formerly existing in this locality.

* There is a specimen of my collecting in the Economic Museum at Kew, with native cloth and the native fibre.—F. W. B.

Now and then you see traces of Chinese ancestry amongst these people, who are clean and healthy and outspoken, as most mountain folk are elsewhere. Some of the young people are really beautiful in form and feature—like pale bronze statues, and the girls are especially winsome, but, alas! early child-bearing and hard field-work soon make withered, leather-skinned hags of them.

The language in general use, not only in Borneo but throughout the archipelago, is called "Malay." It is really the "lingua franca" used by residents in dealing with the natives, and everybody must learn it in order to get along satisfactorily. Malay is most expressive and easy to learn colloquially, and it is current everywhere near the coast, but when you get inland every tribe has a language or distinct dialect, and there Malay is of but little use, and one must take interpreters as well as guides.

But, as I said, nearly everybody learns the Malay tongue—Dutch, English, German, Italian, Spanish, or Chinese, it is all the same—the medium through which all business is done.

The mountains, or the primeval forests near to rivers, are, as a rule, the best collecting ground in Borneo, even if not also in other parts of the tropical world.

Most travellers talk a good deal about the "jungle," which is quite a different thing to the primeval forests of which I have spoken. A jungle is composed of the scrubby vegetation that springs up after a forest has been destroyed—a tangled mass of weedy growth of all kinds, and often a good cover for game, but rarely good for a plant-collector.

One of *the* sensations of a collector's life is entering into the mysterious stillness of a tropical forest for the first time. Tree trunks rising all around you, and overhead a dense leafy roof that excludes the sunshine. At your feet is a dense carpet of Ferns and Aroids and Gingerworts, and other leafy things—all of a singularly steel-blue shade of green that suggests moonlight; leafy things everywhere, but rarely anything in flower, except when, as now and then happens, you come to a river bank or to a clearing.

As a fact, the flowers and insects and birds, the snakes even, the tiger-cats and the monkeys—everything that loves sunlight and air is a hundred to two hundred feet above your head; and if you want a near view of the epiphytal vegetation you must either get

a native to climb up and fling them down, or you must cut down some of the most likely trees.

The duty of an explorer is to find things; he must be a real discoverer. Then when he knows where a good plant grows in quantity he can generally set native labour to do the mere collecting part of the business. Then comes the art of preparing the plants for the journey home. They may in the case of Orchids at rest—that is collected during the dry monsoon—be dried a little, and then packed in ventilated boxes ready for shipment.

Bulbs, tubers, stems, and roots, and many seeds, travel best in close cases or boxes of earth, moist it may be, but neither wet nor dry.

Leafy plants and tender herbaceous plants, Ferns, and Orchids not having pseudo-bulbs, such as *Anæctochili* and *Cypripedium*, must be carefully established in glass-roofed Wardian cases.

Phalænopsids especially do not carry well unless established for a year or so, *i.e.* well rooted on sections of Palm stems, or arranged in bamboos with cocoa-nut fibre, after which the plant-covered sticks are arranged in tall glass-roofed cases, so as to be carefully watched and watered, or aerated, on the voyage home.

Some seeds never germinate if once they get thoroughly dry, and the seeds of *Nepenthes Rajah* that germinated best at Chelsea were collected and carried home in damp sphagnum moss in a tightly corked and sealed glass jar.

As a broad rule, lowland, plain, or shore plants carry best, *i.e.* endure more hardships, and also grow much more freely in our hothouses at home, than do the plants from constantly cool and moist mountains in the tropics, like Kina Balu. The lowland plants have for centuries been accustomed, or educated let us say, to vicissitudes, to changes from floods or drought, calm or storm, while the mountain plants have never been subjected to extremes of heat or moisture. This is a fact that all collectors are well aware of, namely, that mountain plants grown for ages cool and moist all the year round will not withstand the vicissitudes and climatic extremes of the plain through which they must pass to the coast, and, even if they do this, the ordeal of passing through the Red Sea is too much for them.

This is true East and West alike. The pseudo-bulbous Orchids like *Odontoglossum crispum* carry fairly well, but not

so the chimeroid *Masdevallias*, which perish by the thousand when they are brought down to the hot plains near the coast.

Another point is that the Kina Balu plants do not grow well with us, and of this fact I think the great and at home most robust and luxuriant *Nepenthes Rajah* is an example. Messrs. Veitch raised it by the hundred, but could not grow it satisfactorily, try all they would, and the only healthy plant I know of to-day is that in the *Odontoglossum* house in the Royal Botanical Gardens at Glasnevin, in charge of my friend Mr. Fred. Moore.

My voyage to the then independent Sulu Archipelago was made in the *Far East*, a well-known little trading steamer from the port of Labuan. We stayed a month at Meimborg, and the Sultan gave me every assistance, and also a share of his princely hospitality. A passport was handed to me, and I had a white pony from the royal stables, which was in itself better than any firman, since no one is allowed to ride on a white pony in the island except the Sultan and his own friends, so that wherever I and the pony went we were well received and treated with every hospitality. Here I discovered the exquisite little *Phalænopsis Marie*, and the rosy-purple *Aërides Burbidgei*, also *Dendrobium Burbidgei*—all, alas! extremely rare to-day. Here also I found four new species of Ferns, viz. *Cyathea suluensis*, *Polypodium Oxydon*, *Pteris Treacheriana*, and *Polypodium Teysii*, all determined by Mr. Baker.

I was lucky in obtaining here also a new species of parroquet and a new jungle fowl, both named by Mr. Bowdler Sharpe, the specimens being in the Natural History Department of the British Museum.

Perhaps it may be allowable here to give a selection from the plants I was enabled to introduce *alive* to our gardens from the Far East:—

1. *Nepenthes Rajah*, by seed.
2. *Nepenthes bicalcarata*, stems in soil.
3. *N. Rafflesiana* v. *nivea*, by seed, both dry and moist.
4. *Pinanga Veitchii*, Wendland, in Ward's cases.
5. *Cypripedium Lawrenceanum*, fibre, in Ward's cases.
- ,, *Dayanum*, vars. *Petri* and *Burbidgei*.
6. *Jasminum gracillimum*, in soil, Ward's cases.
7. *Pothos celatocaulis*.
8. *Phalænopsis grandiflora*, Bornean var., cases.

9. *Phalænopsis Marie*, Sulu "Hill of Tears," cases.
10. *Aërides Burbidgei*, rosy sp., dead trees, cases.
11. *Dendrobium cerinum*, riverside route, K.B.
12. „ *Burbidgei*, forests Sulu, K.B.
13. *Bulbophyllum Leysianum* (Burb. MS.), Masdevallia like, K.B.
14. „ *mandibulare*, route to K.B.
15. *Cryptocoryne caudata*, Aroid, near streams, K.B.
16. *Gamogyne Burbidgei*, Aroid, near streams, K.B.
17. *Alocasia scabriuscula*.
18. „ *guttata*.
19. „ *pumila*.
20. *Piptospatha insignis*, N. E. Brown, gen. nov. sp. nov.
21. *Burbidgea nitida*, Hook f., Lawas R., N.W.B.
22. *Wormia Burbidgei*.

In conclusion, I may point out how much of plant collecting for our gardens has really been done by our most enterprising nurserymen. Of course we do not forget the collectors sent out many years ago from the Royal Gardens, Kew, nor those who, like Fortune and Douglas, Parkes, Hartweg, and others, were sent out by this Society in its earlier and more prosperous days. Still, the fact remains that our nurserymen have done most in the introduction of desirable garden vegetation. But I really think the Government should help us a little in this matter, by giving berths and accommodation in the Navy to accredited collectors in times of peace, and certainly no scientific expedition leaving our shores can be considered complete unless a good plant-collector is included on its staff. Fancy an expedition like that of H.M.S. *Challenger* without anyone specially qualified and authorised to send home seeds and living plants from the out-of-the-way places visited! If only one plant had been introduced, viz. the giant *Gunnera peltata* of Juan Fernandez, we should have felt well repaid.

To show what has been effected in this way we have only to remember the rich and interesting collections made by the late John Gould Veitch, who had naval facilities granted him when he made his expedition to Japan and China in 1860, and to the South Sea and Australia in 1864. Our Governments of to-day stick fast to all the old pomp and glory of war, but the new warfare is that of Science, and we have plenty of heroes and volunteers.

The old order was "battle, murder, and sudden death," but science is really "Peace on earth and goodwill to all mankind!" There are to-day hundreds of men ready to storm a breach or to lead a forlorn hope in scientific research, and for a beautiful thing, living or dead, they will ransack the remotest ends of the earth, regardless alike of dangers and privations of all kinds. Be it bird or beetle or butterfly, or Orchid, Palm, or Pitcher-plant, it is all the same to them. There is nothing sordid or self seeking about the real explorers or collectors—they are impelled by inner and not by outer considerations—and they are amongst the real soldiers of science, who take their lives in their hands, determined to do their best, not for themselves alone, but also for the benefit of humanity at large.

FLOWERING TREES AND SHRUBS.

By Mr. GEORGE NICHOLSON, A.L.S., F.R.H.S., Curator of the Royal Gardens, Kew.

[Read June 12, 1894.]

WITHIN the limits of half an hour it is manifestly impossible to do more than call attention to some of the less known trees and shrubs which can be grown in the open air in this country. A mere list of names could be drawn up which would occupy most of the time at my disposal, but such a list—though, perhaps, useful for purposes of reference—would be very tiresome to read, and much more tedious to listen to. I shall, therefore, confine myself for the most part to ornamental trees and shrubs which, in my opinion, are well worthy of much more extended cultivation than they now enjoy. Unless specially singled out for comment in the way of hardiness, it may be taken for granted that the plants are hardy in the neighbourhood of London and in the South of England generally. In all probability a large proportion would prove hardy much farther north, but I have not sufficient data to enable me to speak with certainty as to the behaviour of many of them except at Kew and in the neighbour-

hood of London. The mere omission, therefore, of numbers of very beautiful trees and shrubs must not be taken to mean that the ones mentioned in this paper are superior in any way to those not mentioned. More than half an hour could be profitably employed in a review of garden Roses—not Hybrid Perpetuals, Teas, and so on, but simply of the wild species, botanical varieties, and little-known hybrids.

After these remarks I proceed with the paper, merely stating that I take the natural orders in botanical sequence for the sake of convenience.

The Mangolia family contains a number of the most beautiful flowering trees and shrubs in existence. Fortunately, most of these are pretty well known; but the following Japanese species are recent arrivals in this country, and therefore not known to the vast majority of gardeners. *M. Watsoni* and *M. parviflora* are both very handsome plants, and, thanks to Messrs. Veitch, they have been introduced in considerable numbers; this firm exhibited flowers of both at the Temple Show. *M. hypoleuca* is a fairly fast-growing tree with noble leaves and showy white flowers. *M. compressa*—an evergreen species from Japan—has withstood at Kew, without being in the slightest degree affected by the cold, the rigours of the past winter (1893-4), and bids fair to be an acquisition. Visitors to the meeting held in this building more than a month ago will remember a very strange and abnormal member of the Magnolia family, a basket of cut shoots of which was exhibited by Messrs. Veitch. I refer to *Trochodendron aralioides*, figured in the *Gardeners' Chronicle*, an evergreen shrub with the twigs terminated by panicles or clusters of green flowers. This, like the Magnolias above named, is also Japanese.

The Berberis family contains but one genus of woody plants which is deserving of general recommendation. The following species of Berberis are well worth growing, even in select collections of flowering trees and shrubs. *B. angulosa* and *B. concinna* are both Himalayan: the former has rather large golden yellow flowers, produced singly from the axils of the leaves, and the latter is conspicuous on account of the silvery white of the lower surfaces of its small leaves. *B. congestiflora* is a Chilean plant introduced to cultivation by Messrs. Veitch, and figured some few years ago in the *Botanical Magazine* and in the

horticultural periodicals; when developed the long shoots, densely clothed with golden yellow flowers, make this a most desirable and very ornamental plant. *B. actinacantha* is another Chilian species almost as handsome, when well grown, as the favourite *B. Darwini*.

The family Bixineæ is principally a tropical one, but the two genera *Idesia* and *Azara* are worth mention in this paper. *Idesia polycarpa* is a Japanese tree of considerable stature in its native country. In England it does not appear to be long-lived, but it is worth growing on account of its handsome foliage and the pendulous panicles of yellow male flowers. The tree is diœcious (the female flowers are green), but are followed by enormous numbers of small orange-coloured fruits as large as peas. Like hosts of plants which are generally regarded as hardy, this is somewhat tender in a young state but if sheltered for a few years it appears to be able afterwards to dispense altogether with protection. I have seen large trees in Northern Italy in places where the winter cold is more severe than with us. Several of the Azaras make charming wall plants; perhaps the hardiest is *A. microphylla*, introduced from Chili by Messrs. Veitch. The habit of this is very graceful, and its small fragrant yellow flowers are produced in great profusion on established plants; it should be planted in sheltered places. It would be interesting to know how this species has fared at Belvoir Castle since April 1890, when the late Mr. W. Ingram read his paper on "Spring Flower Gardening." He says: "I should like to call special attention to that very handsome ever-green, *Azara microphylla*. It is now (at the beginning of April) in full bloom, but it makes its presence felt not by the attractive characters of its flowers, but by the wonderful fragrance they exhale. The garden is filled with an aroma resembling vanilla."

The *Camellia* family (*Ternstroemiaceæ*) furnishes us with the genus *Stuartia*, surely one of the most ornamental genera in cultivation. The Japanese *S. pseudo-Camellia* has been exhibited frequently before the Royal Horticultural Society, and the North American *S. virginica* and *S. pentagyna* are two of the most beautiful plants I know. Those who are familiar with the fine bush of *S. virginica* at Sion House do not need to be stimulated by any word of praise of this plant.

The Mallow family contains, in addition to *Hibiscus syriacus*,

which is too well known to need further mention, perhaps only one species of woody plants thoroughly worth growing. I allude to the New Zealand *Plagianthus Lyalli*, a hardy shrub or small tree with large Cherry-like blossoms; it makes an excellent wall plant at Kew, but grows in the open, and is not injured by frost.

Fremontia californica is the only member of the order *Sterculiaceæ* which calls for notice here. In this country it seems to be very short-lived, but the beauty of its flowers renders it worthy of a place on a wall, where it blossoms profusely. I have seen it thriving well as a bush in the open. It would be interesting to learn particulars of the oldest plants now in cultivation.

The Rue family does not furnish us with many hardy shrubs. *Choisya ternata*, well known as a delightful wall plant and an excellent subject for cultivation in pots, is somewhat tender in a young state, but sheltering during severe weather for a couple of years or so enables the plant to withstand afterwards our ordinary winters without protection in the open. Under such conditions, we have had the plant thriving and flowering freely as a bush at Kew. *Skimmias* are worthy of mention. The true *S. japonica* (formerly known under the name of *S. oblata*) is one of the best of all evergreens for smoky grounds; attention has been called to its value in this respect by Dr. Masters. *Pseudægle sepiaria*, or *Citrus trifoliata*, is nearly allied to the Orange. In the South of England this is quite hardy. The Rev. Canon Ellacombe, in his charming garden at Bitton, has a plant which has fruited; in the neighbourhood of London the plant flowers freely in the open, but does not fruit.

From the Buckthorn family we may select the Christ's Thorn (*Paliurus aculeatus*), a pretty bush or small tree, hardy in the neighbourhood of London. The buckler-shaped fruit is curious. *Ceanothus* is worthy of special mention. Many of the species are too tender for our climate unless they are cultivated as wall plants, but the wealth of flowers and their colour make them desirable garden plants. *C. rigidus* was a sheet of blue a month or more ago at Kew; at present *C. papillosus*, exhibited to-day, is a worthy successor. Neither can be depended upon as bush plants near London. *C. americanus* makes charming masses of delicate flowers, white or white tinged with blush colour; this

only grows about 2 feet high, and at Kew succeeds perfectly in the open. Some of the garden forms or hybrids derived from *C. azureus* make fine bushes, and flower profusely in the open. Gloire de Versailles and Marie Simon are two of the best. *Rhamnus libanoticus* is conspicuous by reason of its handsome foliage, which assumes a rich bronzy colour in autumn.

The Vine family is well known as supplying us with some of the most beautiful hardy climbers. *Vitis Coignetia* is the only species which I have space to mention here. The flowers are sweet-scented, and the colours assumed by the decaying leaves in autumn are brilliant in the extreme. Those who have seen this Japanese climber in Mr. Anthony Waterer's nursery at Knap Hill, rambling over the trees in its neighbourhood, are not likely to require any persuasion to make them endeavour to procure it for their own gardens.

The Horse Chestnut family (*Sapindaceæ*) is an important one from a garden point of view. *Kolreuteria paniculata*, from North China, is not nearly so much grown as it deserves to be; its pinnate leaves, erect panicles of yellowish flowers, followed—in favourable seasons—by large bladder-like fruits, make it a conspicuous object in the shrubbery or park, and the decaying leaves in autumn assume a rich red-brown tint. Very recently a new species has been discovered and introduced from South China through the agency of the French missionaries; but it is too early yet to speak of its value in hardy out-door gardening in this country. The Chestnuts deserve special mention—one in particular, *Æsculus rubicunda* var. *Brioti*, a form having flowers about three shades deeper in colour than the ordinary Red Chestnut. *Æ. indica*, figured as long ago as the year 1858 in the *Bot. Mag.* t. 5, 117, from specimens from Mildenhall in Suffolk, is scarcely known in gardens, although it is a handsome species. The Japanese *Æ. turbinata* is also almost unknown in British gardens. *Æ. californica* makes a small compact tree; it has glossy leaves and dense panicles of rather small yellowish-white or flesh-coloured flowers. *Xanthoceras sorbifolia*—generally grown against a wall, and still rare in gardens—is quite hardy in the open, although it does not grow so fast as when trained against a wall. It is a Chinese tree, and likes a sunny, open place. The finest tree I have seen is in the famous arboretum at Segrez formed by the late Mons. Alphonse Lavallée.

In the Pea family there is a large number of excellent garden plants. I can only venture here to give a selection of those members which are least frequently seen in gardens. One of the handsomest species in the genus *Genista* is *G. virgata*, which is hardy enough at Kew, many large bushes having withstood probably more than thirty winters in that establishment. Every summer it is laden with a profusion of golden yellow flowers. *G. atnensis*, a South European species, has pendulous leafless twigs when the plants are old, and when in flower the tree (for it really makes a small tree) looks like a golden fountain. *G. germanica*, a charming little bush a foot high or so, is well worth growing, and, in its way, is as good as the better known *G. hispanica*. *Cytisus Arduini*, a native of the Maritime Alps, is a handsome species, only a few inches high; in late spring it forms a carpet of deep yellow flowers. *C. purpureus*—one of the parents of the purple Laburnum, *L. Adami*—is a beautiful free-flowering dwarf bush, and its purple blossoms render it conspicuous in a genus where the vast majority of the species have yellow flowers; there are white and blush-coloured varieties of this. The purple *Cytisus* is much longer-lived if grown on its own roots than when grafted, and apparently even grows more freely under these conditions. *C. purgans*, a compact South European bush, has golden yellow flowers; it is one of the parents of the so-called *Genista præcox*, the other being the white Spanish Broom, *Cytisus albus*.

Amongst the Rest-harrows, or *Ononis*, we have *O. arragonensis*, a bush a couple of feet or so in height, laden with erect racemes of yellow flowers. This seems to be a comparatively recent introduction to British gardens, and, judging by the Kew experience of some half-dozen years, it appears to be quite hardy enough to withstand the winters near London. *O. fruticosa* is a good companion plant to the last named; it has rosy-purple or pinkish flowers. *Amorpha canescens*, the "Lead plant" of the United States, is a beautiful species with grey-green leaves and panicles of blue flowers. In nurseries a comparatively worthless plant, a form of *A. fruticosa*, passes under the name of *A. canescens*. *Indigofera Gerardiana*, a Himalayan species, grown in some gardens as *I. Dosua* and in others as *I. coronillaefolia*, makes a handsome wall plant, and also does well in the open; under the last-named conditions, however, it sometimes gets damaged by frost,

but springs up rapidly from the root and flowers freely. The Rose Acacia, *Robinia hispida*, is almost always met with grafted on the common Locust; on its own roots it is much more effective and longer lived, and the very brittle branches are less likely to be injured by strong winds. *Halimodendron argenteum*, the so-called Salt-tree, a native of Asiatic Russia, does well in sandy soil, but likes all the sun it can get; the foliage is silvery and the flowers purplish pink in colour. This species does well near the sea. *Hedysarum multijugum*, from Central Asia, &c., is showy enough with its pinnate leaves and long axillary racemes of bright red flowers; it is, moreover, perfectly hardy. *Cæsalpinia japonica* is interesting as being perhaps the only hardy member of a handsome genus, the others being tropical in their requirements. It is an introduction of Messrs. Veitch, and is worthy of cultivation.

Any attempt to give an exhaustive *résumé* of the good things in the Order Rosaceæ would end in ignominious failure; all I can do is to mention as briefly as possible a few species of the Rose family which are not so often seen as they deserve to be. The first to flower is *Prunus Davidiana* or *Amygdalus Davidiana*, a Chinese Almond which opens its flowers in favourable seasons as early as the end of January: this year at Kew our trees were in fine flower in mid-February. *P. Mume*, a Japanese species with numerous varieties, is also an early flowerer. *P. divaricata*, from the Caucasus, Afghanistan, &c., forms a snowy sheet of blossom long before the leaves appear. In this country it fruits seldom; on the Continent, however, I have seen the beautiful Cherry-like fruits produced in great profusion. *P. pendula*, from Japan, is considered by Professor Sargent to be one of the floral treasures of the world, one of the very best garden plants ever introduced. The habit of the tree, too, is remarkably good, the pendulous branches laden with rose-coloured flowers giving it a fountain-like aspect. *P. prostrata* is a dwarf bush from Persia, &c.; it has small leaves and rosy-red flowers produced before the leaves are fully developed.

Of *P. pumila* there are many forms varying greatly in habit. This plant has a wide distribution in North America, and is perfectly hardy. One variety is prostrate; another dwarf, say $1\frac{1}{2}$ foot high; another 4 feet or more in height, and so on. All bear an abundance of white flowers, and are quite hardy. *P. japonica* or

P. sinensis is one of the most charming dwarf deciduous shrubs we possess; it should be grown on its own roots—grafted on Plum stock it soon becomes unsightly and goes off. The double white form is preferable to the reddish-tinted one, and is a more profuse flowerer. *P. triloba*, also from Japan, &c., should also be grown on its own roots; it, too, is perfectly hardy, although as a wall tree it makes one of the most beautiful trees we possess. *P. nana* or *Amygdalus nana*, a native of Southern Russia, &c., is a delightful plant, and also quite hardy.

Nuttallia cerasiformis flowers very early in the year, when few things are in blossom in the open air; it is a native of California, and perfectly hardy in this country. I have not seen the Damson-like fruits produced in Britain, but on the Continent it frequently ripens fruit. Of the Spiræas I have only space to mention a few. *S. arguta*, a plant of hybrid origin, a creation of the gardener's art, is an early-flowering kind, one of the very best; in spring it forms a snowy sheet of blossom. *S. bracteata*, introduced from Japan by Siebold, is still comparatively but little known. *S. decumbens*, a native of the Tyrolese Alps, is a pretty rock-plant; it grows about 6 inches in height, and bears a profusion of white flowers about midsummer. *S. dasyantha*, a Chinese species, is also worth a place even in the most select collection; it has heads of large showy snow-white flowers. *Stephanandra flexuosa*, though the flowers individually are inconspicuous, is a graceful deciduous bush with beautiful foliage. *Exochorda grandiflora*, from China, perhaps does best as a wall-plant, although it is perfectly hardy—the large snowy-white flowers not being so likely to be injured by the cold of our English springs. *E. Alberti* is a Central Asian plant of much more recent introduction. *Eucryphia pinnatifolia* is one of the numerous fine shrubs introduced from Chili by Messrs. Veitch; in the neighbourhood of London, at any rate, it is quite hardy. A beautiful shrub is *Rubus deliciosus*, with large white Rose-like flowers; it is a native of the Rocky Mountains, is perfectly hardy, and does best in a good stiff loamy or clayey soil; in light sandy spots it does not assume its true character, and is not satisfactory. The Roses, the single ones, species or first crosses, would supply abundant materials for a paper simply treating them from a purely gardening standpoint. A fortnight ago *R. lutescens*, with its large creamy-yellow flowers, was a mass of flower at Kew. *R. micro-*

phylla, a native of India, is exhibited to-day; it has peculiar spiny fruits, which when ripe exhale an odour somewhat resembling that of the Pine-apple. *R. macrophylla* is another Indian species, a tall-growing bush with long leaves and red flowers, followed by peculiar long fruits. *R. sericea*, also from India, is not nearly so well known as it should be; its white flowers are produced abundantly in the open, and the bush is quite hardy. One peculiarity deserving of mention in this species is the fact of its very frequently having only four petals. As it is not mentioned in Mr. Webster's useful little book "Hardy Ornamental Flowering Trees and Shrubs," a book which nevertheless contains a considerable number of little known plants, I presume it is even less known than I at first thought. *R. arkansana* is distinct in colouring and a profuse flowerer; it makes a bush 6 or 8 feet in height. *R. involuta* var. *Wilsoni*, from the Menai Straits, and *R. hibernica*, are two of our native British Roses which are worth a place in the garden, the former on account of the beauty of its rosy-red flowers, and the latter on account of its compact habit, glaucous leaves, white or flesh-tinted flowers, and handsome fruits.

Of the Thorns and Crabs I have no time to speak. I venture to suggest, however, that much good work might be done if gardeners and nurserymen exhibited fruiting branches of these during the autumn meetings of the Society. The Cotoneasters are, most of them, not only very ornamental when in flower, but still more ornamental when in fruit. *C. frigida* has large corymbs of white flowers followed by scarlet berries, and *C. bacillaris* white flowers and black or purple-black fruits. *C. horizontalis*—like the two species already mentioned, a native of the Himalayan region—is very distinct in habit, the branches being arranged in a distichous manner; the flowers, particularly when in bud, are reddish tinted. *Pyrus arbutifolia* and *P. nigra* are pretty dwarf shrubs with white flowers; the first has red fruits, and ripens late in the season, the other black fruits, ripening early. The foliage of both assumes a rich red colour in autumn.

The Saxifrage family is rich in garden plants. The genus *Deutzia* is well known, but a recently introduced Japanese species, *D. parviflora*, is scarcely known as yet in this country. It is a perfectly hardy shrub, and one of the best of a genus all of

which are desirable plants. The genus *Philadelphus* contains a number of most useful flowering shrubs. I mention specially *P. microphyllus*, a Western North American dwarf shrub, with small white flowers: it comes in very useful in places where there is not sufficient space for the taller-growing species. M. Lemoine, of Nancy, has raised a number of hybrids between this and *P. coronarius*, the Mock Orange, and these also are really excellent garden plants. The Rocky Mountain *Jamesia americana* is worth growing: it is a dwarf bush, free flowering, and perfectly hardy. *Carpentaria californica*, a handsome shrub with large *Philadelphus*-like flowers, is generally grown against a wall; it, however, thrives as a bush in the open shrubbery. Of all the *Escallonias* *E. Philippiana* is the hardiest in the neighbourhood of London: it is a compact grower, and produces an abundance of white flowers. *Itea virginica* is hardy enough, but likes a strong loamy or clayey soil; it only grows about a couple of feet in height, and its terminal erect racemes of white flowers are very showy. This plant, too, is worth growing if only for the beautiful autumnal tints assumed by the decaying leaves.

EXAMINATION IN HORTICULTURE.

ON May 1, 1894, the Society held the Third Annual Examination in the Principles and Practice of Horticulture, in various centres in the United Kingdom, and 126 candidates presented themselves for examination.

It may be mentioned that the candidates came from widely different parts of England and Scotland; a centre being established wherever a magistrate, or clergyman, or schoolmaster, or other responsible person accustomed to examinations would consent to superintend one on the Society's behalf, and in accordance with the rules laid down for its conduct. No limits as to the age or position or previous training of the candidates was imposed, and the Examination was open to both sexes.

The names and addresses of the successful candidates, together with the number of marks assigned to each, are given in the following Class List, to which is appended the questions set by the Examiners.

Eleven of the candidates will be found in the First Class as having gained 200 marks and more out of a possible total of 300; thirty-seven are placed in the Second Class, having gained between 150 and 200 marks; forty-five are placed in the Third Class, having gained between 100 and 150 marks; and thirty-three, having failed to obtain 100 marks, are unclassified.

CLASS LIST.

*(Maximum number of Marks obtainable, 300.)**First Class.*

	Marks
1. *W. F. Reid, age 40, Fieldside, Addlestone	225
2. E. Caesar, age 47, schoolmaster, Hale, Farnham	221
3. G. F. Tinley, age 21, Horticultural College, Swanley	220
Robert Cock, age 46, gardener, 19 Lichfield Road, Stafford	215
4. Leonard Jas. Reade, age 39, chemist, 71 Coventry Street, Wolverhampton	215
Charles Wingrove, age 30, gardener, The Lodge, Firfield, Addlestone	215
7. William Dyke, 24, gardener, Turnford Cottages, Broxbourne	210
8. Constance Hay-Currie, Horticultural College, Swanley	205
W. N. Sands, age 18, Horticultural College, Swanley	205
10. Ernest G. Gilmore, age 21, gardener, Beach House, Great Mongeham, Deal	200
Thomas Cowern, age 55, cashier, 107 Oak Street, Wolverhampton.	200

Second Class.

1. Eleanor Morland, age 19, Horticultural College, Swanley	190
W. R. Goff, age 29, gardener, Effingham, Leatherhead	190
J. Pearson, age 23, gardener, Errol Park	190
W. Pertwee, age 20, gardener, 6 Elizabeth Cottages, Kew	185
R. J. Tabor, age 19, Horticultural College, Swanley	185
4. W. Pascoe, age 39, gardener, Sidney Lodge, Hamble, Southampton	185
Alfred D. Morris, age 20, gardener, Barrowmore, Chester	185
W. Lord, age 23, gardener, Lowther Castle, Penrith	185
Henri J. Hus, age 18, Horticultural College, Swanley	185
H. J. Dudney, age 16, Horticultural College, Swanley	180
10. Alfred Saunders, age 29, nurseryman, 19 Weymouth St., Watford	180
R. J. E. Green, age 21, Norfolk Nurseries, Dereham	180
13. C. W. Avins, age 21, 3 Gloucester Terrace, Kew Green, Surrey	177
A. D. Hogg, age 17, gardener, Dalkeith Gardens, N.B.	175
14. J. T. Hayton, age 24, gardener, Castle Howard, York	175
Mary S. Gilson, age 39, schoolmistress, Whitehall Villa, Bedworth, Nuneaton	175
17. Wm. Bell, age 32, Knighton Road, Leicester	174
Geo. Underwood, age 18½, gardener, 23 Free School Lane, Leicester	170
J. P. Morrison, age 27, clerk, Beggarbush, Musselburgh	170
18. G. Hammond, age 18, market gardener, Pilgrim's Hatch, Brentwood	170
Thos. F. Badcock, age 17, Horticultural College, Swanley	170
H. Fincham, age 42, master of workhouse, Cranbrook	170
Geo. Beech, age 30, undergardener, Morton Hall, Liberton, Edinburgh	165
Geo. Butcher, age 38, gardener, 188 Wellfield Road, Streatham, S.W.	165
23. P. J. Nash, age 17, Horticultural College, Swanley	165
G. W. Harrison, age 32, schoolmaster, 27 Vicarage Road, Watford	165
John R. Strubell, age 34, schoolmaster, Cowper Boys' School, Hertford	165
28. H. Patterson, age 21, gardener, 8 Albion Grove, Colchester	160
J. Lansdell, age 43, gardener, Barkby Hall, Leicester	160
30. Geo. A. Bishop, age 36, gardener, Wightwick Manor, Wolverhampton	155
J. F. Dancer, age 32, gardener, Grim's Dyke, Harrow Weald	155

* Wins the Society's Silver Gilt Medal.

		Marks
32.	Frances M. Cooper, age 24, Highfield, Hartley, Plymouth	150
	James Hartley, age 40, sizer, 88 Woone Lane, Bolton, Clitheroe	150
	John W. Leaper, age 29, railway clerk, Letchmore Heath, Elstree, Herts	150
	Evelyn Windemer, age 17, Horticultural College, Swanley	150
	W. Woodcock, age 19, Horticultural College, Swanley	150
	W. McCreath, age 23, gardener, Stobo Castle, Peebleshire	150

Third Class.

1.	Thomas B. Field, age 44, gardener, Stanley Hall, Bridgnorth	145
	George Lamb, age 26, gardener, Cambridge	145
	Percy Wall, age 20, Horticultural College, Swanley	145
	Peter Black, age 22, gardener, Castle Howard, York	145
5.	Geo. Grimmer, age 27, gardener, The Grove, Stanmore, Middlesex	142
	Christopher Wren Payne, age 20, 36 Lower Bank Road, Fulwood, Preston, Lancashire	140
6.	L. Mabel Tuke, age 23, Horticultural College, Swanley	140
	D. R. Stratford, age 23, gardener, Wormley Bury, Broxbourne	140
	Charles Jamieson, age 24, gardener, Leith Walk Nursery, Edinburgh	140
12.	Edwin Wareham, age 33, warehouseman, Newtown, Bedworth	140
	J. Carter, age 30, gardener, Billing, Wye, Kent	140
14.	Arthur J. Brown, age 36, gardener, 6 Highfield Road, Chertsey	135
	Robert Jack, age 33, gardener, Hazel Hall, Dundee	135
15.	Wm. Scott, age 22, gardener, Foggyley, Lochee, Dundee	132
	Sarah Sumner, age 38, teacher, Bedworth, Nuneaton	130
18.	Thos. Snelgrove, age 24, gardener, Wheyhill Villa, Green Lane, Addlestone, Surrey	130
	Arthur Fagg, age 16, Horticultural College, Swanley	130
19.	Wm. Henry Stevens, age 26, gardener, Ingestre Gardens, Stafford	127
	Emmeline Collins, age 26, teacher, Welland, Malvern	125
21.	H. Gristwood, age 39, gardener, St. John's Road, Watford	125
	Wm. Dyson, age 21, gardener, Botanic Gardens, Cambridge	122
22.	H. Gregson, age 24, gardener, Bring's Farm, Harwood, Bolton	120
	J. Leeming, 36 West View, Clitheroe	120
	Wm. Sheppard, age 40, Letchmore Heath, Elstree, Herts	120
	G. R. Newman, age 16, improver, Sutton House, Gloucester	120
27.	E. J. Elliott, age 27, teacher, Woodside, Hale, Farnham	120
	27. Francis A. Gwilliam, age 29, gardener, Palace Gardens, Gloucester	117
28.	H. V. Wildash, age 22, Horticultural College, Swanley	115
	John Dick, age 16½, gardener, Moreton Hall, Liberton	115
	George M. Stuart, age 30, gardener, Edenhouse, Banff, N.B.	115
32.	A. Bettesworth, age 21, gardener, Holly Lodge, Highgate	115
	Geo. A. Jones, age 28, gardener, Greenford Place, Sudbury	110
35.	W. Watson, age 45, gardener, Taylor's Lane, Dundee	110
	J. Hilson, age 25, gardener, Castle Howard, York	110
36.	John T. Capell, age 29, gardener, Aldenham, Herts	109
	Henry Alfred Hardy, age 23, gardener, Low Hill, Bushbury, Wolverhampton	107
37.	J. Woodgate, age 46, police constable, Round Bush, Aldenham	105
	J. L. Thorne, age 17, Horticultural College, Swanley	105
	Jas. Beats, age 21, gardener, Manor Place, Perth Road, Dundee	105
41.	J. Wilson, age 21, gardener, Bolton Hall, Clitheroe	105
	Annie M. Gulvin, age 17, Horticultural College, Swanley	102
42.	Thos. Whit, age 28, gardener, Barkby, Leicester	100
	Harry Strawford, age 17, teacher, Welland, Malvern	100
	John Baxter, age 46, gardener, Pine Grove, Dundee, N.B.	100
	J. Warwick, age 21, gardener, Clement Park, Lochee, Dundee	100

QUESTIONS 1894.

Eight questions only to be answered ; four from Division A, and four from Division B.

Division A.—ELEMENTARY PRINCIPLES.

1. Write as full a description as you can of the Potato plant in the various stages of its growth, from the sprouting of the tuber to the formation of the flower.
2. What is meant when the soil is said to be sour? What steps should be taken to remedy that condition?
3. How do the roots of a plant grow, and what circumstances are favourable to their growth?
4. How is it that one particular manure may be useful to one crop and valueless to another?
5. Explain the course of growth in an Onion, from the seedling stage to the formation of the bulb.
6. Describe the method of fertilisation in the flower of the Cabbage, or in any other common garden plant.
7. Explain the evil results that arise from thick sowing or planting.
8. What causes produce clubbing in Cabbages? What remedies can be applied?

Division B.—HORTICULTURAL PRACTICE.

9. Describe the preparation of the ground and the manner of planting such fruit trees as the Apple, Pear, Plum, Cherry, &c., and point out the manner of preparing the trees for planting.
10. What position in the garden should Peach, Nectarine, and Apricot trees occupy? To what diseases are they subject, and by what insect pests are they liable to be attacked? Mention the remedies to be applied in each case.
11. Describe the preparation of the ground for vegetable crops, and briefly describe the rotation of cropping a kitchen garden.
12. How would you proceed to obtain a succession of Peas, Beans, and Runner-Beans for as long a period as possible? State the best varieties to cultivate, and the quantities required for a given length of row.
13. Describe the culture of Cucumbers and Tomatoes under glass, and show their value as crops for market purposes.
14. Give the details of Mushroom culture out of doors, as well as in the usual Mushroom-house.
15. How are Roses propagated? Mention the best method of culture. Enumerate the insect enemies and diseases to which they are subject, and point out the best ways of dealing with them.
16. Mention the time of planting, and indicate the general method of culture suitable for the flower-garden.

EXTRACTS FROM THE PROCEEDINGS

OF THE

ROYAL HORTICULTURAL SOCIETY.

GENERAL MEETING.

JANUARY 16, 1894.

PHILIP CROWLEY, Esq., F.L.S., in the Chair.

Fellows elected (23).—Miss A. Baker, Chas. Beadle, J.P., S. H. Bickam, S. Brandon, A. Buchan-Hepburn, D. C. Cave, J.P., Lady A. Dundas, W. W. Flemyng, A. M. Hallett, W. G. Head, S. Heaton, Lt.-Col. W. Leir, S. Margetson, F. F. McKenzie, W. Neild, A. C. Newbigging, J. W. Pearson, R. B. Rogers, S. Sanday, R. Stephenson, J. Stott, G. B. Williams, Marchioness of Zetland.

Society affiliated (1).—Wood Green Horticultural Society.

ANNUAL GENERAL MEETING.

FEBRUARY 13, 1894.

Sir TREVOR LAWRENCE, Bart. (President of the Society), in the Chair, and about 100 Fellows present.

The minutes [of the last Annual General Meeting on February 14, 1893], were read and signed.

The following elections took place :—

Fellows (42).—Miss E. M. Alderson, B. B. Baker, Ernest Ballard, Samuel Banner, Thos. Barefoot, Edwin Basham, Alfred G. Bedford, A. H. Beebe, Miss C. E. Brunton, Miss Buchanan-Riddell, Henry Buckley, Mrs. John Burton, H. H. Burton, Claud T. Cayley, J. M. Cleary, James Dawes, Rev. Thos. Eland, Mrs. Falk, Joseph Fitt, Miss A. M. Fookes, Robert Harley, E. Hilliard, Norman P. Jaffrey, Frank Jolly, R. B. Leech, R. Duppa Lloyd, Rev. Chas. Lunn, Miss McRonald, P. M. Martineau, J.P.,

L. Matthey, R. H. Measures, James J. Morrish, F. R. Ohlson, Purnell Purnell, Mrs. Rankin, Thos. Redington, Thos. Richards, Mrs. A. Fly Smith, T. Spencer, Mrs. Fortescue Tynte, R. W. Wallace, T. A. Young.

Societies affiliated (3).—Clydach Cottage Garden Society; Laxfield and District Horticultural Society; Martock Horticultural Society.

Messrs. J. Cheal and H. Turner were appointed Scrutineers of the ballot.

Dr. Hogg proposed, and Mr. W. Marshall seconded, a hearty vote of thanks to the Members of the Council who were retiring under the operation of the Bye-laws, viz.: Sydney Courtauld, Esq., D. Morris Esq., M.A., C.M.G., &c., and Geo. Paul, Esq.

To fill the vacancies thus caused on the Council the following gentlemen were proposed for election, viz.: Sir Alexander J. Arbuthnot, K.C.S.I., Sir John Edwards-Moss, Bart., and Charles E. Shea, Esq.

The following gentlemen were proposed for re-election as officers, viz.: *President*—Sir Trevor Lawrence, Bart.; *Treasurer*—Philip Crowley, Esq., F.L.S.; *Secretary*—The Rev. W. Wilks, M.A.; *Auditors*—Messrs. Harry Turner, Henry Williams, and A. H. Pearson.

After a careful examination of the ballot papers, the Scrutineers reported the above-named gentlemen to be all duly elected.

The Chairman, in moving the adoption of the Report, with the Financial Statement and Balance-sheet, remarked that he did so for the tenth time, and he could not but cast his mind back during the past ten years in order to survey the position of the Society. During the decade the Society had seen many stormy days, but it had now emerged from the great financial and legal difficulties in which it had once been placed. Since 1890 as many as 1,657 new Fellows had joined the Society, and in the same period the annual revenue had increased by £1,000 in subscriptions alone.

The Chairman then referred to the three principal Flower Shows of 1893, remarking that while the Agricultural Hall Show and the Chiswick Local Show did not quite fulfil expectations, the Temple Show was an improvement on any of its five predecessors.

Mr. F. R. Parker, referring to the Lindley Library, remarked that it would be a great boon to Fellows if they could purchase

a catalogue of the books, so that Fellows might use the books more. Very many Fellows, he said, did not even know that books might be borrowed on certain conditions.

Dr. Maxwell T. Masters, F.R.S., as one of the Trustees of the Lindley Library, explained the origin of the Lindley Library, and hoped that as the amount of money in the hands of the Trustees was hardly sufficient to pay the cost of new books and binding during the year, Fellows of the Society would contribute something to augment it.

In reply to Mr. W. Marshall, the Chairman stated that suggestions were received by the Council in regard to the Imperial Institute, but the Council did not consider it wise to move westward again.

After a few remarks from Mr. Ranger Johnson, the adoption of the Report was seconded by Mr. Henry Cannell, and carried unanimously.

REPORT OF THE COUNCIL FOR THE YEAR 1893-94.

THE year 1893 has again been one of steady work and progress for our Society.

Eighteen Fruit and Floral Meetings have been held in the Drill Hall, James Street, Victoria Street, Westminster, besides the more extended Shows at the Temple Gardens on May 25 and 26; at Chiswick Gardens on July 11; and at the Agricultural Hall on August 29, 30, 31, and September 1; and Lectures have been delivered at fourteen of the Meetings. The number of awards has been as follows: On the recommendation of the Floral Committee, 64 First Class Certificates, against 62 in 1892, 201 Awards of Merit, against 156; and 6 Botanical Certificates, against 2. On the recommendation of the Orchid Committee, 39 First Class Certificates, against 48 last year; 86 Awards of Merit, against 72; 25 Botanical Certificates, against 29. On the recommendation of the Fruit and Vegetable Committee, 16 First Class Certificates, against 27; and 23 Awards of Merit, against 8 last year.

The Society's Great Show, held (by the continued kindness of the Treasurer and Benchers) in the Inner Temple Gardens, was a greater success than ever, alike in the number of visitors, the quantity and quality of the exhibits, and the favour of the elements. The best thanks of the Society are due to all who so

kindly brought their plants for exhibition, or otherwise contributed to the success of this Show. We are glad to be able to report that the Treasurer and Benchers have granted us the use of the Gardens for three days in the coming year, instead of two.

The Society's general work of Scientific experiment and investigation, and of the practical trial of various plants, has been going on steadily at Chiswick, under the superintendence of Mr. Barron. Trial has been made of 48 varieties of Onions, 63 of Peas, 104 of Strawberries, 68 of New Potatoes, 50 of Tomatoes, 23 of Celery, 20 of Runner Beans, and 24 of Endive. In the Floral Department 400 varieties of Carnations and Picotees, 70 Pinks, 500 of Pæonies, as well as many varieties of Phloxes, Cannas, Sweet Peas, Violas, and Irises, have been tried. Reports founded on the work of these Committees will be found in the Society's *Journal*, Vol. XVI. Parts 2 and 3, now issuing.

The following Table will show the Society's progress in regard to numerical strength during the past year :—

DEATHS IN 1893.				FELLOWS ELECTED 1893.			
				£ s. d.			
Life Fellows ...	19	.....	0 0 0	4 Guineas	5	... 21	0 0
4 Guineas	4	.....	16 16 0	2 „	109	... 228	18 0
2 „	10	.....	21 0 0	1 „	279	... 292	19 0
1 „	14	.....	14 14 0	Associates	3	... 1	11 6
				Affiliated Societies	14	... 15	15 0
	47		£52 10 0			410	£560 3 6
				Deduct loss	190	1	0
				Net increase in income		£370	2 6
RESIGNATIONS ^{NS.}							
			£ s. d.				
2 Guineas	31	.....	65 2 0	New Fellows, &c.		410	
1 „	69	.....	72 9 0	Deduct resignations and deaths		147	
	100		£137 11 0				
				Numerical increase		263	
Total loss	147		£190 1 0				

The *Journal* of the Society has been continued so as to enable Fellows at a distance to enter more fully into and reap the benefits of the study and work of those actively engaged at headquarters. Vol. XV. Parts 2 and 3, and the first part of Vol. XVI. were published during the year, and the second and third parts of Vol. XVI. are now ready for issue. The Society has also published (i.) a monograph on Bulbous Irises, by Professor Michael Foster, Joint Secretary of the Royal Society; and (ii.) a complete list of Certificates to Plants, Flowers, Ferns, Orchids, Fruits, Vegetables, &c., granted by the Society from the year

1859 to January 1893. The Council commend these two volumes to the attention of the Fellows.

The Exhibition which the Society promoted at Chiswick on July 11 was not supported with the local enthusiasm which the Council had been led to expect, nor was it such a success as to warrant a repetition. But it is proposed to hold a Conference in the Gardens on September 25, 1894, on the subject of Aboriculture, and in connection therewith to devote the meeting at the Drill Hall on June 12 to the subject of Hardy Flowering Trees and Shrubs. Any information touching these subjects would be welcome, especially as to hardiness, or otherwise, of any of the rarer Flowering Trees and Shrubs.

The Great Autumn Show, held at the Agricultural Hall on August 29 to September 1, was, from a horticultural point of view, an unrivalled success, there probably never having been a finer display of combined Autumn Flowers and Fruits seen in the Metropolis. The Council can but regret that the number of visitors was comparatively small, but as the Agricultural Hall Company reserved to themselves the sole right of advertising the Show, the Society is in no way responsible for this disappointment.

An examination in the principles and practice of Horticulture was held on May 4, concurrently at different parts of England, Scotland, and Ireland, a centre being established wherever a magistrate, or clergyman, or schoolmaster, or other responsible person accustomed to examinations would consent to superintend one on the Society's behalf, and in accordance with the rules laid down for its conduct. No limits as to the age or position or previous training of the candidates was imposed, and the examination was open to both sexes. Two hundred and four candidates presented themselves for examination, and the papers were divided into Higher and Lower Grades. In the Higher Grade seventy-six entered, with the result that six were placed in the First Class, twenty in the Second Class, thirty-six in the Third Class, and fourteen, failing to obtain 100 marks, were not classed. In the Lower Grade six candidates were placed in the First Class, sixteen in the Second Class, thirty-eight in the Third Class, and sixty-eight were not classed. The names and addresses of the successful candidates, together with the number of marks assigned to each, will be found in the Society's *Journal*, Vol. XVI. Part 1, page 151.

It is proposed to hold a similar examination on May 1, 1894, and candidates intending to sit for it should apply to the Secretary, 117 Victoria Street, Westminster, some time during March.

In round numbers £1,600 has been expended at Chiswick this year on the general work, and repairs and keeping up of the Gardens. The receipts from the Gardens by sale of surplus produce amount to £430, making the net cost of the Gardens £1,170.

In conjunction with the Lindley Library Trustees, the Society's Library has received considerable attention. All serial publications have been kept up to date, a large number of valuable volumes have been bound, and the following new books, amongst others, added to the Library, viz.: "Flore Forestière de la Cochinchine"; "Silva of North America"; "Orchids of South Africa"; Sowerby's "English Botany" (36 vols.); Trimen's "Handbook of the Flora of Ceylon"; Humboldt and Bonpland's "Monographie des Melastomacées"; "Bibliographical Index of British and Irish Botanists"; "Index Kewensis" (parts 1 and 2), and many others.

The hearty thanks of the Society are due to the Chiswick Board and to all the members of the Standing Committee—viz. the Scientific, the Fruit and Vegetable, the Floral, the Orchid, and the Narcissus Committees—for the kind and patient attention which they have severally given to their departments; also to the exhibitors who have contributed to so great an extent to produce the valuable results of the various meetings.

The best thanks of the Society are due to all those who, either at home or abroad, have so kindly and liberally presented books to the Library, or plants or seeds to the Gardens. A list of donors has been prepared, and will be found in the Society's *Journal*, Vol. XVI. Parts 2 and 3, 1894. The Council also wish to express, in their own name and in that of all the Fellows of the Society, their great indebtedness to all who have so kindly contributed, either by the exhibition of plants, fruits, flowers, or vegetables, or by the reading of papers, to the success of the fortnightly meetings in the Drill Hall.

The papers read at these meetings, which have been published in the *Journal*,* are as follows :—

* Several back numbers of the *Journal* can still be purchased at reduced prices. For List see "Arrangements, 1894," page 15.

- Mar. 14. "Some Effects of Growing Plants under Glasses of Various Colours," the Rev. G. Henslow, M.A.
- „ 28. "Flowers of the French Riviera," Mons. H. de Vilmorin.
- April 11. "The Antiquity of the Citron Tree in Egypt," Dr. E. Bonavia.
- „ 25. "Alpine Plants and their Treatment," Mons. H. Correvon.
- May 9. "Chemical Determinations concerning the Soil without the aid of Chemistry," Professor F. Cheshire, F.L.S.
- June 6. "Hardy Rhododendrons and Azaleas," Sir John T. D. Llewelyn, Bart.
- „ 20. "Rambles with a Trowel," Mr. H. Selfe Leonard.
- July 25. "Alpine Houses and Plants," Mr. H. Selfe Leonard.
- Aug. 8. "Cannas," Mr. J. G. Baker, F.L.S.
- Sept. 12. "Garden Phloxes and Pentstemons," Mr. J. Douglas.
- „ 25. "Causes of Failure in Eucharis Culture," Mr. W. Iggulden.
- Oct. 10. "Pears," Mr. W. Crump.
- „ 24. "Onions," Mr. A. Dean.
- Nov. 14. "Chrysanthemums," Mr. R. Parker.
- „ 28. "Late-keeping Grapes," Mr. T. Crasp.

Besides the above, the Second Report of Dr. F. W. Oliver on the "Effects of Urban Fog on Cultivated Plants" is printed in full, and it is well worthy of being carefully read.

The Council have the sad duty of recording the death of 47 Fellows during the year, and amongst them they regret to find the names of the Earl of Lovelace, Lord Ebury, Lord Alfred Churchill, the Countess of Carberry, Lady Peto, Lord Calthorpe, Mr. Phippen, Mr. Hugh Low, Mr. H. Deverill, Mr. T. Laxton, Mr. Bailey Denton, Mr. R. Bullen, Mr. H. G. Quilter, Mr. S. Barlow, &c.

A scheme for the affiliation of Local Horticultural Societies was put forward in 1890; fifty-eight Local Societies have availed themselves of it. The Council express the hope that Fellows will promote the affiliation of Local Horticultural and Cottage Garden Societies in their own immediate neighbourhood.

Dr. ANNUAL REVENUE AND EXPENDITURE ACCOUNT

To ESTABLISHMENT EXPENSES—

	£	s.	d.	£	s.	d.
Salaries and Wages	644	13	8			
Rent of Office	173	3	0			
Printing and Stationery	157	11	10			
Journal	448	16	6			
Other Publications	243	8	8			
Postage	78	15	0			
Coal, Gas, and Water	5	18	9			
Donation to Auricula and Primula Society ...	10	0	0			
„ Carnation and Picotee Society ...	10	0	0			
„ National Rose Society (1892-93) ...	20	0	0			
Miscellaneous	82	18	0			
	<hr/>			1,875	5	5

„ SHOWS and MEETINGS—

Rent of Drill Hall and Cleaning	97	19	0			
Temple Show	495	19	4			
Chiswick Local Show... ..	120	15	0			
Agricultural Hall Show—Prizes, Medals, &c. ...	547	14	10			
Advertising	16	0	3			
Prizes and Medals	283	12	8			
Printing, &c.	4	12	6			
Labour	65	2	8			
Repairs to Tents	12	7	0			
Superintendent of Flower Shows	50	0	0			
	<hr/>			1,691	3	3

„ CHISWICK GARDENS—

Rent, Rates, Taxes, and Insurance	259	14	9			
Superintendent's Salary	225	0	0			
Labour	688	6	1			
Manure, Implements, &c.	161	18	5			
Coal and Coke	149	1	6			
Repairs	72	13	1			
Water and Gas... ..	18	18	9			
Miscellaneous	49	2	6			
	<hr/>			1,624	15	1

„ BALANCE TO GENERAL REVENUE ACCOUNT

396 19 4

£5,591 3 1

for the YEAR ending 31st DECEMBER, 1893.

Cr.

	£	s.	d.	£	s.	d.
By ANNUAL SUBSCRIPTIONS... .. .				3,258	18	5
„ DONATIONS				24	1	0
„ TEMPLE SHOW	683	10	6			
„ CHISWICK LOCAL SHOW	111	11	7			
„ AGRICULTURAL HALL SHOW	540	0	0			
„ DRILL HALL MEETINGS	25	10	0			

				1,360	12	1
„ ADVERTISEMENTS IN JOURNAL, &c.				220	18	2
„ SALE OF JOURNAL, &c.				133	4	6
„ DIVIDENDS—						
Davis Bequest and Parry's Legacy	56	18	4			
Consols, £500	13	5	0			

				70	3	4
Interest on Deposits				12	9	6
„ PRIZES AND MEDALS				80	5	0
„ CHISWICK GARDENS—						
Produce Sold	404	9	2			
Admissions	3	14	0			
Miscellaneous	22	7	11			

				430	11	1
				£5,591 3 1		

We have examined the above Accounts, and find the same correct.

(Signed)

HARRY TURNER, }
HENRY WILLIAMS, } *Auditors.*

January 8, 1894.

HARPER BROS., *Chartered Accountants.*

Dr.

BALANCE SHEET, 31st DECEMBER, 1893.

Dr.

	£	s.	d.	£	s.	d.
To SUNDRY CREDITORS	111	14	9			
„ SUBSCRIPTIONS, 1894, paid in advance	69	6	6			
„ GENERAL REVENUE ACCOUNT—						
Balance, 1st January, 1893 ...	2,190	14	1			
Less Bad Debts	2	4	6			
	<hr/>					
	2,188	9	7			
	<hr/>					
By SUNDRY DEBTORS—						
Annual Subscriptions outstanding, estimated at	20	0	0			
Garden Produce	38	7	11			
Advertisements in Schedules ...	107	16	3			
	<hr/>					
INVESTMENTS—						
2 $\frac{3}{4}$ % Consols, £2,122.8s.9d. cost	1,892	11	3			
(£2,022.8s.9d. of this sum is held by the Society subject to the provisions of the will of the late J. Davis, Esq.)						
2 $\frac{3}{4}$ % Consols, £500 ... cost	479	8	0			
	<hr/>					
				2,371	19	3
„ CASH AT LONDON AND COUNTY BANK—						
On Current Account	225	15	4			
CASH IN HAND	2	11	5			
	<hr/>					
				228	6	9
	<hr/>					
				£2,766	10	2
	<hr/>					

We have examined the above Accounts, and find the same correct.

(Signed)

HARRY TURNER, }
HENRY WILLIAMS, } Auditors.
HARPER BROS., Chartered Accountants.

January 8, 1894.

JOURNAL

OF THE

ROYAL HORTICULTURAL SOCIETY.

VOL. XVII. 1895.

^{Part}
PARTS III. AND ~~IV.~~

CACTACEOUS PLANTS.

By Mr. JOHN W. SINGER.

[Read July 10, 1894.]

IN offering my experiences in cultivating the Cactus family it must not be supposed that either a learned or a scientific treatise will be given, but simply the result of some practical work coming from my taking up the occupation as an amusement to employ the mind, after retiring from a business which had engaged the greater part of an active life for over forty years. Not liking to be idle, I considered, "What shall I do, seeing my sons have kindly put me on the shelf as to the active work and anxiety of a large business?" and my feelings said, "Collect and cultivate cactaceous plants. They do not take up much room, few cultivate them, and there is thus the novelty of rarity." Besides being tempted by the marvellous forms of many of these plants, the bizarre appearance of others, to say nothing of the beauty of their flowers, another recommendation was that their slow growth allowed me to have double the number of plants in a given house than of almost any other kind.

I commenced my work by some kind friends giving me plants of the more ordinary varieties, others being purchased as occasion offered; and, having been a considerable traveller in my younger days, I knew how to collect from foreign growers, and soon got together a fair collection of the rarer sorts obtaining

them from Mexico, Philadelphia, the South of France, and Belgium. I wrote also to Australia, but the Director of the Botanic Gardens at Melbourne informed me that there were no Cacti peculiar to that country, and only such as had been imported.

By these means I got together about 600 plants of different kinds, keeping them in a conservatory well heated with the usual hot-water apparatus. My first trouble was to learn that many plants in such a collection were not Cacti, strictly speaking, such as Stapelias, Gasterias, &c., these being called "succulents." The French appear to be as badly off as we are for a proper term to include all the Cactus family, their title being "*les Cactées et les plantes grasses*," although very many of these plants have little claim to the latter term.

To inform myself as to the treatment of my collection, I naturally read all the available books in English on Cactus cultivation, and was surprised to learn how poor should be the soil for potting these plants, as therein recommended; however, I naturally followed the advice as closely as possible. In the "*Book of the Garden*," by McIntosh, he says: "Succulents grow in the very poorest soil, such as sand or gravel; thus they are potted in light sandy soil, with a portion of lime rubbish to make it more porous." Mr. Shirley Hibberd says: "It is a mistake to grow them in brick rubbish; use equal parts of turfy loam and leaf-mould, or fibry peat, and a fourth part of silver sand. This will stand for three years. It is a risk to employ manure." Mr. Croucher says, "Manure should be specially avoided," and he advises "light loam with plenty of sand and brick rubbish. Never use peat; some cultivators use leaf-mould, but I do not find it good." And the best botanist I had the pleasure of knowing advised me "not to use the sand often found at the roadside after a storm, because there might be horse-manure in it."

My first doubts as to the value of the above rules came from observing a collection of these plants belonging to a friend, who did not give himself the pleasure of potting them himself, but got a neighbouring gardener, who had the care of several glass houses, to do it for him. This man had read nothing about such plants, and thus thought only of treating them as he did his stove-plants, potting them with the rich soil used in ordinary greenhouse cultivation. I could not help observing that these

plants grew much better than my own, and looked much fresher and greener. I also observed that most of the plants I received from the South of France and Belgium were far finer-looking in colour, and much greener than my own, and that when planted according to our English book rules they did not improve, nor even keep up their good appearance; in fact, many of them got smaller, losing the bloom which they possessed on their arrival. This naturally made me think that there was something wrong in my mode of treatment, and I therefore wrote to my foreign friends asking them sundry questions as to the compost they used, also as to watering and air, and as to any use of artificial manure &c.

My first reply came from M. Rébut, of Chazay d'Azergues, Rhône, France, who has a collection of 12,000 of these plants. His letter, translated as clearly as such technical terms can be, states that he gets the compact earth of a meadow, well powdered, also leaf-mould, and manure from the bottom of a dung-heap at least two years old, this also well powdered; earth or dirt from the road, especially that from deep ruts; earth from old Willow-trees, and earth from Oak-trees. This collection of material is put in a heap, and allowed to stay a long time, occasionally stirring it, to promote decomposition. It is then to be sifted before using, mixing it with fine sand, as may be required. M. Rébut recommends a temperature of 8° to 10° or 12° Centigrade, or not above 50° Fahrenheit, for the winter months. He would then only water once a month, taking care that at this season no water touched the crown of the plant. He is a great advocate for giving plenty of air, even in the winter, and he leaves the door of any house that may be heated open the whole day, even when the outside air may be only a few degrees above the freezing point. Should there be no heat to the house, he would not do this. I have myself since followed this rule, and have lost far fewer plants than when the door was kept shut in winter. A certain amount of judgment must be used on this point, such as in bad weather, or when watering. For the *Pilocereus* this treatment has to be modified, as they require more heat than ordinary cactaceous plants; and should there not be a stove-house, it would be well to screen off a small part of the conservatory with glass, putting these plants within its shelter, taking them from it again when the spring arrives.

In the summer M. Rébut advises taking all the plants out of the house, merely sheltering them from a north wind, and then watering them very freely over the whole plant. Should the temperature be over 50° Fahr. in the winter, the plants must be watered much oftener, and the more delicate the plant the more perfect must be the drainage of the pot, so as to keep it fresh. He does not use peat. Anyone wishing to increase their collection cannot do better than write to M. Rébut for a catalogue. I have always found him to be a most interesting and honourable man, and plants can be easily and cheaply sent by parcel post.

Mr. Blanc, of Philadelphia, is a large grower of these plants, and for young offsets he recommends a layer of peat, two inches deep, for drainage, and then five or six inches of mica sand, allowing the plants to remain thus for two years. For potting he says the best thing is good loam, with one-third sand, and for *Cereus* he would use some fertiliser, about one-fifth, and he prefers to have the water for the plants slightly warm, as cold water sometimes checks them. Mr. Blanc's plants are large and fine, and more reasonable in price than in Europe; but, there being no parcel post, you can only have small plants by sample post, or large ones by "express," taking care to have the parcel prepaid, or it will cost you double.

My next kind adviser was M. Louis Smet, of Gand, Belgium, who writes in English, and is a large cultivator of these plants. He says: "My soil consists chiefly of light Oak-leaf soil, or, even better, leaf-soil of old Willow-trees, put together with a little horse-dung and Reigate white sand, the whole being put in a heap and mixed up once a month, using it only when it is one year old. If the mixture is too strong, I put a little more sand, a light soil bringing more warmth to the root than a heavy one. The compost is kept in the open, but covered on the top to protect from rain. In the winter time keep the plants dry and cool, so as to have a nice rest; give in daytime 10° to 15° Centigrade, less if possible at night. Water very little in winter, in December and January scarcely anything, and in winter never water them on the top of the plant, but this may be done in summer. Before taking the plants inside in the autumn take away about half an inch of soil at the top, and renew with fresh soil. Even in summer, the surface of the soil may be loosened with a small wooden label in order to give air;

also take away the old soil, and renew lightly three or four times in summer, for by the rains, the watering, &c., the soil gets too much pressed, preventing air and heat from getting to the roots, and sun vivification is what they want to the utmost. Always water overhead in the summer time with a very light rose, which can give no pressure. In winter time, if watering is wanted, then very slightly wet the soil with a very narrow tube or pipe. I never use any liquid manure, but in the rain-water tank I hang a sackful of soot, which gives a nice green and healthy appearance to the plants." M. L. Smet sends very good plants by the Belgian parcel post.

These opinions on the compost for potting Cacti are of great value, as coming from persons of vast experience and practice, and, although opposed to the usual English treatment, I feel sure that they are correct, as the plants coming from these writers are far better than any of English growth, sometimes even surpassing those at Kew in respect of freshness, colour, and the bloom of health upon them, both in young plants and those of many years' growth.

If the earth for potting could be passed through a mill with rollers it would kill many noxious insects, destroying worms, grubs, &c., as many a good plant is lost by some kind of worm eating into the body of it. Whenever a plant feels loose in the earth there is something wrong, and it will be found that the lower part has been eaten away. In such case cut away all the affected part and plant again in fresh soil, throwing away every particle of the old mould. Some persons bake the earth before using it, so as to kill any insect in it. A plant will often be found to be in a bad state when the moisture is not absorbed after watering, and, if the earth keeps damp longer than usual, cease watering and watch such plant. In their native country they have plenty of sunlight, plenty of air, sometimes plenty of water, and under these conditions the plants will thrive; but with our deficiency of sunshine it is hardly to be wondered at if some do not.

One advantage of giving plenty of air is that insects do not then breed so freely as when the house is kept too close, insects being a pest that takes away some of the pleasure of growing these plants. Insects are often introduced with plants coming from America; it is well, therefore, to examine the roots of all

such most carefully, as the mealy-bug may be there—the most troublesome of all insects, and the one mostly to be feared. Whenever you see a small speck of white matter, like a particle of chalk, you may be certain that mealy-bug is not far off. Search should at once be made until you find it, and watch should be kept over the plant continually, as this insect breeds most freely.

Mealy-bug is one of our greatest difficulties, and the means used for getting rid of it are very different in various countries. Mr. Blanc, of Philadelphia, advises shaking out the plant from the pot, removing all the soil, and giving the plant a good syringing with fir-tree oil, much diluted with hot water, or a tea-spoon of coal-oil (petroleum) with a pint of milk; but these remedies require great care, and he prefers to spray the plant with pure alcohol through an atomiser, which can be purchased of most chemists. The English plan, as recommended by Mr. Watson, is to take a wineglass of paraffin added to a gallon of water, with two ounces of black soap, well mixed together, syringing the plant with it, and shortly afterwards syringing with water to remove the paraffin. The Belgian method is to take a gallon of rain-water, and add to it about 100 grammes of brown soap, mixing with it 100 grammes of flower of sulphur, stirring it well up, and then dipping the plant in the mixture, being careful that every part of the plant (except the roots) shall be thoroughly washed; then lay the plant down, so that nothing touches the roots, and repeat this treatment a day or two afterwards. M. L. Smet says that he has thus saved thousands of plants from this pest. M. P. Rébut only recommends the use of freshly ground pepper, to be sprinkled over the plant, but it must be very strong pepper. I have found insect-powder, of the kind that is stated not to injure any plant, to be very useful, as all liquid remedies are dangerous, and often worse than the disease, especially for any delicate *Mamillaria*, unless used with the greatest care, as too much paraffin will soon kill a plant.

The mealy-bug is a sad pest, being so difficult to get rid of, for it gets under the soil during the winter, seeming to prefer the pots with the *Echinopsis* varieties; thus it will be well to turn out and examine the pots with plants of *multiplex*, *oxygona*, or *spiralis* in them early in the spring, as I find these varieties to be more infested than all the other plants put together. Wash

both pot and roots of any having white matter in the earth or round the inside of the pot. The eggs of these insects being microscopic, I even think it best to put the pots on the kitchen stove and give them a good baking before again using them.

The pests of scale and thrip are not so troublesome, as they mostly seem to infest plants that you can easily remove them from by means of a piece of pointed wood. I have found it a good plan to give all such affected plants a change of situation after cleaning them, if only to a light sitting-room, the insect not then reappearing. Scale is said to come from an insect depositing its eggs upon plants that may be too damp, and is like a small oyster, spotting the plant, the insect inside it eating into the plant. Thrip is a smaller insect, appearing generally in clusters, of a light brown colour, and of a long form. They are easily removed, and are most often (with scale) found on *Opuntias*.

Rain-water is best for these plants, as when using it daily in the summer the chalk in spring-water is deposited on the plant, leaving unpleasant spots. When the warmer weather of March and April arrives it is usual to let out the fire of the heating apparatus, many persons not lighting their fires again until the external thermometer gets down to 40° F., but it is better to keep the fire going all the winter, as the house can be so much better ventilated. Great help is also given to the plants when they are growing in May, and even in June, by lighting the fire on the cold days and nights that often come in these months, as the growth is not then checked. Some persons like in the spring to water the plants with a little admixture of ammonia. I have never tried the effect, but think it a sure method for killing any insects in the soil, if it did nothing else.

It is difficult to condense in the short space of a lecture all that may be said on this subject; but if one wishes to study the wonderful works of nature, and to learn the mysterious dispensations of Providence in allotting to each country the plants most suitable to it, he cannot do better than cultivate Cacti, for in any given conservatory you can grow double or treble the number of plants of this kind than of any other sort, as they take up so much less space, whilst their flowers are most gorgeous and beautiful; but whether in bloom or not, their very forms are most pleasing, and a man cannot help being wiser in studying them, and his mind must be in

a very obtuse and stultified state if he does not learn and wonder at the mysteries of this part of the vegetable kingdom. All such thoughts must enlarge the minds of reflective men, and one cannot help wishing that the time may come when Cactus culture shall be more general. About fifty years ago they were thought much more of, and rare plants then fetched more pounds than they would now realise shillings.

It is singular to think that there are now only about twenty-three cultivators of these plants in England, whereas there must be over 23,000 amateurs for other plants. Messrs. Cannell, of Swanley, Kent, have a large collection; Mr. Ludford, of Sutton Coldfield, and Messrs. Carter are also now cultivating them. Anyone wishing plants from their native home could apply to Mr. McDowell, Guajardo Hnos, Monterey, in Mexico, who collects them in their natural habitats, and you would receive them just as torn up; but the carriage thence is high, a small basket costing 20s., and the postal arrangements with Mexico are so unsettled that you have to send the post-office order for him to Laredos, in Texas.

And now, if I have awakened the least interest in anyone who has not yet loved Cacti, or if I have given a particle of information to anyone who has cultivated them, the pleasure of my labour will have a full reward; and should any Cactus lovers visit Somerset, and will come to see me at Frome, they shall have a most hearty welcome.

DISCUSSION.

Dr. MORRIS, of Kew, said he had listened with great pleasure to Mr. Singer's paper, which treated the subject in a thoroughly practical manner. Unless anyone had seen Cacti growing in their native haunts it would not be possible to form an idea of their size and grandeur. It was very curious how some plants—like some species of Euphorbia—took upon themselves the appearance of Cacti, having round succulent leafless stems of great size. In the dry and poor soils of parts of America it was interesting to see how Cacti thrived. Indeed they were the only plants which would grow in such barren tracts. As a proof that too much moisture was injurious, Dr. Morris mentioned that *Cereus Swartzii* grew luxuriantly near Kingston, Jamaica, where it was largely used for fences, but a mile or so

from Kingston, where there was more rain, the plants would not grow at all. As Cacti were, on the whole, so easily grown, Dr. Morris hoped they would become more popular now that attention had been called to them.

Mr. W. WATSON endorsed everything Mr. Singer had said in regard to cultivation, and remarked that some Cactææ would stand a great deal of moisture. In the Palm-house at Kew, which has always an exceedingly moist atmosphere, there had been for over fifteen years some large *Cereus* plants, and these were in excellent health. As a proof of the easiness and negligence with which many plants of this order could be grown, Mr. Watson remarked that here and there throughout the country were to be seen splendid specimens in cottagers' windows, and, as a rule, they were almost left to look after themselves. But the great disappointment was that they flowered rarely, if at all. To obtain this result he recommended that dryness should prevail, and then if the beautiful flowers could be produced there would be no doubt of Cacti becoming popular.

Mr. R. IRWIN LYNCH, of Cambridge Botanic Garden, remarked that Cacti could be grown practically in any soil, provided the grower exercised his common sense. He mentioned that a very good plan was to plant Cacti out in the summer months in frames, from which they were transferred back to the houses in pots in the winter. By this means strong growths were developed for the production of flowers.

[It may be mentioned that many species of *Opuntia*, *Cereus*, *Mamillaria*, *Echinocactus*, and *Echinocereus* have been grown in cold frames in the Herbaceous Department, Kew, for some years past, and at the time of going to press were apparently uninjured by the very severe frosts of January and February—ED.]

FILMY FERNS AND THEIR CULTIVATION.

By Mr. J. BACKHOUSE.

[Read July 24, 1894.]

THE subject of the following paper is one about which much may be said, far more than can possibly be compressed into half-an-hour's discourse, or even into several half-hours. Moreover,

as the Society is meant more especially for the advancement of *Horticulture*, to attempt any scientific analysis of genera or species is beyond the scope of my paper. It is rather meant to give to horticulturists generally a suggestion that in Filmy Ferns we have a class of subjects which have been greatly overlooked up to the present time by the gardening world—a class which, if rightly understood and correctly treated, will prove a vast source of delight to the grower, and that without any serious expense. Even among the more extensive growers of tropical and sub-tropical Ferns, it is astonishing how apparently little appreciated and little known are the Filmy Ferns, especially Hymenophyllums and Trichomanes. Latterly, thanks to the increase of facilities for communication with the Antipodes, horticulturists are somewhat better acquainted with them, and with the allied genus *Todea*; and no doubt they will be more so when the fact becomes generally recognised, that *Todea superba* (the queen of the genus) is so nearly hardy as to bear one of our coldest winters grown out of doors, if properly managed.

Among Ferns the “Filmies” hold a unique place for beauty and variety of form, their delicacy of outline, and, in many cases, marvellous transparency, placing them in the foremost rank among the gems of the vegetable world. “When laden with moisture, especially with moisture condensed upon the fronds by precipitation from the atmosphere, and reflecting a powerful light, no polished emeralds can surpass the sparkling brilliancy of the drops which hang at the tips of almost every pinnule.”

In the following notes I shall endeavour to give a general idea of the claims of the “Filmies” to be grown artificially, and to show that their cultivation, in the large majority of cases, is a matter of no grievous difficulty, provided that certain simple rules are faithfully adhered to.

Reviewed numerically, it is a little surprising to find that out of some 150 to 200 species and named varieties known, only one half, roughly speaking, are now under cultivation; so that there is obviously an open field for the horticulturist in this direction. And surely, in an age of “world-searching,” when other branches appear well nigh on the verge of exhaustion, this fact is a very important one in favour of the cultivation of Filmy

Ferns. Moreover, when we find that of the species and named varieties under cultivation about two-thirds require cool or temperate treatment, it will be readily seen that, as these gems become better known, special attention will be given to the class. Possibly even, at some no very distant date, instead of an Orchid, Daffodil, or Primula conference, our Society will see its way to hold one on Filmy Ferns; and I venture to predict that, should such an event take place in London, the fashion would by no means stop there!

Formerly it was thought necessary to grow *all* Filmy Ferns in an atmosphere densely charged with moisture, whereas recent investigations and trials go to prove that several of the most beautiful species may be grown in comparatively dry situations; so that we now see *Trichomanes radicans* and its varieties, *Hymenophyllum caudiculatum* and *H. demissum*, with its varieties, growing, and not only growing, but luxuriating, among artificial rockwork under the stage of an ordinary greenhouse in shady positions. The probabilities are that many of the very rare, valuable species from elevated regions in New Zealand, Peru, &c. might also flourish in similar positions if someone could be found courageous enough to make the attempt.

To give some idea of the mode of culture for these choice Ferns, let us refer for a moment to a house at York which is some 100 feet long. It is a lean-to, with the glass sloping to the north, and is supplied with a stage on either side of the centre path, having hot-water pipes running under the front one, and is divided into three pretty nearly equal compartments by wooden partitions. Valves are so placed in the pipes that the heat may be regulated in each of the three at will. The temperature of the first compartment averages 60° to 70° in the daytime, and 55° to 65° at night, both in summer and winter. The second one, roughly speaking, is 10° cooler, according to time and season; whilst the third compartment is never heated, but borrows its heat from the door of the adjoining house being left open. This house not unfrequently falls to 32° Fahr.

In this range of compartments, where the water is constantly allowed to stand upon the paths, most of the species of Filmy Ferns known to cultivation grow and thrive in a greater or less degree of perfection, the only exceptions being a few of the species from very hot regions. Of the species cultivated in this

house, about thirty or forty are very readily grown, being in the intermediate or cool portions of the house, and of these a large proportion are very inexpensive, comparatively speaking, and are as easily grown, and quite as beautiful, as many of the rare and costly ones. Such species as the following may be specially enumerated as being a great adornment to a collection of Exotic Ferns :—

Hymenophyllums :—*caudiculatum*, *crispatum*, *demissum*, *demissum nitens*, *dilatatum*, *flexuosum*, and *scabrum*.

Todeas of all kinds.

Trichomanes :—*radicans* and all its varieties, *reniforme*, and *venosum*.

From Java, Borneo, Jamaica, Trinidad, &c., in tropical or sub-tropical regions, come a number of fine "Filmies," many of which are known to horticulture; but these are, to say the least of it, much less modest in their requirements than those already mentioned, and some of them need as much looking after as delicate children until thoroughly established; and even then a change may set in for the worse with little apparent cause. These species are, therefore, less known and appreciated than the others, notwithstanding the fact that their beauty is fully equal to that of their cooler-growing cousins, and, if treated as nature would treat them, would well repay any trouble bestowed on them.

The most noteworthy of these Equatorial Ferns, from the grower's point of view, undoubtedly are :—

Trichomanes :—*alatum*, *auceps*, *auriculatum*, *Luschnathianum* and its varieties, *maximum*, and *meifolium*, the last-named being perhaps the most beautiful of all Filmies.

Almost all Filmy Ferns require the same food, which is a point of no little importance to the cultivator. If potted, the terrestrial forms should be placed in a mixture of peat and rough broken sandstone, and well drained with broken pot or coke refuse. In most cases it is found desirable to let the crown of the Fern be surrounded with stones rather than with soil, as may also be said of certain hardy British Ferns, notably the Parsley Fern, *Allosorus crispus*.

Whilst it is, of course, important to see that the Ferns under cultivation do not lack moisture at the roots, it is equally important not to *over-water* them, and always to remember that they absorb

moisture *from the atmosphere* through their fronds very rapidly. Naturally growing in chinks of rockwork or cavernous places, they are not usually rained upon, their growth being made by absorption at the root, and their vigour and beauty aided by the condensed moisture of the atmosphere resting upon their fronds. Similar conditions are the great desiderata in their cultivation. To secure the possibility of producing a natural dew, it requires some care in keeping the house properly "balanced" in temperature, so that the cold air from without may precipitate moisture held in suspension by the warm air within upon the tender fronds of the Ferns.

Soft water in most places may be used to advantage in preference to hard; but in either case it is wise never to allow the atmosphere of the house in which these plants are grown to become dry. This can be accomplished by damping the paths, and if necessary the stages; but, it is well to remember, it is not a good rule to water or syringe the plants overhead. Where the air is unnaturally charged with chemical substances, as in the neighbourhood of large manufacturing towns, it is advisable to make use of well-water, or filtered river-water, such as is supplied for household purposes.

A very admirable way of cultivating some of the creeping species, which grow naturally upon the trunks or branches of rotten or decaying trees, such as *Hymenophyllums caudiculatum*, *demissum*, *flexuosum*, *hirsutum*, *lineare*, and *scabrum*, is by using sections of Tree Fern trunks, which are now obtainable without much difficulty. The decaying centres of these give suitable nourishment to the Ferns, and ripe spores falling upon the fibrous surface is much more likely to germinate. For stronger growing forms, as *Trichomanes auriculatum*, *Luschnathianum* and *radicans*, with their varieties, the use of rough porous pottery resembling tree-trunks has also been successful. The centre, being hollow, is filled with the requisite soil and stone, and the Ferns planted at the base, their roots obtaining the requisite sustenance by means of holes punctured irregularly through the sides, until by degrees they cover the surface of the stems, and, ascending, attain the open top, and so form a crown of living beauty.

In nearly every case, however, whether the habit of the Fern is dwarf, large, upright or pendent, terrestrial or epiphytal, the

ultimate success or failure in cultivation depends to a very large degree upon the maintenance of a *uniform humidity of the atmosphere*, or its absence.

Formerly the cultivation of these plants in greenhouses was in pots covered with frames or bell-glasses, the result of which, with the moisture resting upon the surface of the glass, was entirely to hide them from view unless the glass was removed—a troublesome process which may well account for the neglect by cultivators of which we have spoken. All this is entirely avoided when they are grown in such a house as has been already described, the plants being at all times visible and presenting themselves in all their elegance of form, delicacy of texture, and varying shades of colour, as the fronds glisten with a moisture reflecting silvery white or emerald green through the drops resting upon their surface.

A still better mode of cultivating “Filmies,” inasmuch as it is a nearer approach to nature, is planting them out in what, for the want of a better term, may be called an “underground fernery.” In this the object sought to be obtained is a similarity of conditions to what may be found in the chinks of moisture-laden rocks or cavernous recesses where these Ferns are found in their native habitats. Many years ago my father constructed such a house, in which these conditions were so nearly attained as to give the appearance of a natural glen or grotto, in which “Filmies” from regions far distant from one another, and varying much in temperature, have continued to thrive and form masses of vigorous growth, which can scarcely be realised until seen. Availing himself, for want of a better stream, of a little land-drain some ten feet or so below the surface of the ground, he dug out the earth on either side and round about in the form of a winding glen, into which he built large stones or “rocks” with as much irregularity of outline and variety of nooks, crannies, and points as nature itself affords, with this little stream meandering over the rock-paved pathway into a pool at the further end, and flanked by high “cliffs” to the roof. This roof he formed of thick rough plate-glass placed flat upon iron girders, so as almost entirely to escape observation. It was laid scarcely below the level of the surrounding ground, and was further obscured by canvas shading fixed on frames running east and west, and slanting at an angle of 45° or more from north to

south, so that no direct light or sunshine should strike upon it. The entrance is by a winding stairway of rough stone steps through a rustic door, which is kept closed to exclude heat in summer and cold in winter and all withering winds. In this house the Killarney Fern luxuriates over a space of several yards, whilst grand specimens of *Hymenophyllum demissum* and *H. caudiculatum* grace the opposite sides, and *Todea superba* forms a crown of untarnished beauty. I need not enumerate the many other kinds which add their charm of wealth and beauty. Such a house needs little attention. Where Nature's conditions are so nearly attained insect pests do not appear. There is no artificial heat. The temperature is equable, being free from the sudden variations of heat and cold, a covering of mats only being given in the severest winters.

I do not wish to forget, however, that Filmy Ferns may be cultivated in a much simpler way than I have now described. Many amateurs, even in crowded cities, do this very successfully. I may perhaps mention the late Mr. Thomas Bewley, of Dublin, who in the centre of one of his drawing-rooms had a case of *Trichomanes radicans*, forming a huge mass of many years' growth. This case, with its clear plate-glass kept free from moisture by one or two of the top divisions being made movable and occasionally tilted, formed a delightful ornament, a thing of beauty scarcely to be forgotten. The late Dr. Cooper Forster may also be mentioned for his successful cultivation of the choicest "Filmies" in the centre of London. Here, in one of his consulting-rooms, in the recess of one of the windows on its northern side, he built up a rockwork encased with glass, in which he grew many of the choicest and rarest *Trichomanes* and *Hymenophyllums*; whilst in the yard below he accommodated many other and still hardier forms in frames protected only in winter by a covering of mats. Other instances of equally successful cultivation, under what are usually considered adverse conditions, might be given; but these will serve to show that with a little adaptation these Filmy Ferns may be grown by anyone.

The only insect we have found these plants liable to are thrips, which follow where the atmosphere has been allowed to become dry. On the appearance of them the plants should be carefully sponged, so as to remove them, or they may seriously suffer. Care should also be taken that in the sudden outbursts

of sunshine in the early months of the year adequate shade is afforded to protect the young growths, which might otherwise be ruined whilst in their most tender stage of development.

THE RELATIONS BETWEEN GARDENERS AND THEIR EMPLOYERS.

By Mr. MALCOLM DUNN, F.R.H.S.

[Read August 28, 1894.]

THE subject on which I have been requested by the Council of the Royal Horticultural Society to speak is one requiring much careful thought and a close discrimination of the various points, so that they may be clearly defined, and the subject dealt with in a spirit of fairness to all parties. It is, however, impossible in a paper of this description to discuss at length the numerous points of the subject in all their bearings, and therefore I must of necessity confine my remarks to the more prominent features of the question, and endeavour to treat them in as exhaustive a manner as time will permit. I am fully aware of the great difficulty there is in making a selection of the heads of the subject, so as to meet the views of all who are directly interested in the question; but whatever I may omit under present exigencies will not, I hope, materially detract from the usefulness of the remarks I shall make on the points I have chosen for discussion.

In the widest sense of the term, gardeners are a very numerous family, comprising several distinct and important branches, but all springing from the same root-stock, and more or less merging into each other. There is (1) the professional gardener, employed in the gardens of the wealthy, and with whom chiefly, and his employer, this paper deals; (2) the landscape gardener, whose duties extend far beyond the garden proper; (3) the botanical gardener, with a somewhat complete knowledge of botany, and generally employed in the cultivation and management of collections of plants; (4) the amateur gardener, who is his own employer, and ought to be on good terms with himself, even if his handiwork is not always so successful as he would like; (5) the public gardener, in

charge of public parks, cemeteries, &c.; (6) the market gardener, a most important section of the profession, dealing exclusively with the commercial side of horticulture, which is fast assuming a leading place among our rural industries; (7) the nursery gardener, whose chief object is the propagation and rearing of plants of all kinds in demand by the public; and (lastly) jobbing gardeners, a class that may be described as an *omnium gatherum* of all the other branches, and who, on the whole, occupy the least enviable position in the ranks of the gardening fraternity. In the pursuit of a living they have to endeavour to serve many masters, a feat of the most difficult nature, if not impossible of attainment, and therefore jobbing gardeners and their employers deserve more of our sympathy in their difficulties than of the censure that is too often thoughtlessly bestowed upon them. In their ranks are many excellent gardeners and employers who have seen better times, but through stress of circumstances, failing health, or misfortune, arising from no fault of their own, find themselves in a position where they are unable to command regular daily service or permanent employment, and as a consequence they have had of necessity to take to jobbing, with all its troubles and uncertainties. These drawbacks in the life of a jobbing gardener are much increased by the crowd of worthless failures who, as a last resource, gravitate to this class from all the other branches of the profession after having been cast adrift by their own folly or incapacity. For every piece of work that comes within the legitimate scope of the jobbing gardener these waifs of the fraternity are keen competitors, and by their plausible representations they too often succeed in cutting the capable and reliable man out of an honest job, which he would perform, if employed, in such a manner as to command the approval of all reasonable people. A remedy for this objectionable feature is not easily to be found, but employers of jobbing gardeners will find it to their own advantage to give preference to the experienced man of good character and sound reputation among his fellows.

The employers of gardeners are as various as the branches of gardening, and perhaps even more difficult to classify in an intelligible manner. In a comparatively limited number of cases the employers are compound bodies, such as (1) the Government, (2) various public authorities, and (3) private trusts and

firms ; but (4) private individuals form the great body of the employers of all grades of gardeners. The chief object of all the employers is the same, viz. to obtain through the services of the gardener an adequate return, in the shape of produce or pleasure, for the amount expended in the maintenance of the establishment, of whatever nature it may be. In commercial gardening the value of the produce is the sole object in view, and pleasure counts for nothing unless it can be made to show a clear money profit on the expenditure in creating it. Public gardening is chiefly devoted to the interests of science and the pleasures of the people ; while private gardening is generally, if not invariably, a combination of both profit and pleasure, the one or the other predominating according to the tastes and circumstances of the owner of the garden. The higher the quality and the larger the supply which the gardener can produce in first-rate style, in accordance with his employer's wishes and the means available, the greater will be his success and the higher ought his services to be appreciated.

Having so far dealt with gardeners and gardeners' employers generally, as bearing on the subject of this paper, I will now direct my remarks more particularly to gardeners and their employers in private establishments, great and small, upon which I believe it is desired I should express my views, which are founded upon a fairly wide experience of some forty years of active life and close observation among professional gardeners and their employers in the United Kingdom. The great mass of the employers of gardeners is composed of persons who either own or lease a certain portion of land, which they desire to use for gardening, or what is commonly called horticultural purposes. The extent of the ground varies from the small single-handed place, which may be taken for our purpose as the lowest grade of the regular professional gardener, to that of many acres connected with royal establishments and the mansions of the wealthy. Be the extent of the garden what it may, great or small, the principles which underlie its management, and the maintenance of it in a proper state of order and efficiency, are identically the same. The details vary to an unlimited extent, which the practical gardener is ever learning ; according to place and circumstances ; but the fundamental laws are everywhere the same, and it is in their successful application, through the

teachings of experience in the ever-varying circumstances of his profession, that the gardener displays his highest intelligence and thoroughly trained skill. A thorough practical training, acquired in different localities and under various conditions, combined with years of careful study and close observation, is generally sufficient to make a capable gardener of a man of average intelligence and industrious habits. The skill and experience he has thus acquired are at the service, for a fair remuneration, of any owner of a garden who desires to employ him on reasonable terms and conditions. A well-trained man, approaching as near as possible to such a standard, of good character and polite manners, is in the best position to secure a choice of good employment.

In choosing a gardener the employer ought to be the best judge of the amount of trained skill and experience that he requires of his gardener. However, all employers are not born judges of men, nor have they learned to judge the capabilities of skilled gardeners, and in such instances it is best for them to be guided by the advice of someone whose experience of men and knowledge of gardening are known to be wide and trustworthy. Acting upon the advice of such a reliable person, the engagement of a well-qualified and suitable man for the place, on reasonable terms as the times go, need not be a matter of any difficulty. In all cases it is best that the main heads of the agreement be set down explicitly in writing, a copy of which should be in the possession of both parties, and the terms of it strictly adhered to so long as the engagement is continued under it. A fair and clear statement of this nature goes a long way to prevent future misunderstandings and numerous heartburnings.

When once the preliminaries are settled and the agreement duly made, it is the absolute bounden duty of the gardener to carry out the clearly expressed wishes and ideas of his employer, and even to anticipate them, where possible, to the utmost of his power and ability, and at all reasonable times. It is, however, equally incumbent on the part of the employer that he should furnish his gardener with the necessary means, materials, and appliances for efficiently carrying out the duties he is called upon to perform. The employer will then be in a position to expect the best results that the skill and intelligence of the gardener can produce, and to see that the purposes for which he maintains

the garden are satisfactorily carried out. Under such fair and reasonable conditions, an intelligent and capable gardener, who is anxious to get forward in his profession, will strive to his utmost to give full satisfaction to his employer, and in ordinary circumstances he invariably succeeds. Such employers and their gardeners may quite legitimately differ at times, but, being reasonable men, they as a rule manage to settle their differences in a friendly spirit, and without unduly straining their relations to each other, or making an unpleasant exhibition of themselves among their friends or to the public. So far as my observations have extended, these conditions are fairly characteristic of the relations that prevail between gardeners and their employers in the United Kingdom, and hence the good feeling which, on the whole, is generally found existing between them—a feeling of mutual respect, sympathy, and esteem that is certainly not excelled, and seldom attained, among any other class of the community.

Still, while human nature and the ways of the world are more variable than even our much-maligned climate, we need not imagine that the wholesome and satisfactory traits of gardening life, which I have attempted to depict, will by any means universally prevail amongst us. Far from it, as we all know too well. Natural infirmities, and careless or evil dispositions, with all their asperities, will, I fear, always remain to interfere with the harmony and good feeling that ought to reign between the employer and the employed. We cannot but deeply regret the failures in life, from man's ignorance, stupidity, and folly, that we daily see around us at this advanced period of civilisation. All fair-minded people would willingly sacrifice much of their personal means and comforts, if thereby they could efface the lack of wisdom and forethought in their fellow-men—a consummation devoutly to be striven for, even although it may never be attained. The nearer we can approach to such a happy state of perfection the better it will be, we may reasonably anticipate, for everybody.

In the meantime, however, we must deal with things as they are, and returning to our subject we find, very much too often, that serious differences exist between certain gardeners and their employers arising from some trivial cause, a thoughtless or hastily spoken word, or a foolish action, of which on mature

reflection they feel deeply ashamed; but, unfortunately, they lack the manly courage and common sense to acknowledge it. The usual outcome is a divergency of opinions, accompanied by an irritable feeling, prone to take offence and apt to go more than half-way to meet it. As the natural result of such a state of things, great dissatisfaction or an open quarrel ensues, and in the end the gardener and his employer part company, with anything but feelings of mutual respect towards each other.

This type of failure to agree is perhaps the one most frequently met with; but with the advance of education and fair ideas of the relations which ought to prevail between all employers and employed, and the cultivation of a spirit of self-restraint and forbearance by all parties, we may hope to see the number of such cases considerably reduced. A decidedly more objectionable class are those who fail through evil disposition and bad conduct, for whom, be they masters or men, no right-minded person feels much sympathy. Of the numerous minor causes of differences between gardeners and their employers, those arising from infirmities of body or mind are most to be pitied and sympathised with, however difficult it may be in their case to effect a cure. In too many instances among the gardeners of this class they really ought not to have entered the profession, in which, from lack of natural capacity or physical strength, they were never likely to prove a success; and their lot in life is made the harder to bear when they learn from sad experience how heavily they are weighted in the race for a living.

Among the several classes of more or less unhappy—or shall we call them unlucky?—gardeners and their employers there are to be found many estimable people, and the pity is the greater that they should follow such devious courses, with so many excellent examples around them of mutual confidence and good feeling existing between master and man. We are fairly entitled to appeal to them, both employers and employed, in the strongest possible terms, to bethink themselves and mend. The employers have it in their power to secure the post of honour in taking the first step towards this desirable consummation by holding out the olive branch of reasonableness, and giving fair consideration to the efforts of the gardener, be they successful or otherwise, to meet their views and give them a fair share of satisfaction from the results of his labour. This will encourage the gardener

who is at all worthy of the name to increase his efforts to please, and which naturally tend to success ; but it does not in the least free him from his incumbent duty to serve his employer to the best and utmost of his ability, and to be ever ready to meet his employer's wishes when clearly expressed, if he is not at all times able to foresee and forestall them.

A frequent source of misunderstandings between gardeners and their employers is the intervention of a third party, whose pettifogging interference and unwise advice too often increase rather than allay irritation, arising often from very trivial causes. In all well-ordered establishments, where the head of each department has his duties strictly defined, and is held responsible for their due performance, in accordance with the desires of the owner and the regulations of the place, difficulties of this nature rarely appear. When they do occur, their cause may be generally traced to some careless, ill-informed, or badly advised source against the evil influences of which all wise persons adopt the necessary precautions, and thus prevent as far as possible these unpleasant disturbances.

Another source of discontent, but one which I have good reason to believe is not so prevalent among sensible men and good gardeners as the noise it makes would lead people to imagine, is the direct interference of the employer in the management of his garden, and in the selection of stock and materials for carrying it on. It has sometimes been said that plants purchased by the employer never thrive so well as those purchased by the gardener ! This remark cuts both ways, but in neither is it complimentary, and both employers and gardeners who know their duties and conscientiously perform them utterly repudiate the unworthy suggestion. The owner and employer, who has the cost to pay, has a perfect right to interfere in any way he pleases in all such matters. The right may not always be discreetly exercised with wisdom, and in that event it is the duty of the gardener to point out the error in a respectful manner, which may or may not be effective in correcting the mistake ; but it is nevertheless his duty to do it, and afterwards to carry out his employer's instructions in a reasonable and proper way. When an employer takes a personal interest in the affairs of the garden, and acts with sound judgment and in a fair spirit, a good gardener is always ready

to welcome him, and to do his best to make the most of the assistance he receives from his employer.

In numerous cases which have come under my notice it has been a pleasure to observe the mutual respect and good-fellowship and the great enthusiasm displayed by master and man when they had jointly contributed to a success. Neither jealousy on the one part nor crass stupidity on the other was allowed to damp the enthusiasm or to mar the gratification they equally enjoyed in the success of their joint enterprise.

Yet with all this it is a well-known fact that unsatisfactory relations are continually cropping up in defiance of regulations and good resolutions, and when once a chronic state of grumbling and discord sets in between a gardener and his employer, the sooner they part company the better for both. The employer may then get a gardener better suited to his mind, and if the gardener does not find an employer whom he can agree to serve, on just and amicable terms, it is his own fault, or the times must indeed be badly out of joint. I might dwell at considerably greater length on the relations which exist, and those that ought not to exist, between gardeners and their employers, but I must resist the temptation to go further into details.

There is one point, however, closely allied to my subject, if not exactly forming a part of it, and of first importance to gardeners and their employers, upon which I may be allowed to say a few words before concluding, and that is the supply of properly qualified gardeners and the demand for them. It is a common complaint among a certain class of the fraternity that "there are too many gardeners." This sort of complaint is by no means confined to the profession of gardening, as every industry by which men live seems to be nowadays suffering from a plethora of aspirants. What is most peculiar in this connection is the propensity to increase the number by many of those who loudly exclaim against the superabundance of gardeners. With rare exceptions, which have little influence on the total number, the rule is that all young lads desiring to enter the profession are engaged, and instructed in the art by a head gardener, generally in a private establishment. Therefore gardeners have the regulation of the supply of properly qualified men more completely under their own control than is the case in almost any other profession that can be named. Yet, grumbling as they do at the

competing hosts which are already in the field, the same parties in numerous instances are seen year after year adding as many as they can, for some inscrutable reason, to the number ; taking on as apprentices, improvers, and so forth as many raw lads as they can employ, paying little or no regard to the mental power and physical capacity possessed by the youths—things which are absolutely necessary to qualify them for becoming in due time competent gardeners. After two or three years' service, such as it is—learning in its true sense is too often sadly neglected—these lads are passed on for others to teach them what they ought to have learned while serving a real and not a sham apprenticeship. The intelligent and persevering among the young men try their best to learn when they get an opportunity, and eventually prove a success in whatever line of life they follow ; but far too many, passing as “ gardeners,” turn out idle or incapable, and go to swell the ranks of the unsuccessful, who grumble and shout “ There are far too many gardeners ! ” I am inclined to agree that there are far too many of that indifferent class of gardeners ; but when all the badly trained and incompetent are weeded out, I have yet to learn the existence of more than a sufficiency of thoroughly trained and capable men. It rests entirely with gardeners themselves, when recruiting their ranks, to see that none are chosen but those youths who are likely to prove a success from their education, intelligence, and capacity to bear the strain of continuous hard work and study. It may not always be possible to accurately gauge the future ability of a lad in his teens, but there is much room for improvement on the somewhat haphazard methods in vogue. A careful selection of the youths available, and a rigid exclusion of all those who are indifferently equipped by nature or education, would prove a decided advantage to both gardeners and their employers, and would greatly enhance the credit of the gardening profession.

The demand for thoroughly trained men of good parts is, generally speaking, equal to the supply, although, for reasons which they cannot control, they have no monopoly of the situations under good employers. For any surplus of young gardeners of average ability and good conduct there is a ready outlet in many other branches of rural industry. I may safely affirm that few, if any other, classes in the community have so many advantageous berths open to them outside their own

profession. For the chief positions connected with the management of landed property—such as agents, stewards, overseers, bailiffs, foresters, and the like—gardeners of ability and good repute have always been eligible and in demand; and in the lucrative appointments of a corresponding nature in foreign countries and British territories abroad they command a large and increasing share. As planters and managers of plantations, as well as in their own special province of horticulture, they have long attained to eminent success in India and the Colonies, and hence the demand for their services in positions of responsibility connected with the cultivation of land and its products. With so many desirable fields of enterprise open to them for the exercise of their abilities and energies, gardeners as a class have no reason to complain of the want of a good opportunity to reap a fair share of the spoils of the world that fall to capable and industrious men. Their early training, laborious though it be, inculcates habits of self-reliance, steady perseverance, and readiness of thought and action to meet and surmount difficulties as they arise, which render well-trained gardeners particularly eligible for positions of trust and responsibility, and hence, no doubt, the confidence placed in them by their employers at home and abroad. Long may such excellent relations flourish and prevail between gardeners and their employers.

LORD BUTE'S VINEYARDS IN SOUTH WALES.

By Mr. A. PETTIGREW, F.R.H.S.

[Read September 11, 1894.]

THE experiment made by the Marquis of Bute nineteen years ago at Castle Coch of planting a vineyard in the open air in this country was a good deal criticised at first. Some of the critics predicted that the vines would never succeed in murky Glamorgan, and that the scheme was sure to end in failure. One of the comic newspapers attempted to extract a little fun out of it, saying that if ever wine was made from the vineyard it would take four men to drink it—two to hold the victim and one to pour it down his throat. *Funny Folks* took a more cheerful

view of the case, and predicted that "wines from Wales would be the drink of the future"; and went on to say, "The Marquis of Bute has, it appears, a Bute-iful vineyard at Castle Coch, near Cardiff, where it is hoped such wine will be produced that in future Hock will be superseded by Coch, and the unpronounceable vintages of the Rhine will yield to the still more unpronounceable vintages of the Taff. Coch-heimer is, as yet, a wine in supposition, but the vines are planted, and the gardener, Mr. Pettigrew, anticipates no *petty* growth."

The first portion of the vineyard at Castle Coch was planted in the spring of 1875, on the French system, as practised in the neighbourhood of Paris, in Burgundy, and the champagne country. The site selected for the experiment lies to the left of the Castle, at a somewhat lower level, with a gentle slope to the south, and, from the nature of the ground, it requires no artificial drainage. It is sheltered from the north by a large plantation, which covers the breast and summit of the hill behind, and from the east and west by smaller hills at some little distance off. It lies quite open to the south, overlooking the Bristol Channel, four miles distant. The soil, which is two feet deep, is a light fibrous loam, resting on a broken limestone rock, just the kind of soil vines grow luxuriantly in. The ground was thoroughly trenched, and the vines were planted in rows from north to south three feet apart, the plants being three feet apart in the rows, and trained to stakes four feet high. At the end of every season the vines are pruned close back, leaving two buds only of the current year's growth.

A great many varieties of the vine are grown in the vineyards of France, but some of the best grown in the South do not succeed when planted in colder districts. I was therefore strongly recommended by the vine-growers in the vicinity of Paris to try the varieties Gamay Noir and Millie Blanch, as being two of the most likely ones to suit our climate. They are extensively grown in the neighbourhood of Paris and in Burgundy and the colder wine-producing districts of France. I acted on their advice. The plants have a strong constitution, produce fruit freely, and make good wine. We were favoured with three or four good seasons in succession after the vines were planted. They grew vigorously and made strong canes, which ripened thoroughly. Gardeners and others who came from a distance to

see the vineyard were surprised at the luxuriance of the vines growing in the open air and simply trained to stakes in the way Raspberry canes are trained in this country. The sight about the end of July is a novel and interesting one. Long rows of vines, as straight as a line, running on a gentle curved slope down the hill, with their tops neatly stopped four feet from the ground, and their large dark green glossy foliage almost meeting in the rows, is a sight not to be seen anywhere else in this country. During these first fine seasons the Royal Muscadine on the walls of Cardiff Castle produced heavy crops of perfectly ripened Grapes. Indeed, some of the bunches were as good as the Grapes that are generally to be found at the *tables d'hôte* in France. I felt very sanguine at this time that the experiment at Castle Coch would be a success in fairly good seasons. The vines were growing luxuriantly, they ripened their canes well, and there were no signs of the dreaded Phylloxera. The only pest that attacked them—and that only a plant here and there—was a fungus called *Oidium Tuckerii*, which gave the affected leaves the appearance of having been riddled with small shot from a gun, but it was soon got rid of by picking off the affected leaves and burning them. When the vineyard was started I could only obtain sufficient vines from France to plant about one-eighth of the three acres allotted to it; but, owing to the vigorous condition of the vines, I soon propagated sufficient from them to stock it throughout.

The first wine was made in 1877. The crop was a light one, but sufficient to make about forty gallons of wine. In 1878 the crop of Grapes was better, but still far from being a full one. The vines were, however, gaining strength, and I expected to get a good crop soon if the seasons proved favourable. The vines broke well in 1879, and showed an abundance of fruit in the latter end of May; but with the cold, wet, and sunless summer that followed the fruit all dropped off, and we did not gather one bunch of Grapes from the whole vineyard. This was not, however, much to be wondered at in a season in which farmers could not get even the corn to ripen. The rainfall for the year was 44.40 inches, which fell on 196 days.

With respect to the cultivation of the vine, I may say that one bad season in which Grapes will not ripen means two bad seasons in succession, for if the Grapes do not ripen the wood

will not ripen either, and it is upon well-ripened wood that a crop of Grapes (or any other kind of fruit) mainly depends.

The vineyard was a failure in 1880 from the cause I have indicated. There was a very good crop in 1881, which made excellent wine. The whole of the vintage, with the exception of a few dozens kept for the use of the Castle, was sold at 60s. per dozen to a wine merchant at Cardiff. Dr. Lawson Tait, late of Birmingham—a noted connoisseur in wines—bought several dozens of it from the wine merchant in question, some of which was sold by auction at Birmingham last year and realised 115s. per dozen. I remember a few years ago sending a couple of bottles of this vintage for the Council of the Royal Horticultural Society to taste. I did so at the request of the Rev. H. H. D'ombrain. They were well pleased with the wine, and pronounced it to resemble a first-class still champagne.

The summers of 1882 and 1883 were both bad, and no wine was made; the vines also on the Castle wall at Cardiff failed to ripen any fruit during these years. In 1884 the summer was better, and we made four hogsheads of wine, and the same quantity in 1885, but the crop in 1886 was a complete failure. The vines, however, ripened their canes well, and in 1887 (Jubilee year) the crop was good. The summer was warm and dry throughout, there was no lack of sunshine, and the rainfall for the year was only 29·82 inches, which fell on 160 days. The Grapes ripened thoroughly, and the yield of the vintage was ten hogsheads of good wine.

Perhaps this is the best place to mention that Lord Bute was so pleased with the results of the experiment at Castle Coch that he instructed me in 1886 to make further experiments with the cultivation of the vine in different parts of his Welsh estates, where there was a probability of its succeeding. After inspecting several places, I selected an eleven-acre field seven miles from Cardiff, close to the shore of the Bristol Channel, as being a most likely place for a vineyard to succeed. Both the character of the soil and the situation are very similar to those of the Castle Coch vineyard; the soil is, however, shallower, being in some places not more than eight inches from the mountain limestone rock on the breast and higher portions of the field. For protection against cattle it was enclosed all round with a barbed wire fence four feet high, and, to prevent rabbits from getting

inside, the fence was covered with strong galvanised wire netting to a height of thirty inches from the ground. Two cottages were built for the use of the workmen to be employed in the cultivation of the vines. About an acre of the field was dug, broken up, and prepared for the vines the first year (1887). We had no rooted plants, and to save time it was planted with cuttings at a distance of three feet apart each way. The early part of the season proved dry and unfavourable for the cuttings to root, and a great many of them died. The blanks were made up the following spring with rooted vines, but neither they nor the previous year's cuttings took kindly to the ground till the third year, when they made strong canes, which ripened well by the autumn. After this the vines got thoroughly established, and grew vigorously, and they now make strong short-jointed canes four feet in length, which ripen well in most years. The situation is earlier than Castle Coch, and the vines are not so liable to be injured by spring frosts, on account of its proximity to the sea. More than two acres of the field are now planted, and one is already in good bearing condition. We are propagating thousands of vines every year, and purpose planting about an acre every spring till the whole field is planted. The variety used (with the exception of a few American sorts grown for experiment) is all Gamay Noir. Millie Blanch I discarded years ago. I found it to be a shy bearer with small berries, and not suitable for vineyard culture in this country. The American varieties, I am afraid, will have to be treated similarly, as they do not appear to succeed in the open here. I have tried a great many varieties since the vineyard was planted, but none of them can be compared to Gamay Noir in habit of growth and fruitfulness. It has a strong constitution, is a free grower, and produces fruit in great abundance, and ripens thoroughly in fair seasons. The specific gravity of the saccharine matter contained in the *must* of this variety—made from the ripest and best Grapes—was as high as 29° last year; while the *must* of the Royal Muscadine Grape, grown on the Castle wall at Cardiff, indicated only 6° of saccharine matter. These latter Grapes were thoroughly ripened, luscious, and pleasant to eat, but not suitable for making wine. I was a little surprised when testing the *must* with the saccharometer at the extremely low percentage of sugar it contained compared with Gamay Noir growing in the open vineyard.

To resume my narrative. In 1890 the season was warmer, the Grapes ripened fairly well, and six hogsheads of wine were made from the vintage. The rainfall for the year was 31·52 inches, which fell on 189 days. The summer in 1891 was of short duration, lasting only about a fortnight. Although the temperature was not below the average, the sunless weather was bad for the Grapes, and resulted in a poor vintage of three hogsheads. Both the temperature and rainfall in 1892 were below the average; there was only 29·27 inches of rainfall, which fell on 147 days. The vines got frosted on Good Friday morning, when the shoots were from three to four inches in length, and showing bunches of flowers in great abundance. But most of them withered and dropped off, and the yield was only two hogsheads of wine. But the vines made strong canes, which ripened well. In 1893 the rainfall was light (33·66 inches) and the temperature high, with abundance of sunshine. The vines, both at the Castle Coch and at the Swanbridge vineyard, produced enormous crops, which ripened thoroughly, and were harvested in the best condition possible. The yield from both vineyards was most satisfactory—in all forty hogsheads of wine, with every indication that it will be of the best quality. This vintage, according to the prices obtained for all the other wines sold from the vineyard (60s. per dozen), is worth, when fit for the market, £3,000. If we could only rely upon seasons in Britain like the last, Lord Bute's experiment in vine culture in the open air would prove it to be a paying industry.

The present season of 1894 has been very unfavourable for the vineyards. During the genial warm weather in April the vines broke well and made strong canes, each bearing from two to three large bunches. But the cold weather and prevailing east winds in May and June retarded early flowering, and the fruit did not set till after the middle of July. Then followed a cold wet time up till the end of August, and, I am afraid, the vintage, which promised to be abundant in the spring, will be almost a complete failure this year.

Before concluding, perhaps I should say a few words upon the cultivation and general treatment of the vines in both vineyards. The plants are propagated from cuttings of one year's growth of cane, selected at the time the vines are pruned. They are made into lengths of about 14 inches, tied in bundles,

and heeled in damp ground, until they are planted in nursery rows a foot apart as soon as convenient, and never later than the month of February.

The permanent vines are—as previously stated—planted in rows at the distance of three feet apart each way, and trained to stakes four feet high. The vines are disbudded as soon as the flower-buds are distinguished on the shoots, and from four to five shoots left on a plant. As the canes grow they are securely tied to the stake, and their points pinched off when they have reached to within a few inches of the top of it. All lateral shoots, as soon as they appear, are stopped at the first joint, and the stopping of sub-laterals is continued throughout the growing season, and the tendrils are pinched clean off from the time the vines begin to grow. The ground between the rows is kept clean and free from weeds by frequent hoeings during the summer, and the vines are pruned as soon after the leaves have fallen in the autumn as possible. Some of the weakest canes are cut clean off, and the strongest and best ripened pruned back to two or three buds from where they started. After the pruning is finished the stakes are thoroughly examined, and all the bad and doubtful ones replaced. The ground is then gently forked on the surface, so as not to injure any of the roots, and top-dressed with short manure from the collieries. This manuring is done once perhaps in three years, according to circumstances.

The paper might appear incomplete without my saying a few words about the vintage, and wine-making at Cardiff Castle gardens. The vintage at Castle Coch commences in most seasons about the middle of October, and lasts for a few days, according to the crop of Grapes. But last year it was nearly a month earlier. We began picking Grapes on September 26, and finished the vintage by the end of the month. The ripest and best fruit is gathered first, and placed in hogsheads with one of the ends out, and carted to the Castle gardens at Cardiff, where the Grapes are pulped by a machine with wooden rollers, and put into a large vat to remain for twenty-four hours to get the tannin properties out of the skins of the Grapes. The *must* is then run off, and the residue pressed and put into barrels to ferment in an underground cellar. The *must* is tested by the saccharometer as soon as it leaves the press, and, if found deficient in saccharine matter,

sufficient of the best cane sugar is added to bring it up to the standard of 30° before putting it into the barrel. The barrels are filled quite full, and the bung-hole placed a little on one side, and left open to allow of all the impurities in the *must* being thrown out during the time strong fermentation lasts. The first fermentation in the barrel lasts for about 25 to 30 days, after which the bung is placed loosely in the hole, and when all danger from fermentation is past the barrel is filled up to the bung-hole, and the bung driven hard home. The wine remains in barrel for three years before bottling it, but it is racked off twice a year—in the springtime and autumn—during that period, so as to fine it down properly and get it into the best condition possible, and free of all sediment. After it is bottled, and the corks sealed with wax, it is stored away in the cellar for at least four years before it is fit for general use.

DISCUSSION.

Mr. J. WRIGHT said that, having paid a visit to Castle Coch vineyard, he was deeply impressed with what he saw there, and came to the conclusion that if wine such as that submitted to the meeting could be produced in South Wales it could also be produced in far more favoured spots in the South of England. At Castle Coch the average rainfall was from 29 to 34 inches—far in excess of that in the South of England. He believed that there were places in England where it would be possible to grow and prepare home-made wine more wholesome and healthy than any from abroad. It was most satisfactory to see the experiment being made in Lord Bute's vineyards, and he hoped that it would be attempted in other quarters.

Mr. W. ROUPELL was of opinion that it was a mistake to make wine in this country resembling sherry. In Germany a good wine was made from the unripe berries, so that it was not absolutely necessary to wait until the Grapes reached maturity. The experiments should be conducted with a view to producing a wine with the character of hock and not sherry. He recommended the July Frontignan as a suitable Grape, as it ripened perfectly in the open air, and was not liable to disease.

Mr. W. N. G. LANCE, on rising to congratulate Mr. Pettigrew on his most interesting paper on vine culture, &c., as a chemist and Fellow of the Society, said he considered the samples of

wine on the table were most excellent as a British production ; not only of full alcoholic strength, but containing an agreeable amount of natural acid tartrate, as well as aroma being far in advance of Grape wines generally manufactured in this country ; and he thought his Lordship was deserving of the very hearty thanks of the Society for the very excellent samples and bringing the matter before the Society.

Mr. PETTIGREW, in reply to a question, said that the vineyard did not prove successful every year, but the produce of 1893 was sufficient to defray the whole of the expenses since the vineyard was started in 1875. Lord Bute had obtained a licence for the sale of the wine, and it was sold in his lordship's name. Mr. Pettigrew also added that in 1893 about 23 hogsheads of wine were made, and not a particle of sugar was used.

Mr. OWEN THOMAS, of the Royal Gardens, Windsor, read the following :—As bearing on the antiquity of the practice of growing Grapes in the open air in England, and making wine of the same, I came across a reference to the subject a few days ago in Tighe and Davis's "Annals of Windsor," where also appears a small sketch of a vineyard which existed on the south side of the Castle as long ago as the year 1155. Again reference is made to the same vineyard in the year 1377, two hundred and twenty-two years afterwards. By the same authority mention is again made of a vineyard as late as 1820, situated in the same locality as those previously mentioned ; but whether vines were cultivated continuously in the open air at Windsor from 1155 to 1820, a period extending over more than six hundred years, no one can tell. However, I will read you the short reference referred to, where it says that among the appendages to the Castle at this period was the vineyard. The pay of the vintiger and the expense of gathering the Grapes are among the regular annual charges relating to Windsor on the Pipe Rolls from the commencement of the series in 1155. Lambarde says that in the Records it moreover appeareth that tithe has been paid of wine pressed out of grapes that grew in the little park there to the Abbott of Waltham, who was parson both of the old and new Windsor, and that account has been made of the charges of planting the vines that grew in the said park, and also of making the wine, whereof some parts were used in the household and some sold for the king's profit.

Stow gives a similar account. He says that in the records of the Honour Court of Windsor Castle, held in the outer-gate house, is to be seen the yearly account of the charges of planting the vines that in the time of King Richard II. (1377) grew in great plenty within the little park, as also of the making of the wine itself. Richard III., in the first year of his reign, granted to John Peirs the office of master of our vineyard or vines nigh unto our Castle of Windsor, and otherwise called the office of keeper of our garden called the vineyard, to have and to occupy the same office by him or his deputy for the term of his life, with the wages and fees of sixpence by the day. In another part of the same work (Tighe and Davis's "Annals of Windsor") mention is made that as late as the reign of His Majesty George III. a little vineyard existed on the outside of the south wall of the lower ward of the Castle and between it and the Castle Hill, and east of Henry VIII.'s gateway, a spot now covered with grass. To anyone desirous of pursuing this subject further, reference is made to Dissertations by Samuel Pegge and Daines Barrington on the former cultivation of the vine in England.

HOW TO POPULARISE ORCHID-GROWING.

By Mr. E. H. WOODALL, F.R.H.S.

[Read October 9, 1894.]

I WILL begin the little address I am to give you to-day by quoting a French proverb which illustrates, I think, my position; for when an Orchid-grower who has only had eight years' experience ventures to talk before experts in the art who have been at it all their lives, he feels bound to apologise for his boldness. The proverb to which I allude is "Parmi les aveugles un borgne est roi," which I may roughly translate as "A one-eyed man is king among the blind." Pray do not think for a moment I suggest that any of my hearers are blind, or even one-eyed; far be it from me to dream of such a state of things. I merely wish to class myself among those who have but an imperfect knowledge of the subject, and therefore am, as it were, only "one-eyed." As to the "blind," I am afraid to say how many gardens one can

find where Orchids are so evidently unhappy—it may be from too much heat or too little moisture in the air—that I think those who will not see they are doing wrong may fairly be called blind. It is to such, and to those who have not yet attempted Orchid-growing, that I address myself, hoping that I may show them something of interest to-day. As in everything else, I take it the first thing is observation; use your eyes properly, and you will soon see whether a plant looks ill or well, and this in Orchids is especially the case. A few days will often show you if a new plant is happy in its strange home. On the other hand, Orchids generally are the most long-suffering plants, and will take years before they actually die from ill-usage, so that there is time for a beginner to learn, and to experiment in all kinds of treatment.

We cannot, I think, hope to popularise Orchid-growing until a fair idea of their modest needs is more common and widespread than it has been hitherto. This is, I think, the first point to be insisted on.

The next and still more important point is to show that it is not necessary to have all manner of Orchid-houses before a man embarks in Orchid-growing; but, on the contrary, that a single house and a cold frame are all that are absolutely necessary for anyone who wishes to add a grace to the ordinary run of greenhouse plants.

I must confess that it would be a great boon to the struggling amateur if the great nurserymen and importers could see their way to telling us briefly, when announcing an importation of new Orchids, whether these plants have been torn from tree-tops or whether they come from the crannies in the rocks; whether they come from the breezy hill-tops or from the steamy valleys; and it would indeed be satisfactory to know if they came from a dry or a wet climate, though, broadly speaking, of course we expect Orchids to have come from a damp climate. We all should benefit greatly by such knowledge, because when a man finds his plants thriving he is much more likely to buy more and increase his collection than the man whose ignorance has made him half kill the plants under his care. An evil that would, I hope, be prevented, or at least greatly lessened, by proper information is the waste—I could almost say “wicked waste”—caused by tearing away these lovely creations from their native

wilds, and perhaps entirely destroying them where they once grew so abundantly, only to kill them in a foreign land; whereas, with proper knowledge and cultivation, it will be possible to say they are only transplanted, and not in any sense destroyed, so as not to rob the world of any of its bright jewels.

The next condition, then, of popularising Orchids is to show they can be grown both easily and successfully. We all know that nothing succeeds like success, and if anyone can show how amateurs with small means, and possibly cramped positions, may yet enjoy a goodly harvest of beauty all the year round from their Orchids, I think it will not be long before fresh admirers will be tempted to try their hands at Orchid-growing. The cultivation of cool Orchids is so well understood by all the large growers nowadays that it is a common sight to many of us to see these plants luxuriating by the thousand in long houses where nothing else is grown. This, unfortunately, inclines us to think they can only be grown well in this way; and what I want to-day to impress upon you is, that an amateur who has perhaps only one greenhouse and a frame may succeed in growing these cool—or, as I would rather prefer to call them to-day, “equatorial”—Orchids as well as those who have fine ranges of houses and all appliances at hand. I have too often heard it stated by successful Orchid-growers that it is impossible to grow Orchids in an ordinary greenhouse; that it will be too hot and dry in summer or too cold in winter, and so on. Now I do not wish to contradict this statement exactly, because it is very nearly true; but yet I think I can suggest a plan—a very simple plan—by which cool Orchids may be grown by those who may have only one ordinary greenhouse where everyday flowers thrive. It will, of course, entail some care and some little arrangement, but I think it can be done very successfully, and great enjoyment reaped after a certain time.

About eight years ago, seized with the desire of growing cool Orchids, I bought a few dozen imported pieces, and duly potted them with peat and sphagnum, and placed them in a rather close and stuffy fernery facing north. After a year's trial I was so much disappointed at their want of progress, and the absence of vigorous growth, or any sign of flower, that I felt something must be done or my plants would dwindle to nothing; so after much cogitation, and reading of any book I could get hold of

which told me of the countries where these plants came from, I excavated a space under a north wall to a depth of eighteen inches, and bricked and cemented the bottom and sides, so that it became watertight. Over this I placed a three-light frame, facing also to the north, and then placed my poor invalid Orchids on inverted pots standing in the water covering the bottom. This was in the end of June, when the nights were just getting mild and genial in the North of England, where the garden is situated.

Before I go further I think I should explain what made me try this, as I had heard, of course, of Orchids being placed in cold frames during the summer; and yet I never found anyone who seemed very successful in consequence of so doing. These Orchids we call cool Orchids grow at high elevations on mountains under the Equator, where there is neither any summer nor any winter season such as we have in northern latitudes; consequently they neither have summer heat nor winter cold, and in the close, damp woods where many of them thrive the atmosphere is always moist. The light is constant all the year round; there are no short, dark days, and no fierce, drying sunshine or winds to blast them; yet the nights there are always cool, and the intensity of the light such, and so constant, that the shade is tempered to a degree we have little idea of. It seemed to me probable, then, that if I could manage to reproduce their natural condition of moisture, air, and light sufficiently perfectly in summer they might endure our dark winter days without much loss of strength.

With this idea, then, I put my Orchids into this cold frame facing north, and with an inch or two of water covering the bottom. On every still, mild night the lights were entirely drawn off, so that the plants should get all the dew and cool night air, and every drop of rain that fell. On windy, dry nights the frame was closed. During the day it was aired but slightly and shaded rather heavily, to prevent the sun raising the temperature much; but whenever it rained the lights were always drawn off entirely. By this means the plants in a wet summer never required any watering beyond that they received as dew and rain; they were cool and moist both by day and night, and yet had abundance of air, unless a high and drying wind prevailed; and I watched the result of my little experiment with much interest.

After the first shock had passed, caused by the change from the fernery to a cold frame with the lights off at night, I saw a steady improvement set in: the young growths took new life; the old pseudo-bulbs became plump; fresh roots appeared everywhere amid the green and rampant sphagnum, which found itself once more as if on its native heath; and by the end of September, when I took my plants again indoors, they looked as much better for the tonic open-air treatment they had enjoyed as any young party of children ever did fresh from a trip from the seaside.

Pleased as I was at the unexpectedly great success of the frame treatment, I did not put them again in the fernery facing north for the winter, but boldly placed them in a cold plant-house where Roses and Azaleas thrive, and the useful and ornamental Chrysanthemum blooms in autumn, as I was so satisfied that plenty of fresh air and light had much to do with their health. I gave them an eastern aspect close to the glass and with a saucer of water beneath each inverted pot, so that there should be no lack of air-moisture, and no need to deprive other plants of their accustomed ventilation. Here they continued to thrive until really severe weather rather checked some of them; but with the first return of spring all went well, till I had to devise canvas screens and shading to keep off the March sun and March east winds. By this means I was able to keep them in good health till the joyful time came round for turning them out again into their summer quarters. This second summer they grew away at once with increased vigour, and by the time the first chill of autumn came in September I was able to show fine spikes of bloom pushing up from really fine, strong, healthy plants. I will not weary you with more details as to potting, &c., but merely say that from that day in 1885 when I first put out these Orchids till the extraordinarily hot and dry year of 1893 I never had a check to my success. In that exceptionally hot and dry year of 1893, when no rain fell for weeks together, and nights were as hot and as dry as the days, these Orchids did not do nearly as well as usual. A few indeed really suffered, showing, I think, how inferior a watering-can is to the gracious rain and dew of heaven, which is life and strength to all Alpine Orchids, and a sure means of recovery to plants that have exhausted themselves by flowering. Each year I have tried some fresh species of Orchid in this frame, and

generally have found it beneficial. I must not forget to say that the cold plant-house treatment in winter is quite as satisfactory as I could desire till March suns are blazing on the eastern glass. A north aspect with reed blinds would no doubt then be preferable ; but I wish to show it is not necessary to have special houses and special aspects for these Equatorial Orchids.

When I first began growing Orchids in this way I only put out into the cold frame

Odontoglossum crispum,
 „ *Pescatorei*,
 „ *gloriosum*,
 „ *hebraicum*,
 „ *triumphans*,
 „ *Rossi majus*,
 „ *maculatum*,

and such intermediate forms as I possessed. I now place in the frame such as

Epidendrum vitellinum,
Odontoglossum grande,
Ada aurantiaca,
Trichosma suavis,
Cochlioda Noetzeliana,

all of which enjoy their summer outing enormously, and will winter in a cold house. *Oncidium*s I find the most intractable : they enjoy the plant-house winter quarters, but do not thrive with this cold-frame and open-air treatment. They need, I think, more sun and air by day, and a warmer night temperature than we usually enjoy in Yorkshire. For them I have thrown out a window-case opening from the plant-house, always open to it, and well exposed to the eastern sun. Like the frame, the bottom of this stand is cemented so as to hold water and create a moist atmosphere, in spite of the abundant ventilation in the plant-house. Here a few Orchids that did not like the cooler treatment have done well, specially

Oncidium Gardneri,
 „ *Forbesi*,
 „ *varicosum*,
 „ *concolor*,
 „ *dasystyle*,
 „ *cheirophorum*,

also Pleione lagenaria,
 ,, Wallichi,
 ,, Reichenbachiana,

which thrive well under plant-house conditions in winter, and flower capitally in autumn. There are several others that do well with me in the ordinary plant-house—*Disa grandiflora*, for instance—but I prefer to plunge it out of doors, after flowering, in a shady spot, and not bring it back till I pull it to pieces and re-pot the young growths in October.

Cypripedium insigne montanum and the hybrid *C. Leeaanum* thrive extremely well under the shade of the Azaleas, and need no change of quarters all the year round. *Cattleya citrina* thrives in this same house from March to November; but it needs a warmer and moister house in winter, when it is making its growth. It should, however, be replaced in a shady nook of the cold house in March, when the flower-buds are first visible, or it will be weakened for another year. There is another Orchid I would mention as enjoying summer-frame treatment, which needs warm or intermediate winter quarters—that is, *Miltonia vexillaria*. I have not mentioned it before, because it will not stand really cold winter weather in the plant-house; but there is no Orchid more thoroughly enjoys frame treatment in summer.

There is one Orchid I have found absolutely intractable, which is *Oncidium crispum*, and if anyone will tell me how to keep it in good health for more than two or three years I shall be most delighted to try his plan.

I have now made out, I think, a very sufficient list of Orchids that can be well grown by those who possess one greenhouse and a frame or two, and if I can persuade anyone living in fairly pure air to try my plan I feel sure it will succeed. For those in smoky districts, where the air and rain are laden with chemical products and sooty impurities, I can only say for their consolation that *Cypripediums* seem singularly able to stand smoke, and that if sphagnum will stand the sooty rain, the Orchids too will do the same. It is a curious instance of the adaptability of nature that we should find sphagnum our most valuable adjunct in growing Orchids, when it is unknown in their native habitats; and yet it is to us an almost infallible proof that conditions are favourable for our cool Orchids when it is

green and flourishing. Just as when one translates a book into a foreign tongue the idea must remain the same, while the words themselves are changed, so must our Orchids have the same conditions, while their surroundings may be utterly changed.

I must not forget to add that if any Orchids show bloom while in the frame I take them out when ready to expand and place them in the shadiest part of the plant-house, so that the petals shall not get spotted by damp or dashed by heavy rains. In many instances I find they last longest in a sitting-room where no gas is burned at night, and I do not find the plants injured seriously when grown in this hardy fashion.

An Orchid I should specially like to recommend to amateurs as suitable for an ordinary cold plant-house in winter is *Disa grandiflora*. This is an Orchid that is considered difficult to grow near London, and it is, no doubt, so sensitive to smoke or any impurity in the air that only those who live in the country should attempt it. For those, however, whose gardens are in pure air, and who have plenty of soft or rain water for their plants, it is a plant that everyone who is a gardener should grow. Pot it in Fern-root and clinkers, putting each tuber against either clinkers or freestone lumps; surface with sphagnum moss or not, as you please, it is sure to do well in a cool and damp house near the glass in winter; in the spring place it in a more shady corner, with a saucer of water beneath the inverted pot it should stand upon, and keep it syringed, well watered, and free from fly or any pest till it has flowered, which should be in July or early August. Then plunge it outside under the shade of a hedge, and leave it, after once watering, to the dew and the rain. In October take up the pots, pull the young growths asunder, and start afresh for another year's round.

To those who have a vinery and a tolerably warm house in which to winter their Orchids and other plants, I know of no more beautiful, lasting, and delightful Orchid to grow than *Vanda cærulea*. This, too, is an Orchid that has a reputation of being difficult to grow well and keep in health. I think, therefore, that if I state briefly the conditions under which it grows when at home, gardeners will see why they have failed so frequently. I have already mentioned how *Odontoglossums* grow under the Equator, and have spoken of the close, damp

woods where they are found. *Vanda cœrulea*, on the contrary, grows on exposed hill-tops, on Oak-trees, not close to the Equator, but on the verge of the Northern Tropic, and, of course, at a very considerable height, as it grows on so hardy a tree as an Oak, that is closely allied to our northern trees. What does all this mean? Surely that, in the first place, it delights in the full sweep of the wind (an exact contrast to the *Odontoglossums*); and, secondly, that it must have a winter and a summer, and therefore a wet and a dry season as well. We are told by meteorologists that when the sun is vertical—that is, straight over our heads at midday—then is always the time for those heavy rains we hear of in the Tropics; so then it follows that the summer is very wet and the winter cool and dry on the northern edge of the Tropics. The Oaks on which *Vanda cœrulea* grows are deciduous, we are told—another indication for us, if we will take the hint. Briefly, then, *Vanda cœrulea* requires plenty of moisture and abundance of air in summer, with a good canopy of leaves to shade it and keep it cool. In winter it needs all the sunshine it can get, with a dry, cool rest, close to the glass, always with as much air as can be given. Following out this idea, I have had great success the last five years with this Orchid, and I have carried out its treatment in this way. In March, when our Muscat vinery is first shut up and the vines syringed, I put my baskets of *Vanda cœrulea* on a side shelf near the water-tank, and close to the lower ventilators. Here they are treated just like the vines, and are syringed well every day. As the sun gets hotter the vine-leaves grow, and by degrees the *Vandas* get heavily shaded; while in summer, when the vines have abundance of air both at top and bottom, they are in a perfect gale of wind in our exposed garden when west winds are blowing. Here they flower gloriously in August, September, and October; and I much regret that my fine old specimen, that had eight long spikes on it, with flowers five inches across, and of the loveliest shade of tender blue, is now past its best, for I had hoped to have shown it to you as the result of five years' growth. In November, when the *Chrysanthemums* are in this house, I think it wise to put the *Vandas* in more warmth till the sun is gaining new power in the first days of February. I then hang them up near the ventilators in a little span-roofed house where we grow Carnations, Gera-

niums, Primulas, and such plants. They are kept very dry now, having been gradually allowed to rest through the dark days; and, unless they shrivel, I do not give them water at all, as I find the one essential is a perfect and somewhat prolonged rest in cool, dry air. To see the way these yellow sun-burned leaves turn green and fresh, and to see the vigorous young roots push when in spring these baskets, after being re-surfaced and dressed with fresh Fern-root and moss, are placed anew in the genial atmosphere of the vinery, is a delight to a gardener who likes to see his plants happy; and though I should fear "spot," which comes from damp and airlessness, I do not mind a little shrivelling or yellowing of leaves in early spring, knowing well how necessary this cool, dry rest is to their well-being and free-flowering later on. I need hardly say this is especially an Orchid that needs a pure air and a clear sky in winter.

I think I have now trespassed sufficiently on your patience, and can only hope I have made myself clear enough to tempt new beginners to try these Orchids. They will inevitably try their hand at others. My experience leads me, at any rate, to this conclusion.

OUR COMMON VEGETABLES: THEIR ORIGIN, HISTORY, AND VALUE AS FOODS.

By the Rev. GEORGE HENSLow, M.A., F.L.S., &c.

[Read October 23, 1894.]

THE edible parts of plants used as our common vegetables are supplied by roots, stems, leaves, flower-buds, fruits, and seeds. A selection of the more important will be given in the following observations.

ROOTS.

TURNIP.—The Turnip is derived from a variety of *Brassica campestris*, L., of the order *Cruciferae*. It is usually named *B. Rapa*, L., the Rape being derived from *B. Napus*, L. Authors, however, are not all agreed upon the differences between these two being specific. Gerarde (*Herball*, 1597) united the two, and the late Professor J. Buckman considered them as identical.*

* *Treasury of Botany*, s.v. Pliny also observes: "The Turnip is pretty nearly of the same nature as the Rape" (xviii. 35).

Mr. Dyer thinks that the variety *oleifera*, D.C., having a slender spindle-shaped root, is the Linnean type, and may be a starved state of the Turnip.* The difference between the Turnip and the Rape probably arises from the object and method of cultivation. If the *seed* be selected for its oil, then, by the law of compensation, the root will not assume the enlarged form, and *vice versâ*.

With regard to the geographical distribution of the Turnip, all the *Brassicæ* are of European and Siberian origin. They are still to be seen in these regions, wild or half-wild, in some form or other.†

The Turnip was well known to the ancients. Pliny, writing in the first century, describes several varieties; but it is difficult, if not impossible, to separate them in his descriptions from the Radish, and even, perhaps, from Beet. "In the fifteenth century it had become known to the Flemings, and formed one of their principal crops. The first Turnips that were introduced into this country are believed to have come from Holland in 1550." ‡

RADISH.—*Raphanus sativus*, L., order *Cruciferae*, has been proved by M. Carrière to be the cultivated form of *R. Raphanistrum*, L. § This plant is naturally distributed over N. Europe, N. Africa, N. and W. Asia to India. The Radish has been grown in gardens from the earliest historic times, from Europe to China and Japan. || Herodotus, writing in the fifth century B.C., speaks of a Radish, which he called *surmaia*, eaten by the builders of the great pyramid (built probably between 3,000–4,000 years B.C.). The Radish is also figured on the walls of the temple at Karnak in Egypt. ¶ Gerarde (1597) gives two figures of *Raphanus sativus*, of which "there be sundrie sorts," as he says. One has an oblong, the other a globular-shaped root. The former closely resembles one (No. 5) of the eight figures of M. Carrière. On p. 184 Gerarde figures two varieties of what he calls *R. orbiculatus* and *R. pyriformis*. It is, however, noticeable that both these are represented as having

* Hooker's *Student's Flora*, 3rd edition, p. 32.

† *Origin of Cultivated Plants*, by A. de Cándolle, p. 37.

‡ *Treasury of Botany*, "Brassica."

§ *Origine des Plantes domestiques démontrée par la culture du Radis sauvage*.

|| A. de C. *op. cit.* p. 29.

¶ The present indigenous variety in Egypt is a large white sort with long tapering leaves. The European Radishes are also cultivated.

only two-seeded pods, with a deep constriction between the seeds. This character, as well as the larger lobes to the leaves, agrees better with those of *R. maritimus*, Sm., a plant found on our shores from the Clyde southwards, so that it would seem probable that both these species, if they be not varieties only, have given rise to garden Radishes.

With regard to the forms of the roots, M. Carrière found that when seed was sown in a loose soil a greater proportion of long-rooted forms were produced; while the globular or Turnip-rooted forms prevailed in a stiff soil.* Pliny records a very similar fact, for he says of the "Rape": "The Greeks have distinguished two principal species of Rape, the male (the turnip-rooted) and the female (the long-rooted); and they have discovered a method of obtaining both from the same seed, for when it is sown in a hard, cloggy soil the produce will be male."† Again: "Some authors have mentioned a plan of making a hole with a dibble and covering it at the bottom with chaff, six fingers in depth. Upon this the seed is put, and then covered over with manure and earth. The result of which is that Radishes are obtained fully as large as the hole is made."‡

It may be here added that very large-rooted Radishes are apparently one result of the Mediterranean climate; for enormous roots may be seen in the markets of Gibraltar and Cairo, and it is said also in Japan. The flavour appears to be somewhat inferior to that of our own produce.

PARSNIP.—*Peucedanum (Pastinaca, L.) sativum*, Benth., order *Umbelliferae*, occurs wild from Durham and Lancaster southwards. It is common on the limestone of Gloucestershire and on the chalk of Dorset, &c. It ranges from Europe to Siberia.

The Greeks and Romans cultivated Parsnips and Carrots, which the former confounded under the name *Staphylinos*. It appears from Pliny that "the wild Parsnip was eaten after having been transplanted, or from seed; but it preserved its strong, pungent flavour, which it is found quite impossible to get rid of."§ This seems to imply that the ancients did not know

* This has been corroborated by M. Languet de Sivry with the Carrot (*Soc. Roy. et Cent. d'Agricult.* 2nd ser. vol. ii. 1846-7, p. 539.

† *Nat. Hist.* xviii. 34 (Bohn's trans.).

‡ *Nat. Hist.* xix. 26.

§ *Nat. Hist.* xix. 27.

how to improve by gradual and prolonged selection. As an example of experimental "ennoblement" of the Parsnip, that of the late Prof. J. Buckman may be mentioned.* He sowed seeds of the wild plant in the botanic garden of the Cirencester Agricultural College in 1847, and raised a garden form by selection, which he called "The Student." Giving it to Messrs. Sutton & Sons in 1851, that firm gradually "improved" it, and finally issued it. It still remains, after more than forty years, the best Parsnip in the trade.

CARROT.—*Daucus Carota*, L., order *Umbelliferæ*. This plant is found wild from Europe and N. Africa to N. and W. Asia and India.

That the cultivated form is derived from the wild species has been proved by M. Vilmorin and others. M. Vilmorin † sowed seed of wild plants, and found that they flowered *successively* through the summer. Collecting the seed from the latest, and by sowing this again late in the following season, he encouraged the enlargement of the root. By this means the Carrot was induced to flower permanently in the second year of growth.

Hence the garden form is now a biennial, instead of being an annual, this acquired habit having become hereditary.

The Carrot is supposed to have been introduced into England as a vegetable by the Dutch about 1558. It is said to have been first grown about Sandwich.‡

BEETROOT.—*Beta vulgaris*, var. *maritima*, L., natural order *Chenopodiaceæ*, is the origin of Garden Beet, Sugar-Beet, as also of the White Beet or Chard and Mangold Wurtzel (var. *Cycla*). It is a native of Europe, N. Africa, W. Asia, and India. The earliest cultivation, if the references can be trusted, would be from 300-400 B.C. The Sugar-Beet first began to be cultivated for sugar in 1747.

Chard, or the central whitened leaves, especially the mid-ribs, was the edible part with the ancients. Thus Red Chard is noticed by Aristotle 350 B.C. Theophrastus knew of two kinds, white (*sicula*) and black (really dark green). Pliny also describes

* *Journ. of the Royal Agricult. Society of England*, vol. xv. pt. 1, p. 125, 1854.

† *Notice sur l'Amélioration de la Carotte sauvage* (see also *Trans. Hort. Soc.* 1840).

‡ *Treas. of Bot.* "Daucus."

them,* and says they were eaten with lentils and beans. It was introduced into England in 1570.

STEMS.

THE POTATO.—*Solanum tuberosum*, Bauhin, natural order *Solanaceæ*, a native of the higher ground of Peru. It was first introduced into Spain and Italy by the Spaniards at the close of the fifteenth century, who found it cultivated in South America. It was then called "Battata," from which the word Potato is derived. Gerarde received it from Virginia in 1584, and calls it *Battata virginiana* and *Papus hispanicus*. The English colonists of Virginia probably received it from some of the Spaniards who had also settled in the Southern States of North America. It was first cultivated in Ireland by Sir R. Southwell (1693), but it was not generally grown in England till about 1770.

A species, *S. Maglia*, Schlect., was found by Mr. Darwin in the lower maritime regions of the Chonos Archipelago in 1834, and it is hoped that some good results may follow from hybridising these two species, upon which Messrs. Sutton & Sons are experimenting at the present time, in producing a Potato less liable to be attacked by the *Phytophthora infestans*.

JERUSALEM ARTICHOKE.—*Helianthus tuberosus*, natural order *Compositæ*. This plant is a native of the Northern United States of America.† It was cultivated by the Indians of Huron and New England at an early date, and was introduced into England in 1617 as "Battatas de Canada." It is allied to *H. annuus*, the Sunflower, thought by Linnæus and subsequent authors to be of Mexican origin.‡ The word "Jerusalem" is a corruption of the Italian word "Girasola," meaning "turn to the sun." The word "Artichoke" is derived primarily from the Arabic "Kharchoûf," which appears as "Alcachofa" in Spanish, corrupted into "Articocco" in Italian, and hence our word "Artichoke."

* Bk. xix. c. 40. Pliny describes its culture, but the root was apparently only used in medicine (bk. xx. c. 27).

† Prof. A. Gray considered *H. doronicoides*, a native of the Mississippi Valley, to be most probably the original of *H. tuberosus*.—*Notes on the History of H. tuberosus*, by J. Hammond Trumbull and Asa Gray (*Am. Journ. of Sci. and Arts*, 3rd ser. vol. xiii. 1877, p. 347).

‡ Prof. Gray was "convinced that its original is the *H. lenticularis* of Douglas, which, again, is probably only a larger form of *H. petiolaris* of Nuttall, natives of the western part of the Mississippi Valley and of the plains to and beyond the Rocky Mountains" (*l.c.* p. 352).

ASPARAGUS. — *Asparagus officinalis*, L., natural order *Liliaceæ*. This occurs wild on the coasts of Wales, Cornwall, Dorset, and the Channel Isles. In the southern parts of Russia and Poland the waste steppes are covered with it, and it is there eaten by horses and cattle as grass.* It was highly esteemed by the ancient Greeks and Romans 200 B.C.† It has been long cultivated in England. Gerarde (1597) figures five kinds, one only being the garden Asparagus. It is one of the few vegetables which has remained true to the wild form for upwards of two thousand years of cultivation.

FOLIAGE.

CABBAGE.—*Brassica oleracea*, L., natural order *Cruciferae*. It is a native of the coasts of England and Wales, of the Channel Islands, and of W. and S. Europe. Theophrastus (300 B.C.) knew of three kinds only—the loose broad-leaved, the closely-packed, and the crisped-leaved. Pliny in the first century A.D. mentions several varieties, and says that they were the most highly esteemed of all garden vegetables. Eighty-seven remedies were credited to the Cabbage. He tells us that “small shoots thrown out from the main stem, of a more delicate and tender quality than the Cabbage itself, were cut in spring.”‡ Pliny also, alluding to the “Arcinian Cabbage,” says: “Beneath nearly of all the leaves there were small shoots peculiar to this variety.” It would seem from the description that this form corresponded with the kind described and figured by Gerarde, viz. No. 7, *Brassica prolifera*, “the double Colewort.” He says: “Double Colewort hath many and large leaues whereupon do grow heere and there other small iagged leaues, as it were made of ragged shreds and iaggs set vpon the smooth leafe, which giueth shewe of a plume or faune of feathers.”

It somewhat resembles the fringed Primroses and Cyclamen flowers,§ and appears to be due to hypertrophy coupled with a multiplication of the fibro-vascular cords of the midribs, &c. In

* *Treas. of Bot.* “Asparagus.”

† After gathering the berries for sowing, the stems were burnt down; the ash was therefore restored to the beds (Pliny, *Nat. Hist.* bk. xix. 42.)

‡ Bk. xix. c. 41. *Cymæ*, or “Sprouts.” Mr. Sturtevant regards them as flowering shoots. If so, it would refer to some form of Broccoli (*Amer. Nat.* 1887, vol. xxi. p. 438).

§ Described and figured in the *Gardeners' Chronicle*, 1885, vol. xxiii. p. 536.

one kind of this proliferation the excrescences take the form of funnels at the extremities of the ribs. De Candolle, in his paper on the Cabbage, describes and figures it as *B. costata nepenthiformis*.* A few years ago nearly every plant in a bed in the garden of Sir J. B. Lawes at Rothamstead was characterised by this peculiarity.

The Cole-rabi (or Kohl-rabi), *Brassica oleracea caulorapa*, is remarkable for its swollen stem. It appears to have been introduced into Germany from Italy about 1558, and into Tripoli about 1574. It was known to Gerarde (1597), but it is not clear whether it was known to Pliny. His description of the "Corinthian" Turnip seems to agree with it, of which he says: "The root is all but out of the ground; indeed this is the only kind that, in growing, shoots upwards, and not as the others do, downwards into the ground."† It is a common food in Malta.

The Brussels Sprouts.—These were commonly grown in Belgium in 1820, and also in French gardens, but not generally known in England before 1850.

The Broccoli.—The earliest notice of this variety appears to be in Miller's Dictionary, 1724, where it is called the "Sprout Colliflower." It seems to have originated in Italy. Being sown in September there, as in Malta, it is cut in April or May.

The Cauliflower was earlier known, being mentioned by Dodonæus 1553 or 1559, and figured by Gerarde, 1597, though it was rare in Parkinson's time, 1629. The form is due to a partial suppression of the floral organs, accompanied by a great development of the pedicels, similar to the Feather Hyacinth, *Bellevalia comosa*. The following description of its origin is by M. Vilmorin:—

"The Sprouting or Asparagus Broccoli represents the first form exhibited by the new vegetable when it ceased to be the earliest Cabbage, and was grown with an especial view to its shoots. After this, by continued selection and successive improvements, varieties were obtained which produced a compact white head, and some of these varieties were still further improved into kinds which are sufficiently early to commence and complete their rustic growth in the course of the same year. These last-named kinds are now known by the name of Cauliflower."‡

* *Trans. Hort. Soc.* v. p. 1.

† *Nat. Hist. Bk.* xix. c. 25.

‡ Vilmorin, *The Vegetable Garden*, 1885, p. 95.

As illustrating the origin of the many varieties of *Brassica oleracea* by cultivation, Prof. Buckman raised varieties from the seed of wild plants collected from Llandudno, "some having short petioles and the close-hearting condition of Cabbages, both green and red, the tendency [to vary] being much increased by repeated transplanting. Others, with longer petioles and lyrate leaves, seem to take on the looser method of growth of Kales, &c." With reference to persistency of form, Prof. Buckman adds: "It may be remarked, as throwing some light on the nature of the changes by which the cultivated varieties of this genus have been attained, that experiments with seeds of plants showing any particular tendency, and especially if repeatedly grown in the same soil, will ever result in an increase of the same peculiarity."*

SEA-KALE.—*Crambe maritima*, L., natural order *Cruciferae*, a native of various parts of the English coast. It was well known to the Romans, who collected it wild, and preserved it in barrels for use during long voyages. "It was called *Halmyridia* from its growing on the sea-shore only."† Pliny's description of preparing it with oil and salt is very suggestive of an origin of Sauer-kraut.

Unlike the Cabbage, which is prone to vary greatly, the Sea-kale, like Asparagus, is a good illustration of a plant exhibiting "persistence of type," the present cultivated form being but slightly different from the wild one. It was not cultivated until the eighteenth century (1767).‡

SPINACH.—*Spinacia oleracea*, L., nat. order *Chenopodiaceae*. This does not appear to be known wild, but may be a cultivated form of *S. tetrandra*, Roxb., a native of Persia. It was unknown to the ancient Greeks and Romans, being new to Europe in the 16th century. The name is derived from the Arabic "Esbanch," which indicates its Eastern origin. Its cultivation is said to have been common in Nineveh and Babylon. A Spinach figured by Gerarde would seem to be some indeterminable form of *Chenopodium* or *Atriplex*. It is noticed in Turner's *Herbal* of 1568 as "an herb lately found and not much in use."

ONIONS.—*Allium* species, natural order *Liliaceae*. Those species which are more or less in general cultivation are the

* *Treasury of Botany*, "Brassica."

† Pliny, *Nat. Hist.* bk. xix. c. 41.

‡ See *Treasury of Botany*, "Crambe."

following: The common Onion, *A. Cepa*, L.; Garlic, *A. sativum*, L.; the Shallot, *A. ascalonicum*, L.; Chives, *A. Schœnoprasmus*, L.; Rocambole, or Sand Leek, *A. Scorodoprasum*, L.; and the Leek, *A. Ampeloprasum*, var. *Porrum*, L.

The common Onion is one of the earliest of the cultivated species. It was used as a spell in Chaldea, possibly 5000 B.C.* It is probably the *Krommuon* of Theophrastus and *Cæpa* of Pliny. One variety was worshipped in Egypt, and Garlic and Onions were invoked by them when taking an oath. Pliny says "there are no such things as wild Onions," but later botanists have discovered *A. Cepa* as truly wild in Beluchistan and neighbouring countries. Gerarde figures only two varieties, the white and the red.

The Spring or Welsh Onion, or Rock Onion of Russia, *A. fistulosum*, is a native of Siberia and Russia. It has been grown in England since 1629. † Like the Leek, it does not form a bulb.

Garlic is wild in the desert of the Kirghis of Sungari. ‡ It is very ancient and widespread in cultivation. Herodotus mentions it as grown in Egypt, upwards of 3000 B.C.§

The Shallot, *A. ascalonicum*, is believed to be the same as the Ascalonian Onion of Pliny, who says "it is so called from Ascalon, a city of Judæa." Theophrastus, however, as also A. de Candolle, || regards it as a form of *A. Cepa*. It is not known wild. It was introduced into England in 1548.

The Chive occupies an extensive area in the northern hemisphere, both in the old and new worlds. It is found wild in some of the northern and western counties of England and Wales. A variety to be met with in the Alps appears to be nearest to the cultivated form. It is very possibly the same as the *Scorodon schiston* of Theophrastus, but it might have been collected wild.

The Rocambole, or Sand Leek, occurs wild from Yorkshire and Lancashire to Fife and Perthshire, as well as in Ireland. It is not of ancient cultivation, though of European origin, as it is not mentioned by Greek and Latin authors.

* Mentioned in the "Library of the Kings of Shumir and Accad." See *The Story of the Nations—Chaldea*.

† It is figured in the *Bot. Mag.* No. 1230.

‡ De Candolle, *Origin of Cult. Plants*, p. 64.

§ He says that an inscription was on the great Pyramid in his day, stating that 1,600 talents had been paid for Onions, Radishes, and Garlic for the workmen who built it—probably about 3300 B.C.

|| *Origin of Cult. Pl.* p. 64.

The Leek is the cultivated variety of *A. Ampeloprasum*, L., common in the East and Mediterranean regions, and especially Algeria. It is naturalised in England. It was well known to the ancients. Pliny observed that the Emperor Nero used to eat Leeks and oil to improve his voice, and that the best came from Egypt. It is usually a non-bulbous form under cultivation; but the ancients used to make it produce bulbs by transplanting and cutting off the green tops, as described by Pliny. Gerarde's figure of the Leek shows a decided tendency to produce a bulb. I have found it wild and always bulbous in Malta.

LETTUCE.—*Lactuca Scariola*, L., var. *sativa*, natural order *Compositæ*. This is a native of South Europe, and occurs from the Canary Islands to East Asia. It has lately been discovered by Dr. E. Sickenberger in South Egypt. It also occurs in many counties of England, but is a rare plant. It was cultivated as a salad by the ancients, and also used as a sedative. Lettuce appears to have been the "opium" of Galen, the physician who lived in A.D. 200. Theophrastus knew of three varieties. From Pliny's description, he appears to have included other members of the tribe *Cichoreæ* of *Compositæ*, such as were called Mecones, possibly *L. virosa*, L., and some species of *Picris*; perhaps also the Dandelion. He adds that "it is generally thought that they are all of a soporific tendency," the name *lactuca* having been given on account of the milky juice. Gerarde describes eight varieties in cultivation (1597).

ENDIVE.—*Cichorium Endivia*, L., natural order *Compositæ*. A. de Candolle considers it identical with *C. pumilum*, Jacq., of the Mediterranean region. The Endive is described by Pliny more especially for its supposed medicinal qualities, and speaks of two kinds, the cultivated and the wild, known as "*Cichorium*" or "Spreading Endive." He refers to its growth in Egypt, where *C. Endivia* still occurs wild in the fields, and is "sometimes cultivated."*

There are two forms in present cultivation—the curled-leaved, which was unknown to the ancients, and the broad-leaved or Batavian. The "curled" appears to be first alluded to by Camerarius in 1586.

Pliny makes the remark that "the general opinion is that

* Asch and Schweinf. *Flore d'Egypte*.

those only will admit of being blanched which are produced from white seed, . . . care being taken to tie up the leaves as soon as ever they begin to come to any size.”*

CHICORY.—*Cichorium Intybus*. This differs from Endive in being perennial. M. Henry L. de Vilmorin,† in his paper on “Saladings,” describes and figures the two kinds in cultivation, viz. “Barbe de Capucin” and the “Witloof” or Brussels Chicory. It occurs wild throughout England, and is cultivated near York for chicory, the enlarged roots being roasted and ground to powder.

CELERY.—*Apium graveolens*, L., natural order *Umbelliferae*. Common in ditches or near our coasts; remarkable for its strong smell, and is dangerous to eat in the wild form. In Italy, Malta, &c., it is not blanched, but the green leaves are used for soup, &c. Gerarde describes it as “Water Parsley” or “Smallage.” Indeed, the word “Celery” is derived from *selimon*, the Greek for Parsley. In Gerarde’s time (1597) it was the custom to transplant it from the ditches into gardens, just as Pliny says the Parsnip was in his day.

PARSLEY.—*Petroselinum sativum*, L. Allied to Celery; is a native of South Europe and the Levant. English gardeners received it ‡ in 1548; but it was used in medicine in the 14th century, and doubtless earlier. It has naturalised itself in England, and delights in rocks (*petros* is the Greek for “a stone”), as *e.g.* over the Avon at Clifton, where it is wild. “Among the ancients Parsley always formed a part of their festive garlands, on account of its retaining its colour. They used to take it as an antidote to the effects of wine.” §

FRUITS.

HARICOT OR KIDNEY BEAN.—*Phaseolus vulgaris*, Savi, natural order *Leguminosæ*. This species was for a long time supposed to be of Indian origin; but the discovery of beans of dwarf Haricots in certain tombs of Peru in 1880 countenance the view that it is of American origin,|| though M. J. de Brevans

* *Nat. Hist.* Bk. xix. c. 39. † *Journ. R. Hort. Soc.* 1890, p. 260.

‡ Phillips, *Companion to the Kitchen Garden*, ii. p. 35.

§ *Treasury of Botany*, s. “*Apium*.”

|| A. de Candolle discusses the question, and arrives at this conclusion. (*Origin of Cult. Pl.* p. 343.) Gerarde, however (1597), figures twelve sorts of beans called *Phaseoli Brasiliiani*, or “Kidney Beanes of Brasile.” This, therefore, seems as if he had been aware of a South American origin. He also calls the “English Kidney Beane” “French Beane.” The “Scarlet Runner” is probably a variety of this species.

says it was cultivated in France in the time of Charlemagne (800).*

BEAN.—*Faba vulgaris*, Mœnch., natural order *Leguminosæ*. Varieties of the Broad Bean have been found in the ruins of Troy, and in the Swiss Lake dwellings of a prehistoric period. Herodotus speaks of the Bean as never being cultivated in Egypt, “and if it grows they do not eat it. The priests cannot even endure the sight of it; they imagine that this vegetable is unclean.” It was early known in Italy, as it was an ancient Roman rite to put Beans in the sacrifices to the goddess Carna.† Beans are mentioned with lentils in 2 Sam. xvii. 28, as being brought to David. *Faba vulgaris* is believed to have been found wild south of the Caspian Sea and in Algeria. M. de Candolle, however, doubts the statement.

Of leguminous plants “the honour,” says Pliny,‡ “must be given to the Bean.” In speaking of it as food, he says that it was mixed with flour and made into bread. It was also used for feeding cattle. Bean pottage occupied a place in religious services. Pythagoras believed that the souls of the dead are enclosed in the Bean, hence they were used in funeral banquets. A remarkable statement of Pliny’s is that “it fertilises the ground in which it has been sown as well as any manure.” We now know the cause of this fact, that certain species of bacteria invade the roots, giving rise to tubercles, and that by some unknown method they can obtain nitrogen from the air. Consequently leguminous crops, as a rule, do not require nitrogenous manures, and the haulms of Peas and Beans should be always chopped up and dug in the ground while still green if possible, as the decay is more rapid then.§

PEA.—*Pisum sativum*, L., natural order *Leguminosæ*. This plant is not known wild. Some botanist have thought it may be a cultivated form of the Field Pea, *P. arvense*, L., wild in Italy. It was cultivated in the time of Theophrastus, and it has been found in the lake dwellings of Switzerland. It was not known in ancient Egypt nor in India, the so-called Mummy

* *Les Legumes et les Fruits*, p. 75.

† De Candolle, *Origin of Cult. Plants*, p. 318.

‡ Pliny, *Nat. Hist.* xviii. 30.

§ The ancient Greeks and Romans also cultivated the Lupin (*Lupinus albus*, L.) to bury it as a Pea manure (De Candolle, *Or. of Cult. Pl.* p. 325).

Pea* having nothing to do with Egypt. The Pea was probably cultivated in England early in the sixteenth century, as Gerarde figures and describes it.

CUCUMBER.—*Cucumis sativus*, L., natural order *Cucurbitaceæ*. The origin of this plant is now thought to be *C. Hardwickii*, Royle.† This is wild from Kumaon to Sikkim. It has been cultivated in India for 3,000 years, and introduced into China 200 B.C. The ancient Greeks cultivated it under the name of *Sikuos*. The "Cucumber" mentioned in Numbers xi. 5 appears by the name in Hebrew to have been some other plant; no trace has yet been found of the Cucumber in ancient Egypt. The writer of the article in the *Treasury of Botany* says: "They were known in England in the time of Edward III. (1327), but subsequently neglected until the reign of Henry VIII." Gerarde describes and figures several kinds of "Cucumbers," but that of the "common," presumably the true Cucumber, has short fruits more resembling Gherkins, though he describes it as "long, cornered, rough, and set with certain bumpes or risings." Cucumbers were grown in Pliny's time, but he appears to mix up Gourds and Melons with them. He speaks of one accidentally appearing in the shape of a Quince, called "Melopepo"; and "it was from the seed of this that all the others have been reproduced." He also knew of Cucumbers without seed.

VEGETABLE MARROW.—*Cucurbita ovifera*, L., is believed to be a cultivated variety of *C. Pepo*, the Pumpkin. This species has been supposed indigenous to Southern Asia and America. The question, however, as De Candolle observes, requires careful investigation. The nearest to *C. ovifera* appears to be *C. texana*, found growing by Lindheimer "on the edges of thickets by the Guadaloupe, apparently an indigenous plant."‡ This may have originated the Vegetable Marrow. Gerarde's figure of *Cucumis ex Hispanico semine natus*, or Spanish Cucumber, might very well represent the Vegetable Marrow.

TOMATO.—*Lycopersicum esculentum*, L., natural order *Sola-*

* The Mummy Pea was "sent out" by Mr. Grimstone as a new Pea about 1840, accompanied with the story that it had been found in a mummy case. It is a "fasciated" form, and as there is both a white and a purple-grey variety, it is suggestive of having been a cross between *Pisum arvense* and *P. sativum*. The reader will find it described in the *Gardeners' Chronicle*, 1847, p. 542; 1849, p. 115; and 1873, p. 44.

† *Ill. of Him. Pl.* p. 220, pl. 47; cf. *Bot. Mag.* 6206.

‡ A. de Candolle, *Origin of Cult. Plants*, p. 255.

naceæ. This is probably a native of Brazil. It was introduced into Europe early in the sixteenth century. Gerarde describes a *Lycopertium*, or "Apples of Love," which he says "do growe in Spaine and Italie," but does not give the name "Tomato," from the Mexican word "Tomatl." Of the numerous forms of the fruit in cultivation the small variety *cerasiforme*, or Cherry-like, is probably nearest to the original type.*

THE NUTRITIVE VALUES OF ORDINARY VEGETABLES.—With regard to the nutritive values of the preceding vegetables, it is usual to represent them, on the one hand, in the form of the *nutrient ratios* between the albuminoids (or nitrogenous substances) and the carbonaceous (or those consisting of carbon, hydrogen, and oxygen alone). On the other hand, the so-called *nutrient value* is the percentage of the combined amounts of both these kinds of products taken together, oil being calculated as starch.

Thus the following values correspond to the vegetables described:—

	Nutrient Ratio	Nutritive Value	Mineral Matter
Turnip . . .	1 : 6	4 per cent.	0·8 per cent.
Parsnip . . .	1 : 12	16 "	1·0 "
Carrot . . .	1 : 14	7·5 "	1·0 "
Beetroot . . .	1 : 29	12 "	0·9 "
Potato . . .	1 : 17	22 "	1·0 "
Jerusalem Artichoke	1 : 8	16 "	1·1 "
Asparagus . . .	1 : 1·1	6·3 "	0·9 "
Cabbage . . .	1 : 4	7·5 "	1·2 "
Sea-kale . . .	1 : 2·7	5·2 "	0·6 "
Spinach . . .	1 : 3·7	5·7 "	2·0 "
Onion . . .	1 : 3·5	6·5 "	0·5 "
Lettuce . . .	—	—	1·0 "
Endive . . .	—	—	0·8 "
Watercress . . .	—	—	1·3 "
Haricot . . .	1 : 2·5	80 "	2·9 "
Bean . . .	1 : 2·5	78·4 "	3·6 "
Pea . . .	1 : 2·5	79 "	3·0 "
Cucumber . . .	1 : 13	2·9 "	0·4 "
Vegetable Marrow . . .	1 : 5	3·5 "	0·5 "
Tomato . . .	1 : 5	8·5 "	0·8 "

Various salts, so essential to the human economy, are diffused in plants, partly in solution; so that as they get lost to some extent in cooking, the importance of salads (which have little or no nutriment) depends upon their presence in fresh vegetables.

Of these analyses, some were made of the plants—as Celery,

* Bailey, *Amer. Nat.* 1887, vol. xxi. p. 575.

Seakale, Turnip, &c.—when quite fresh. In all these the percentage of water is high, being generally somewhere about 90 per cent., so that the absolute *quantity* of nutritious matter is small in such vegetables, Parsnips being the best in this respect. In Potatos the water is 75 per cent., while the starch is 15 per cent., the nitrogenous ingredients (albuminoids) being about 2 per cent. only. On the other hand, such vegetables as Peas and Haricots were air-dried and ripe when they were analysed. Consequently the water sinks to about 14 per cent. as in Haricots, the nutrient value rising to 80 per cent.; the albuminoids reaching 20 per cent. and upwards; so that while Potatos, being highly farinaceous, are an excellent *adjunct* to meat, Beans, Peas, Lentils, &c., are more like meat themselves, being the best vegetable “flesh-formers.”*

Excepting those which are eaten fresh as salads, all the rest undergo certain alterations by being cooked; and regarding their nutrient ingredients quantitatively, while the *nutrient ratios* remain the same, the *nutrient values* may vary greatly; for, apart from the useful salts which may be more or less lost in the boiling, the chief difference resides in the amount of water absorbed. Indeed, for any given quantity, the nutritive value will, of course, vary inversely with the moisture imbibed.

Hence the actual amount of food-material diminishes with bulk in cooking; especially in such vegetables as Turnips, &c., which imbibe large quantities of water.

There remains the other side of the question—namely, as to how much of the nutrient values man can assimilate. This depends, of course, partly on his digestive powers; but apart from that, the highly nitrogenous foods, as those supplied by the *Leguminosæ*, i.e. ripe Peas, Beans, &c., it is estimated that but little over one half can be utilised.

* Excepting those of the Bean, which is taken from *Les Légumes et les Fruits*, by M. J. de Brevans, the above values are copied from Prof. A. H. Church's *Handbook of Food* (Sth. Kens. Mus.; Branch Mus., Bethnal Green, 1890).

RAISING NEW VARIETIES OF CHRYSANTHEMUMS.

By Mr. CHAS. E. SHEA, F.R.H.S.

[Read November 13, 1894.]

THE time will probably sooner or later arrive to the amateur when the devotion of his interests in connection with the Chrysanthemum to the mere object of competitive exhibition at our flower shows will be attended with a certain sense of insufficiency. A period of success, more or less conspicuous, will be followed by a growing appreciation of the fact that "showing," after all, has aspects savouring rather of routine than of variety, and the day at last arrives when the ardent amateur longs for new fields of conquest, and, so far as he is concerned at least, determines that, as to competitive exhibition, *le jeu ne vaut pas la chandelle*. And before him lies a most tempting and attractive vista in connection with his favourite flower, a vista seeming to have no end—the creation of new varieties, and possibly, in the dim future, the inducing of "sports" by artificial means.

With the first-named subject only have we to deal to-day—namely, the crossing and raising of Chrysanthemums from seed of home production.

In starting upon his venture the amateur will doubtless be ambitious to secure that public recognition of the value and merit of his work which not only adds zest to his labours, but furnishes the only true practical proof that his efforts have not been unsuccessful. The outlook in this direction is certainly not encouraging, for it is not possible to ignore the fact that in France and many other Continental countries, in the United States of America, in addition to the old homes of the Chrysanthemum, China and Japan, a large body of experts are at work upon the same matter. In America probably 100,000 seedlings are raised and tried each season, while in our own country the trade growers raise amongst them, it is estimated, nearly 10,000 seedlings, though doubtless mostly from imported seed.

Then, again, the climatic conditions are against us in this country. It is, of course, possible, by variation of time of striking and stopping the plants, to have Chrysanthemums in flower all the year round, and the summer would doubtless afford a better condition of climate than the winter; but the ordinary amateur, with limited facilities at his disposal, must attack the matter

just when he has the flowers, which means that the battle must be fought in the damp and darkness of the English winter. Abroad, in the districts chiefly famed for the raising of new varieties, the work is carried on at a period when the atmosphere is comparatively dry and sunny, and the ripening of the seed—the chief difficulty in the English winter—is a matter of comparative ease. Still, there is one item, and a most important one, in favour of the English operator, for, whereas abroad the work of fertilisation is, as a rule, carried on at a season when the insect world is actively assisting in the operation of crossing the varieties, we, in winter, have no such interference, but can carry on our work systematically, and exactly in accordance with our plans. So, intercrossing in England in the winter time is an exact science, and result follows cause so directly that it becomes possible to aim at, and achieve, definite foreseen conclusions. Indeed, it is scarcely too much to say that we could actually paint the florets of the coming flower.

The first essential is a structure suitable for the work in hand. The one used in connection with the experiments to be described is 30 feet by 12 feet, but a smaller house, say 12 feet by 8 feet, would suffice for limited operations. Everything must be done to exclude damp. Let the floor be cemented throughout on an incline, with channels conducting all water quickly away. Ventilators should be so contrived that the air on entering the house can be made to pass over the hot-water pipes, and every means should be employed to maintain a dry and moving atmosphere. Thin tiffany nailed to the rafters inside the roof is very useful as a protection against the deposit of atmospheric moisture at night.

In selecting plants to operate on, forced and overgrown specimens resulting from exhibition culture should not be taken, as the highly stimulating system of cultivation, which is employed in order to produce first-class exhibition blooms, not only tends to prematurely exhaust the plant, but also to the destruction of the organs of fertilisation. Plants which have been grown under ordinary treatment are to be preferred. Medium-sized blooms, having what is called an "open eye," are the easiest to operate on, and towards the end of the flowering season blooms of this character are generally produced even by those varieties which are most double in character.

Before describing the method of fertilisation in its practical aspect it will be advisable to glance briefly at the botanical aspect of the subject.

The *Chrysanthemum* belongs to the order *Compositæ*, or *Asteraceæ*, the most extensive of the orders of herbs, trees, or shrubs in the vegetable kingdom, there being between 700 and 800 genera, and about 10,000 species. We have here the flowers collected into a head on a common receptacle, and surrounded by an involucre—a collection of bracts surrounding many flowers.

In the bloom of the *Chrysanthemum*, which is, indeed, a collection of many distinct flowers or florets, we have the outer florets enlarged and spreading, and these are known as the “florets of the ray.” The inner florets are, as a rule, smaller, and are rather more closely packed together, and are called the “florets of the disc.” Examine a ray floret of the *Chrysanthemum* under the microscope, after removal of the involucre phyllaries. We find, in a perfect specimen, the ovary, with a completely adherent calyx, the corolla (of five petals and gamopetalous), the stigma, and the style. The tube of the calyx is wholly adherent to the ovary within.

In the true ray floret the andrœcium is wanting, or incomplete and imperfect; and in the ray florets of some flowers of this order—*Centaurea*, for instance—the gyncœcium is also absent.

It is important to bear in mind the fact that all parts of the flower—the sepals, petals, stamens, and carpels—are metamorphosed leaves, and that the so-called “doubling” of the flower is merely a case of retrograde metamorphosis, which, when carried too far, involves the impairment, or even the destruction, of the organs which are essential to the bearing of the seed.

A measure of uncertainty existing as to the condition and development of the essential sexual organs in the florets of the ray, and in view of the fact that the florets of the disc next adjacent to the florets of the ray provide every advantage offered by the latter—namely, the large preponderance of double over single varieties compared with the florets nearer to the centre of the disc—it has appeared to be advisable, and certainly to be easier and more productive of certain results, to operate upon the outer florets of the disc than upon those of the ray. That this plan suffices for all practical purposes is shown by the

fact that out of over 250 seedlings of 1894, selected from a quarter of a pint of seed, only three were single; and it is difficult to believe that the florets of the ray can be proved to have furnished better results.

We must keep in mind, then, what are the essential organs: the andrœcium (the male fertilising organ), with its individual stamens; and the gynœcium (the female organ), containing the ovary with its unfertilised seed, and having at its apex the stigma, a minute opening at the fore end whereof leading down into the ovary.

We may now consider the method by which fertilisation is effected.

The Chrysanthemum is characteristically entomophilous—the insects love it. Sir John Lubbock, in his charming “British Wild Flowers in Relation to Insects,” has told us that the grouping together of so many florets into capitula brings with it three results pertinent to insect fertilisation, namely: 1, conspicuousness; 2, attractiveness, as honey is easily obtained from so many individual flowers without change of place; and, 3, better chance of fertilisation, as not one, but many florets are touched by the visiting insect.

So, at first glance, it would appear that self-impregnation, as opposed to cross-fertilisation, would be very conspicuously the rule, but a closer investigation of the matter tends to qualify this assumption. In animal nature interbreeding tends to weakness and retrogression, so in the vegetable kingdom self-fertilisation tends to similar results, and Dame Nature has her own marvellous ways of seeing carried out the marching orders which she sends forth throughout creation—“Advance!” So in the Chrysanthemum cross-fertilisation is well provided for, or, in other words, self-fertilisation has certain impediments placed in its path. The florets of each capitulum open centripetally—*i.e.* inwards from the circumference—and they are proterandrous. An insect, we are told, generally visits a capitulum centripetally—that is, it crawls from the circumference of the head towards the centre. But when the stamens of the outer rows of florets are ripe and produce pollen, the stigmas of the inner florets are not yet ready to receive it, so no fertilisation results. Besides, the andrœcium being absent in so many of the ray florets, there is, for a period, little pollen for the insects to carry on their inland journey. The

ray florets play a leading part in enhancing the "attractiveness" of the capitulum, and indeed in some genera play no other, for they are sometimes void of both sexual organs, and are barren or neuter. The florets of each capitulum open, as has been pointed out, first on the circumference, and so proceed inwards, and the same order is observed in the development of the sexual organs of the flower, the rule being that the male organ is ready first, roughly speaking some "rings" ahead of the female, so that it happens that a certain stigma is not likely to receive the pollen from an adjacent stamen. And Nature makes another provision to the desired end of impeding self-fertilisation, and we see this in the history of the development of the floret. The filaments of the stamens are contractile. At the outset the united anthers are not only conjoined, but themselves enclose the stigma. At this time the two lobes of the stigma are not separated, but are pressed closely together, the true stigma surfaces, which are the inner adjacent faces of these lobes, being completely protected from the pollen. When at length the opening of the anthers sets the pollen free it is discharged into the vacant space between the anther lobes and above the stigma. The style then lengthens, and the stigma, with its closed and abutted faces, pushes up and brushes out the pollen from the tube of the anthers. At length, when the stigma has thus swept away the pollen of the particular floret to which it belongs, its two lobes separate, and it is at last in a position to receive pollen; but this must be the pollen from another floret, and possibly from another capitulum altogether.

Such is the progression of development of the florets regularly from circumference to centre.

The practical lesson to be derived from the foregoing is this, that, in the absence of insect agency, self-fertilisation is almost an unknown quantity in the problem, and the matter of selection of the parentage of the coming offspring is very much in our own hands.

Furthermore, we obtain from watching the regular development of the rings of pollen-bearing stamens a very useful indication as to where we are likely to find the stigmas in a condition to receive the pollen which we wish to convey to the ovary. In practice it will be found a sufficient guide to take it to be a rule that when the stamens in the inner section of the disc are

presenting pollen the stigmas in the outer section are in a condition to be fertilised.

Assume these conditions to have arrived. Then, at mid-day, on a sunny day for choice, if such present itself, take on the tip of a small dry camel's-hair brush the pollen from the bloom which we intend as the male parent, and convey it to the bloom which we desire to fertilise. But first we must, in a measure, prepare this bloom. Disregarding the ray florets, with a small and sharp pair of scissors carefully shorten the petals of the *outer* florets of the disc, so that the stigmas may be conveniently reached by the brush. Then carefully convey the pollen to the stigma surfaces. Do this, again and again, daily for several days. Make sure of the fertilisation.

Our next, and the most difficult part of our task, is to ripen the seed now fertilised. A measure of ripeness is essential, and to ensure it several precautions have to be adopted. Keep down injurious insects—aphis, thrips, &c.—by fumigation and tobacco-powder. Let the bloom heads be bent directly over the hot-water pipes, the house being maintained at a temperature of from 50° to 60°, with a bright and moving atmosphere.

Do not shorten the ray petals according to the American plan, but leave them on, as they appear to assist in maintaining a healthy condition of the capitulum, and also in a measure to afford a safety-valve for the carrying off of any excess of sap which may rise to the capitulum.

The plants will now require but very little water, and carefully wipe up any surplus moisture finding its way through the pots. Presently the seeds will be seen to swell and stand well away from each other. Now half-break the stem a little below the head, and bend it down towards the pipes. Say three weeks have elapsed, or perhaps a month, and no signs of a damping bloom head have appeared. Now remove the head, and cut out the centre of the disc to avoid single varieties. Place the head in a metal pan on bricks placed directly on the hot-water pipes. Sooner or later, according to the character of the variety, a gentle touch with the finger will suffice to release the seed from the capitulum, and we now know that success has attended our toil, and that after another week of gentle drying we may sow our seed, with a very definite prospect of witnessing in six months' time the unfolding of the florets of our new variety.

The selection of varieties for crossing must necessarily be a matter very much of personal judgment, but there are certain principles which must not be lost sight of. The exigencies of competitive exhibitions compel that size should not be disregarded, but size must be attended by refinement and beauty, or it is, or at least should be, useless.

Aim at procuring what is called mid-season varieties—*i.e.* those flowering about the first week in November—either by crossing two of that character or by wedding a late with an early variety.

Dwarfness of habit and robustness of constitution must also be kept in view. Aim at novel combinations and effects in colouring and form, and avoid the use of all varieties, however large, which are coarse in character or washy in appearance. Above all, have some definite and distinct aim in view, for to cross varieties merely at haphazard, and without definite system, is to throw away half the advantage to be derived from scientific methods. In short, aim always to refine and to improve.

Undoubtedly, in order to raise *Chrysanthemums* from seed of our own saving, a great deal of patience is required, as well as the exercise of a certain amount of intelligence; but the work brings with it a large amount of pleasure, and should lead the experimenter on to attempt the production of “sports” by artificial means, and, before all of us, there stands the goal which perhaps someone present might be inspired to attain—the honour of raising the “blue *Chrysanthemum*.”

PRINCIPLES OF JUDGING AT SHOWS.

By Mr. JAMES DOUGLAS, F.R.H.S.

[Read November 27, 1894.]

AFTER turning this question over and over in my mind, I found it to be one of the most difficult subjects I ever attempted. It has been my lot several times to judge an entire exhibition single-handed, and I have managed to get through it in good time for the admission of the public. This, the practical side of the question, is one thing; explaining to others how to go and do

likewise is another; but having been successful as a practical man, I will do my best to put upon paper something of the "Principles of Judging," in order to afford at least a theme for discussion.

1. The first point to consider is the framing of the schedule. This should be done with great care, as it must be the guide both of exhibitors and judges. Under the heading of "Rules and Regulations" every point ought to be so definite and exact that no mistake may be excusable and no difference of interpretation possible. Moreover, the schedule must always be interpreted by what it grammatically says, and not according to the preconceived ideas, either of exhibitors or judges, of what it ought to say or mean.

Notwithstanding these things, difficulties constantly occur which judges have to deal with. A case occurred, for instance, only a month ago, in which I was involved as a judge. I quote it because in this case a really good exhibitor was disqualified at two exhibitions for having infringed an important regulation; and I find he is defended by a good judge of Chrysanthemums in the current number of one of the gardening papers. The regulation reads: "Exhibitors are requested to have their stands made in accordance with the metropolitan plan. The stand for twelve blooms to be 24 inches long and 18 inches wide (with holes 6 inches apart from centre to centre)," with other details which the exhibitor was "requested" to observe. The exhibitor in question did not obey this regulation, and as there is a note at the end of the Rules and Regulations to the effect that "these regulations will be strictly adhered to, and any infringement will disqualify exhibitors," this seemed to the judges to settle the point. But it would certainly have put the question beyond all possibility of cavil if the word "must" had been used instead of "requested." When the word "requested" is alone used, non-compliance would not, of course, disqualify; but the note at the end, in which it is stated "*Any* infringement will disqualify," appeared to the judges to alter the case completely.

Again, the four words, "species," "kind," "sort," "variety," are often used quite indiscriminately, sometimes even being interchanged one with another in the same schedule without any regard whatever to any difference of meaning. For instance, in the case of hardy herbaceous plants, the word "variety" has been used

when "species" was intended. If either of the words "varieties" or "sorts" are used, an exhibitor would be within his rights if he staged only two or three "species" or "kinds" of plants in a collection of, say, 24 varieties. He might exhibit half-a-dozen varieties of Delphiniums and as many Phloxes; but if the word "species" or "kind" is used he may not exhibit more than one variety of each.

The question has arisen, and been decided different ways, as to whether a Lily is a herbaceous plant or not. Some good judges say that it is not, and others say it is. When judges differ, who shall decide? The framers of schedules, certainly. It is easy to add "including Lilies" to the wording of the class for herbaceous plants. It is not fit that the time of judges, which is none too long for their proper work, should be taken up in deciding any questions of this kind; they should not be asked to do more in the time at their disposal than decide the relative merits of A, B, and C. In reference to the use of the words "kind" and "variety," "kind" is more nearly akin to "genus," and "variety" to "species." For example, "different kinds" means, of fruits—Apples, Pears, Grapes, Plums, Melons, Figs, &c.; of flowers—Roses, Phloxes, Tulips, Irises, Hollyhocks, Carnations, &c.; and "distinct varieties," means, of Apples—Stirling Castle, Golden Noble, Warner's King, Cox's Orange Pippin, &c.; or of Grapes—Black Hambro', Lady Downe's, Buckland Sweetwater, Muscat of Alexandria, &c.; or of Roses—Mrs. John Laing, Duke of Edinburgh, Souvenir de la Malmaison, Maréchal Niel, Marie Van Houtte, &c. It would, I think, be far better if the word "sort" were never used in a schedule at all, as although, I believe, it means practically the same thing as "variety," yet many people regard it as equivalent to "kind." It is a doubtful word, and should therefore be carefully excluded, particularly as the two words "kind" and "variety" answer every possible requirement.

Another question that may be asked, and not unfrequently is asked by judges, is, What is a fruit? and what a vegetable? The only possible way, I think, to decide this question, with due respect to grammar, truth, and equity, is to lay down and assert a principle, and say that fruits used in a green state, and as vegetables *only*, may only be shown as vegetables; but if a ripe fruit of any kind is used *both* as a vegetable and as a fruit, it may

be shown in either category. The only fruit that I know of at present which may be shown both as a fruit and as a vegetable is the Tomato, which truth forbids us to exclude from fruits, and general use claims as a vegetable.

In this place it may be well to remark upon the folly of judging fruit by appearance *only*; it is about equal to the folly of judging flowers by their scent *only*. Appearance is a great point with fruit, so is scent with flowers, but neither is the chief point. The chief point with fruit is flavour, with flowers beauty. A blind man may have the sense of smell very acutely, but no one would trust him to judge flowers; and yet men judge fruit by sight only! I do not say that it is *always* necessary to taste a fruit in order to judge of it correctly. The great majority of fruits a good judge has no need to taste; he has sufficient knowledge of the quality and flavour of the fruit from the variety; but an *unknown* variety, however good-looking it may be, should never go untasted. Some fruits, however, though perfectly well known, will deceive even experienced judges by their appearance. I remember an instance of this. I happened to be judging a class of Black Grapes recently, and it was easy to pick out the best-looking Grapes by their colour, size, and general finish, and they were first thus placed in order of merit, but when tested by taste the best-looking dish of Grapes had to take a third place. Black Grapes should always be tested by taste; but Muscats need not be so, as golden-coloured, well-finished Muscats may always be quite safely judged by their appearance. Pears and Apples may have a fair outside, but may be rotten at the core; and the judges should always be allowed to cut the fruit if they wish to do so. In any case of doubt, a fruit should be tested by its taste, just as a new Rose or Carnation should be tested by its scent as well as by its appearance. It may not be too much to say that appearance in fruit holds a corresponding position to scent in flowers. All other things being equal, you prefer a sweetly scented Rose or Carnation to a scentless one; just as you prefer a fruit that is beautiful to look at to one that is unattractive. But fruit is not grown merely to be looked at, any more than a flower only for its scent; and when the skin of a beautiful-looking Pear or Apple is removed, and the inside is poor in flavour or woolly or gritty in texture, who cares for it? And so with Grapes—the Gros Colmar is a noble-looking Grape, probably the

handsomest in appearance of all late Grapes, but who eats them ?

Of all evils that of judging either flowers, fruits, or vegetables by size only is the worst. Size should in many cases be considered an actual demerit, when the objects exceed certain standards well known to all good judges. Overgrown Potatos, Cauliflowers, Cucumbers, &c., are always left out in a close competition ; and in every case quality should come first. The same remark holds good with fruit. Not the largest bunches or berries of Grapes, but first flavour, and then colour, should be given the highest points. A big Melon counts for nothing when compared with a medium-sized one of superior flavour. The same with Pears and Apples. The Winter Nelis or Seckle amongst Pears would win against some varieties four times their weight and far more beautiful in appearance. So also would Cox's Orange or Ribston amongst Apples maintain the foremost place, on account of their superior quality, against the size and beauty of Blenheim Orange or Peasgood's Nonesuch. Even in flowers size can at the best hold only a third place. Paul Néron amongst Roses would never win in the class for Roses of any one variety ; it is large enough, but lacks form and substance of petal. Size in a Carnation is, I know, by some considered the principal point, but no good judge would put size first, unless it was *accompanied by* substance of petal and good form. Men are beginning to learn that even Chrysanthemums may be too large, and there are not wanting signs that in the not distant future mere size will not receive quite so much prominence as heretofore. Etoile de Lyon, for instance, is one of the largest of all Chrysanthemums, but it is, generally speaking, somewhat coarse, and flowers of half its size and of better quality often are, and still oftener ought to be, placed before it in competition.

No man can judge fruits, flowers, or vegetables aright unless he has a good knowledge of the different varieties. It is much easier to obtain good specimens of some varieties than it is of others, and the man who sets himself up as a judge should know how much skill has been required to obtain the productions placed before him, and good specimens of a difficult subject should certainly, in my opinion, receive an extra point to only equally good specimens of a subject that presents no difficulties of cultivation.

In all cases of at all near or close competition judging should

be done by points. This is absolutely necessary, whether the exhibits be collections of fruit or vegetables, stands of Carnations, Roses, or Chrysanthemums. And here it is that the judge with a full knowledge of his subject is alone competent to decide. As a matter of practice it answers best to allow six as the maximum number of points; but this number is increased to twelve if we allow half-points. Suppose we take two stands of twelve Chrysanthemums, nearly equal; such a stand contains four rows of flowers, three in a row from front to back. The principal things to consider are depth, size, form, colour, breadth of petal, and freshness. The last point is not the least, as a stale flower losses heavily; but they have all to be considered, and only flowers of the very highest merit gain the maximum number. It may very well happen, then, that a flower is not good enough for 6, and too good for only 5 points; therefore it should have $5\frac{1}{2}$. The judge has all the standards of excellence in his mind, and speedily disposes of the blooms. Beginning at the left-hand corner, the flower in the back row receives, say, 5 points, the middle one $4\frac{1}{2}$, the front one 4. He jots this down, $13\frac{1}{2}$, and goes on to the next, say $4\frac{1}{2}$, $4\frac{1}{2}$, and $4 = 13$ points, and so on to the end. He may have to consider the depth of a flower in proportion to its width; and a loose flower might lose a point or so against a more solid one, &c.

In judging fruit or vegetables the same number of points may be taken; quality and freshness taking the highest points, and all through in a close competition tasteful arrangement must count for something. The contrast or harmony of colours in a stand of flowers, or the cleanliness of trays and other surroundings, may all help to win half a point, and in a close competition half a point may win a place.

The subject I have had to treat of is quite familiar to me in practice; but I felt when I began to deal with it on paper it would be a very difficult one, and the measure of my failure proves it so to be. A good cultivator and a successful exhibitor, if he has anything of a judicial mind, soon becomes a good judge with a little practice. He would not attempt to judge an entire exhibition by himself at first; but run him at first in double harness with an experienced judge, and he can stand alone very soon. If I have brought out only a few points worthy of discussion, the feeble attempt that I have made may not be altogether in vain.

RICHMOND ALLOTMENT HOLDERS.

A MATTER of considerable interest occurred on Tuesday, the 9th of October, 1894, when a deputation of the allotment holders of Richmond, Surrey, waited on the Mayor and Corporation at the Town Hall, and presented to the Mayor the Silver Knightian Medal recently awarded to the combined body of the allotment holders by the Royal Horticultural Society for a large collection of well-grown vegetables and fruit. The deputation was introduced by Mr. Alderman Pillans, who intimated that the holders of the Corporation allotments had gone on from one success to another, and that the most sanguine hopes of those who had provided the ground had been more than realised by the results attained.

Mr. A. J. Ward, the Hon. Secretary of the Association of Allotment Holders, who acted as spokesman, requested his Worship to accept the Royal Horticultural Society's Silver Knightian Medal, to be kept in trust for the winners, and deposited in such a place as he might decide. Mr. Ward said that it was with more than ordinary feelings of satisfaction that they asked the Mayor to accept the charge of the medal, as they were the first working-men who had won this medal from the Royal Horticultural Society.

The Mayor, in replying, said that it afforded him very great pleasure in accepting the medal, and in ordering it to be kept in trust for the holders. He heartily congratulated them upon the honour conferred upon them, and was delighted to see how well they had utilised the ground which the Council had provided.

The medal, it was stated, would be placed under a glass case in the Public Library of the borough.

GENERAL MEETING.

MARCH 13, 1894.

SIR ALEXANDER J. ARBUTHNOT, K.C.S.I., in the Chair.

Fellows elected (41).—Wm. Allan, Lady Alderson, J. R. Anderson, E. Barclay, Lady H. Bentinck, M. R. Bigge, A. B. Booty, Major L. Brown, C. Browne, Rev. J. L. Chesshire, Donald Clark, Mrs. E. Donner, Rev. H. Hall, T. H. Harraway, R. P. Humphery, E. J. Johnstone, Mrs. Kershaw, E. A. Ladhams, B. Ladhams, Mrs. G. Lipscombe, Mrs. S. S. Lloyd, Alex. J. Main, Miss M. H. Mason, Wm. Manger, A. C. Milne-Redhead, John S. Moss, Chas. Mumby, W. G. Norman, J. E. Phippen, Mrs. H. E. Reid, A. R. Ricardo, Lady Roscoe, Mrs. Sheepshanks, P. S. C. Shepherd, B. F. Smith, Mrs. J. Smith, Lady Stratheden, John Stuart, Thos. Walters, A. W. Warren, H. Whateley.

Associates (2).—John E. Midson, W. E. Newton.

Societies affiliated (2).—People's Palace and East London Horticultural Society; Forest Hill and Catford District Horticultural Society.

A paper on "The Deciduous Trees and Shrubs of Japan" was read by Mr. J. H. Veitch. (See p. 12.)

GENERAL MEETING.

MARCH 27, 1894.

DR. MAXWELL T. MASTERS, F.R.S., in the Chair.

Fellows elected (12).—H. J. Bartleet, Mrs. J. S. Beale, Wm. Gill, Baron von Goldstein, Major-Gen. Lloyd, R. Robbins, G. B. Searle, F. Snowdon, John Stewart, Col. H. Thompson, Lady Vincent, Miss S. Wood.

Mons. Maurice de Vilmorin read a paper on "The Rare Trees and Shrubs in the Arnold Aboretum, U.S.A." (See page 22.)

GENERAL MEETING.

APRIL 10, 1894.

Dr. MAXWELL T. MASTERS, F.R.S., in the Chair.

Fellows elected (7).—J. Forster Alcock, Mrs. C. Burbidge-Hambly, Wm. Pearson, Percival S. W. Pickering, E. A. Safford, P. B. Tubbs, Col. Walker.

A lecture on “Hybrid Narcissi” was given by the Rev. G. H. Engleheart, M.A. (See page 35.)

GENERAL MEETING.

APRIL 24, 1894.

J. T. BENNETT-POË, Esq., in the Chair.

Fellows elected (22).—T. Beckett, A. E. Cave, Miss Cooper, T. Fife, Edward Hopper, Capt. Pakenham Mahon, H. T. Mennell, Edward Parry, Edward Piper, Edward Plater, John Rickards, F. H. Rosher, C. W. Smallbone, T. L. Smith, W. H. Tarry, Henry Tate, W. Tribbick, S. W. Wheatly, C. S. Webb, P. D. Williams, Rev. H. J. Wright, H. R. Yorke.

Mr. F. W. Burbidge, M.A., gave a lecture on “Botanical Exploration in Borneo.” (See page 44.)

GENERAL MEETING.

MAY 8, 1894.

Mr. GEO. BUNYARD in the Chair.

Fellows elected (27).—W. C. Arnold, James Barkham, Mrs. E. Beck, J. E. Borland, W. J. Clarke, Wm. Clarkson, W. Davenport, Albert G. Eley, John Forbes, Captain Otto Gurlett, Charles Hartree, John C. Hudson, W. Jones, Mrs. Leech, L. S. Long, Mrs. Mace, R. I. Measures, Wm. Milliken, W. C. Parkes, T. Rochford, W. A. Salamon, T. J. Savage, James Smith, F. K. Soper, W. Tidy, Mrs. J. A. Weston, Miss Wilmot.

Societies affiliated (2).—Alexandra and District Horticultural Society; Jersey Gardeners' Society.

GENERAL MEETING.

JUNE 12, 1894.

SIR TREVOR LAWRENCE, Bart., in the Chair.

Fellows elected (51).—Edward Ayre, Mrs. R. Barker, Miss Barnard, A. B. Bird, Geo. Bolam, Victor Bosco, A. Brown, Edward Brown, Miss E. Carter, W. Cradwick, A. A. H. Crimmere, G. Crawhall, M. C. Citroen, G. Daniels, Thomas Dann, Chas. E. Diggle, Walter Draper, Miss E. J. Forster, Chas. Freeman, Henry O. Garford, General Gillespie, Mrs. Gregory, F. C. D. Haggard, Fred Hardy, Wm. Heath, F. C. Hodgson, Ernest de M. Lacon, Mrs. A. K. Landale, Mrs. Lepper, F. O. Loesch, Hon. W. Lowther, Miss R. Lyell, M. Marcus, Mrs. E. L. Meinertzhagen, Arthur Morris, P. H. Normand, W. Osman, L. S. Pawle, T. H. O. Pease, Mrs. C. Powys Rogers, M. H. Richardson, John Riley, Chas. O. Rogers, Charles Smith, Professor Napoleone Tagliaferro, The Rt. Hon. the Lord Mayor (Alderman Sir Geo. Robt. Tyler), Rev. Francis Warre, H. E. Watts, Mrs. A. Williamson, Chas. Woods, T. Durrant Young.

The President, on behalf of the Veitch Memorial Trustees, presented Memorial Medals to the following gentlemen, viz. :—

To Col. R. Trevor Clarke, F.R.H.S., Welton Place, Daventry, for life-long labours in promoting the advancement of scientific and practical horticulture.

To Mr. Adolphus Henry Kent, B.A., F.R.H.S., of Messrs. J. Veitch & Sons, Chelsea, S.W., for eminent services rendered to botany and horticulture in the preparation of Veitch's Manuals of Coniferæ and of Orchidaceous Plants.

To Mr. James Martin, of Messrs. Sutton & Sons, Reading, in recognition of his services to horticulture in improving races of popular flowers by hybridisation.

To Mr. Charles Moore, F.L.S., F.R.H.S., Director of the Botanic Gardens, Sydney, N.S.W., for life-long services to horticulture, and for the introduction of many new and beautiful plants to British gardens.

To Mr. George Nicholson, A.L.S., F.R.H.S., Curator of the Royal Gardens, Kew, in recognition of his valuable labours in the preparation of the Dictionary of Gardening.

To Mr. Thomas Francis Rivers, F.R.H.S., Sawbridgeworth,

for his successful exertions in raising new varieties of fruits, and in improving fruit culture.

A paper on "Flowering Trees and Shrubs" was read by Mr. Geo. Nicholson, A.L.S. (See p. 56.)

GENERAL MEETING.

JUNE 26, 1894.

Mr. GEO. BUNYARD in the Chair.

Fellows elected (13).—Hon. Mrs. Bamfylde, A. Chandler, Sir Julian Goldsmid, Bart., G. Gregory, G. Humphreys, S. Johnson, R. L. Knight, C. J. Massey, Rev. W. J. Mellor, J. W. Rawlins, H. Spicer, H. Wendl, Mrs. Wilcox.

SCIENTIFIC COMMITTEE.

FEBRUARY 13, 1894.

R. McLACHLAN, Esq., F.R.S., in the Chair, and seven members present.

Edible Tubers.—Mr. D. Morris exhibited specimens of an edible tuber recently imported into the London markets from the Azores Islands. The tubers are cylindrical, obtuse, about two inches long, as thick as the thumb, brilliant crimson externally, and with thickened leaf-scales at regular intervals over the surface. Mr. Morris considered the tubers to be those known in Peru under the name of Oca, and produced by *Oxalis crenata*. Numerous varieties of Oca, differing in size and colour, are grown in New Granada, and their tubers are much esteemed as esculents.

Primula capitata and Basal Rot in Daffodils.—In reply to a question from the Rev. C. Wolley Dod as to the decay of *Primula capitata* at the crown without the formation of a winter bud, which was submitted to the Director of the Royal Gardens, Kew, the following answer had been received:—

"This species of *Primula* always dies after flowering freely. *P. Poissoni*, *P. imperialis*, and several others behave in the

same way under cultivation. Possibly the plants could be kept alive by preventing them from flowering. Basal rot in Daffodils is, we believe, caused by lifting the bulbs before they have finished growth, or by bad treatment whilst they are out of the ground.—W. T. T. D., *November 30, 1893.*”

Mr. Wilks dissented from the view of the cause of basal rot in Daffodils, being of opinion that the trouble is much more frequent when the bulbs are left in the ground all the summer than when they are lifted.

Potatos and Sulphate of Copper.—The superintendent of the garden of H.H. the Nawab Bahadur of Murshidabad reported that the Potato crop at Roesbagh and in Mabarak-Manjil had totally failed. The failure was attributed to heavy rain, and partly to the application of sulphate of copper. In the opinion of the Committee the proportion of copper-salt made use of was too large, especially as it was used in a free state and uncombined with lime. The result was, the plants suffered from the caustic effect of the salt.

American Blight.—Mr. H. R. Dugmore inquired if there was any approved method of preventing the different species of blight ascending from the soil, as in the case of American blight on Apples, mealy-bug on Vines, and scale on Acacias. It was suggested that the grease band employed by Mr. Wilson and others in the case of the winter moth might be tried, in addition to the methods usually adopted of dealing with these pests.

SCIENTIFIC COMMITTEE, MARCH 13, 1894.

R. McLACHLAN, Esq., F.R.S., in the Chair, and seven members present.

American Blight.—Mr. Blandford, alluding to the matter discussed at the previous meeting, expressed the opinion that the woolly aphis (*Schizoneura*) does go down into the soil, but the Coccids do not.

Beetle attacking Orchids.—Mr. Blandford stated that he had received specimens of the pseudo-bulb of a *Dendrobium* perforated by a blunt-headed beetle, *Xyleborus morigerus* (Blandford), and described by him in “*Insect Life.*”

This led to a discussion as to the increasing necessity of

putting imported Orchids into quarantine before introducing them into the Orchid-houses, lest those structures should be overrun with exotic insects. Bisulphide of carbon was recommended as useful for the destruction of insects. Its highly inflammable nature must, however, be borne in mind.

Mr. Michael, speaking of the presence of Acari in dust-sweepings, alluded to the immunity which these creatures possess against poisonous substances, such as bisulphide of carbon. Desiccation is the only method of killing these creatures, but this cannot always be carried out to a sufficient extent without injuring the plant.

"Blue" Primroses, &c.—Mr. G. F. Wilson showed various seedling Primroses of a dark slaty-blue colour, and some plum-coloured with a yellow eye. He also showed flowers of a hybrid Narcissus, presumably between *N. cyclamineus* and *N. Johnstonei*.

Exfoliated Bark in Pears.—Mr. Jenner Weir showed shield-shaped masses of bark, two or three inches long, one or two inches broad, which became detached from the stem of a *Beurré Clairgeau*, the wound so formed subsequently healing up by "occlusion" in the ordinary way.

Camellias, Azaleas, &c., Diseased.—From Christchurch came branches of *Camellias*, *Rhododendrons*, and *Azaleas* gradually shrivelling and dying, more than twenty large plants having died during the last two years without apparent cause. The *Camellias* were badly infested with scale, but nothing could be seen to account for the condition of the other plants. It was suggested that a salt blast might have affected the plants.

Ivies.—Dr. Masters brought shoots of numerous varieties of *Ivy* growing on a wall facing the west, to show the very different way in which they, though all belonging to one species, suffered from the effects of frost. In some the leaves were quite killed, in others wholly uninjured, with every intermediate degree of injury. Mr. Jenner Weir pointed out that the variety *himalaica* was notoriously more tender than many others. Dr. Masters thought it most probable that the whole of the varieties now grown in gardens originated from home-grown plants of *Hedera helix*. He had himself seen two or three forms growing on the same plant. *Hedera helix* is noted by Mr. C. B. Clarke, in *Hooker's "Flora of British India,"* ii., page 739 (1879), as growing through-

out the Himalayas at altitudes of from 6,000 to 10,000 feet, and in the Khasya Mountains at elevations of from 4,000 to 6,000 feet.

“*Cedar*” of Goa.—Dr. Masters contributed the substance of a paper on the history of this tree, which is inserted in the *Journal* of the Society. The tree in question is a Cypress, the only known large examples of which exist at Bussaco, in Portugal, where they have been known since the beginning or middle of the seventeenth century. They are supposed to have been introduced from Goa, but no such Cypress grows wild in that region. *C. lusitanica*, alias *C. glauca*, is now commonly planted in India and in South Europe. In some parts of the British Isles it thrives, but is in most places tender. The tree mentioned in the Conifer Conference Report as having attained a height of 39 feet at Rhosdhu, in Dumbartonshire, was erroneously called *lusitanica*, as shown by specimens now received from Rosdhu and exhibited to the Committee, and which were clearly referable to *C. Lawsoniana*. (See pages 1 to 11.)

Root Galls.—The Chairman alluded to the existence of *Biorhiza* (*Cynips*) *aptera* on the roots of the Plum, Oak, Deodar, Beech, and Birch, and stated that it had now been proved repeatedly that the insect producing the root gall is exclusively female, and is always destitute of wings. The male form of the same species produces the spongy galls on the leaves of the Oak known as Oak Apples. The only true British *Cynips* is *Cynips Kollari*, that which makes the round galls on the Oak. This insect has been introduced within the last thirty or forty years. Other galls, supposed to be the work of different genera of insects, are now known to be the work of two stages or generations of one and the same species.

SCIENTIFIC COMMITTEE, MARCH 27, 1894.

R. McLACHLAN, Esq., F.R.S., in the Chair, and five members present.

The late Mr. Jenner Weir.—It was unanimously resolved that a letter be sent to the widow expressive of the sense the Committee entertained of the loss occasioned by the decease of

Mr. Weir, and of sincere sympathy with the members of his family in their bereavement.

Diseased Azaleas, &c.—Further specimens of the plants alluded to at a former meeting, together with samples of soil and water, were sent, but the Committee were unable to give a definite opinion.

Subterranean Shoots.—From Mr. Carpenter, of Eastbourne, came a Cauliflower stalk, the lower portion of which had produced, intermingled with its roots, leaf-bearing shoots, at first directed downwards like the roots, but soon bending upwards to reach the surface. The condition was probably due to some injury to the upper part of the stem inducing the production of shoots from the lower end.

Abnormal Tulip.—Mr. J. Weathers exhibited two bulbs of Prince of Austria. This variety seems to be very prolific in abnormal forms similar to the specimens exhibited. The perianth-segments, stamens, and pistil were all much elongated, and the perianth-segments, instead of being deep carmine, were green in colour.

Earwigs.—A correspondent wrote as follows: "I have been pestered with earwigs, which bore through Peaches, Apricots, and Nectarines to get at the stone, defiling the fruit, and turning it of a greenish-blue colour, making it unfit for eating." With a view to obviate such mischief in the coming season, the correspondent now sought advice, he having tried the usual traps without avail. It was suggested that slices of Carrot or Potato be placed in the hollow Bean-stalks used as traps, and that the walls be looked to and "pointed."

Saxifraga luteo-purpurea.—A letter from the Rev. C. Wolley Dod, referring to the synonymy of this plant, was read. Information was requested as to the name to be adopted in future. The letter was referred to Dr. Masters.

Himalayan Rhododendrons.—Sir John Llewelyn sent cut trusses of several varieties, with the following remarks: "I send up a few trusses of Himalayan Rhododendrons, and have selected six, namely, *Rhododendron barbatum*, which has been in bloom for the past six weeks; *R. Thomsoni*, just commencing; *R. arboreum*, pink variety; *R. Falconeri*, *R. grande*, and *R. Campbelli*. None of my Himalayan Rhododendrons have been injured by the winter, though in the first week of 1894 we had

24° of frost for about a week; and later on, when the Rhododendron blooms were expanding, we had on February 19 and 20 14° of frost each night, with what effect upon the bloom you may judge for yourself. I should say the plants receive a certain amount of natural protection from adjacent trees, but absolutely none of an artificial nature. Very much advantage and pleasure may be obtained by those who exercise their judgment in distinguishing between the species of these Himalayan Rhododendrons which are being proved hardy in this country, and those which require greenhouse shelter, and, given suitable soil and climate, we may expect to see them more generally grown than appears to have been hitherto the case. Where the wood is well ripened in the summer, before the autumn and winter frosts commence, many species will stand the cold with impunity, but the danger arises when the spring frosts recur after the buds have begun to grow. Some are much earlier than others in their leaf-action, and run a risk of getting the tender foliage cut off where later sorts escape, and these, of course, cannot be accounted as hardy as the later species. Frost on the expanded bloom may destroy a truss, and yet four or five days later fresh trusses take the place of those injured, for the unexpanded pips resist frost in a wonderful manner. All the blooms now sent have experienced frost, namely, 6° on the 16th and 7° on March 17. Taking Sir Joseph Hooker's 'Flora of British India' as my guide, and judging from it of the approximate elevations at which the species occur, I should consider that those which grow in their native habitations at 9,000 feet or upwards above the sea-level will be found to prove hardy enough to thrive out-of-doors with us. I am trying and proving the following species:—

Rhododendron grande.	Rhododendron Griffithianum.
„ Hodgsoni.	„ Thomsoni.
„ Falconeri.	„ Hookeri.
„ arboreum.	„ barbatum.
„ niveum.	„ Edgworthii.
„ campanulatum.	„ ciliatum.
„ lanatum.	„ glaucum.
„ campylocarpum.	„ cinnabarinum.

and there are others I am anxious to obtain and try. Prolonging the season is one advantage, the magnificent foliage for winter decoration which is afforded by many species is another, while the colours of the bloom of other species are such as no lover of the genus can pass by without admiration. M. Maurice de

Vilmorin stated that these Rhododendrons are usually not hardy in France, but he had met with some in the garden of M. Liais at Cherbourg, and mentioned a fine specimen of *R. Falconeri* on a lawn near Brest."

SCIENTIFIC COMMITTEE, APRIL 10, 1894.

Rev. C. WOLLEY DOD in the Chair, and seven members present.

The late Mr. Jenner Weir.—Dr. Masters announced the receipt of a letter in reply to the letter of condolence addressed to Mrs. Weir and her family. In the reply allusion was made to the keen interest taken by Mr. Jenner Weir in everything relating to gardening, and to the fact that "his honourable connection with the Scientific Committee of the Society will be one of the treasured memories of his widow and children." The letter was ordered to be inserted on the minutes.

Saxifraga luteo-purpurea, hort.—A conversation took place as to the correct name and position of this plant, which was considered to be a hybrid. Dr. Masters announced that he was in correspondence about the plant with Professor Engler, of Berlin, the monographer of the genus.

Leafy Shoot from the Base of an Orchid Tuber.—A specimen of the tuber of some terrestrial Orchid was shown in which a leafy shoot was produced from the base. The specimen was referred to Professor Farmer.

What a Daffodil can do.—Mr. E. H. Jenkins sent a specimen with the following communication:—

"Among some Daffodils that were flowered in the greenhouse in February 1893, some few pots had become mixed. When flowering was complete these were set aside by themselves, and, when the foliage had died away, were shaken out of the soil. The few mixed ones were put aside for discarding, and were not troubled about afterwards; therefore from July 1893 to April 5, 1894, these few bulbs have been in an otherwise empty flower-pot, and the one enclosed was on the top. Without a particle of soil, fully exposed to the variations of weather and so forth, and without even producing a vestige of root, this bulb is doing its best to produce the flower that it contained. I have heard people talk of Daffodils when forced going blind; but I

have more than once stated, what the enclosed bulb seems to me to fully demonstrate, that if a flower-bud is once formed within the bulb, it will come forth in some form or other, provided always, of course, that the bulbs are free of maggots. The variety enclosed is *Rugilobus*, which in the open beds were fully developed a week ago, so that the coming of its flower differs but little from bulbs planted in due season."

Súntără Oranges.—Dr. Bonavia sent specimens, together with the following communication:—

"There is at present in the London shops a loose-skinned Orange from India, that commonly known there as the *Súntără Orange*, of which there are many varieties. The *Súntără Orange* is the *Citrus aurantium sinense* of Rumphius, while the *Valencia Orange* or *Portugal Orange*, of which also there are many varieties, is the *Citrus aurantium sinense* of Galesio. The *Mandarin* or *Tangerine Orange* is a sub-section of the *Súntără* type, and is a different thing from the latter. In a Piccadilly shop the *Súntără Orange* has been rightly ticketed as an *Indian Orange*; but in a Bond Street shop they ticketed it as *Mandarin Orange* from South Australia. This is manifestly erroneous. The Australian seasons are just the opposite of our seasons. Their spring is in September, and their Oranges do not ripen till July. So that these *Súntără* could not have come from Australia. The *Súntără Oranges* in Ceylon are called *Mandarins* by the English. Oranges may be thus classed:—I. *Cling-skins*, including *Citrus aurantium sinense* of Galesio, *Portugal Orange*, *St. Michaels*, *Blood Orange*, *Jaffa Orange*, *Navel Orange*, *Florida Orange*, and many others. II. *Free-skins*, *Citrus aurantium sinense* of Rumphius, *Súntără Orange* of India, of which there are numerous varieties. The *Mandarin* [*Citrus nobilis* of Loureiro(?)] I consider a sub-section of the *Súntără* type, but as different from it as any two distinct varieties of *Apple* or *Pear*. (See pp. 44 and 53, and pl. cviii. of '*Oranges and Lemons of India and Ceylon*.'—G. BONAVIA."

The Bermuda Juniper.—Dr. Masters made some comments on fresh specimens received from Bermuda through the kindness of Arthur Haycock, Esq. The history of this tree is given in the *Gardeners' Chronicle* for May 26, 1883, by Mr. W. B. Hemsley. *Juniperus bermudiana* is the only tree of any size in the island, where it is still abundant. It is quite distinct from the "*Red Cedar*" (*Juniperus virginiana*) of the United States, though

it may have descended from a common ancestor. The wood, a specimen of which was also exhibited, is very like that of the Virginian Juniper, and is used for constructional purposes, being hard and durable. The special interest attaching to the tree is the fact that it is peculiar to the island, and the questions naturally arise, whether it originated there spontaneously—an hypothesis now considered untenable—or whether it was imported, and, if so, whence. In any case, there is evidence of its presence ages before the present time in soil now much below the surface of the sea. The most probable explanation of its presence in these coral islands is that fruits of the Virginian Juniper were introduced by birds from the continent to the island, and that in course of time the species has varied so greatly, owing to local conditions, that it is now so different from its ancestral state as to warrant being placed in a separate species.

Variation in Narcissus.—Mr. Wolley Dod showed leaves of *Narcissus incomparabilis* marked with longitudinal stripes of yellow. The condition was common this year, and independent of variations in soil. Mr. Wilks had met with the same experience.

SCIENTIFIC COMMITTEE, APRIL 24, 1894.

R. McLACHLAN, Esq., F.R.S., in the Chair, and eight members present.

Precocious Flowering of Hawthorn.—The Chairman showed sprays of the common Hawthorn in bloom on April 22. [The earliest date given in Roberts's "Naturalist's Diary" is April 30, the latest June 4, average May 13.]

Cypripedium with Three Lips.—A specimen of *C. niveum*, received by Messrs. Sander from M. Joly, of Vienna, was exhibited. The peculiarity consisted in the fact that the lateral petals had assumed the form ordinarily confined to the lip. The plant was stated to produce such flowers regularly.

Coccid on Ash.—The scale insect affecting Ash, and shown at the last meeting, was ascertained to be *Chionaspis salicis*, which, according to Mr. Douglas, is common on Ash, Lime, and other trees.

Diseased Lily Leaves.—Specimens of *Lilium Harrisii* were

exhibited, in which the leaves were affected by the rot commonly met with in Lilies, and due to a fungus—*Botrytis*.

Absorption of Odoriferous Vapours by Oranges.—Dr. Bonavia exhibited specimens, and submitted the following communication :—

“ Not long since I submitted to the notice of the Committee a curious fact connected with the tainting of the Orange pulp and juice with the aroma of a box containing musty damp hay. On that occasion there were in the box four different kinds from Australia, and all were tainted with this musty aroma, and remained so tainted for weeks, after having been unpacked and aired. On several occasions I have bought from the shops Blood Oranges which left on the palate an after-flavour of Onions. In one instance, a lot of Blood Oranges were so strongly tainted with this Onion flavour that they were scarcely edible. I did not observe any such taint in other kinds of Oranges.

“ I could not account for this strange flavour in the Blood Orange of the shops, which, according to my experience, both in the Mediterranean and in India, is one of the finest-flavoured Oranges in existence.

“ However, with the experience of the Australian box of Oranges, I thought that possibly Oranges from Spain may be sometimes shipped in the same vessel with Spanish Onions, and stored in the same hold during the voyage. Thus, the Blood Oranges might get tainted with the Onion aroma, which would pervade the surrounding atmosphere.

“ In order to verify this suspicion, I wrote to the great fruit brokers in the City, Messrs. M. Isaacs & Sons, and put a number of questions to them. They very kindly and promptly answered all my questions, which are rather astonishing. They said :—

“ 1. A fair quantity of Blood Oranges are grown in the district of Valencia, which has also become in the last few years one of the most important districts for producing Onions, and in many cases both Oranges and Onions are grown very closely together.

“ 2. Blood Oranges are often stored in the same warehouses as Onions before they are shipped, and also before and during packing.

“ 3. We should say that there are few steamers which bring

Blood Oranges from Spain that do not bring Onions in the same hold.

“4. After being landed, Oranges and Onions are stored very often in the same floor, sometimes for a couple of weeks together.”

“So it appears that Valencia Oranges are surrounded by an Onion-tainted atmosphere from the time of their growth on the trees to the time they are sold in shops.

“I think this is enough to account for the strange Onion-like flavour that I have detected in several lots of Blood Oranges sold in the London shops.

“Other kinds of Oranges from Valencia must come in contact with a tainted atmosphere, but for some reason I have not detected this taint in other than *Blood* Oranges.

“The question that now remains to be answered is this, Why is the Blood Orange more subject to atmospheric contamination than other kinds? Is there any ingredient in the Blood Orange which has a special attraction for the aroma of Onion?”

“I am not in a position to attempt any reply to this question.

“I have put some Blood Oranges, which were already slightly tainted, in a box with a chopped Spanish Onion for ten days, and now submit them to the Committee for examination. [The Onion-flavour was distinctly perceptible.—ED.]

“I may add that Messrs. Isaacs & Sons have kindly offered to send me a few Oranges, which may *not* have come in contact with Onions, for experiment. If I get them, I may perhaps be able to submit the result of further investigations in this direction.—G. BONAIVIA.”

SCIENTIFIC COMMITTEE, MAY 8, 1894.

R. McLACHLAN, Esq., F.R.S., in the Chair, and five members present.

“*Alternating Generations.*”—Mr. McLachlan brought before the Committee a book bearing the above title, lately issued by the Clarendon Press. It is the English translation of a work on Oak-galls and gall-flies by Hermann Adler, translated by Charles R. Straton, F.R.C.S. Ed. It has two large plates of illustrations.

Injuries to Leaves of Rhododendron and Gaultheria.—Dr. Hugo Müller exhibited leaves of *R. ponticum* and *Gaultheria Shallon* with the edges completely eaten out, some being destroyed as far as the midrib. The plants from which the leaves were taken were injured regularly every spring. Mr. McLachlan suggested that the injury was caused by weevils (probably a species of *Otiorrhynchus*). The better way to deal with them would be to watch at night, and shake the insects over a sheet of white paper or calico, and destroy them at regular intervals.

Iris iberica.—Mr. G. F. Wilson brought plants showing considerable range of variations in seedlings of *Iris iberica*. One was a singularly large and finely marked specimen. The other was much lighter in colour, and with the spots not so distinct.

Rhododendrons from Sikkim.—Mr. G. F. Wilson exhibited flowers of a hybrid Sikkim *Rhododendron* with large rose-coloured flowers. The petals were very broad and flat, measuring $2\frac{1}{2}$ to 3 inches across. Probably allied to *R. Nandeo*.

Crinum capense.—A specimen of this plant, forwarded by Mr. F. W. Moore, of the Botanic Garden, Glasnevin, was interesting, as it had been successfully flowered in the open air near Dublin. The flowers were numerous, not so large as the type, but fully coloured.

Aquilegia Stuarti.—This striking plant, with deep blue sepals and white petals, was shown by the President, Sir Trevor Lawrence. It is an improved form of *A. glandulosa*, refined in colour, very large and attractive.

Coryanthes Wolfi.—This singular species, first flowered in Europe by Mr. F. W. Moore, Keeper of the Botanic Garden, Glasnevin, was referred to the Committee on account of the specialised character of the flowers, which are orange-coloured spotted with reddish chocolate. The hood is concave and almost solid. In every other species it is helmet-shaped and hollow beneath. The horns at the base of the column are very large. The plant is a native of Ecuador, and grows on Cacas trees in the littoral districts of the Guayas. It flowers when these level lands are mostly inundated. The flower spikes are stiff and upright, and not pendulous as in other species.

SCIENTIFIC COMMITTEE, JUNE 12, 1894.

Dr. M. T. MASTERS in the Chair, and five members present.

Lilium candidum Diseased.—Specimens were sent by Mr. G. Tebbutt, of Mogden House, Isleworth, with the following observations: "The plants were attacked last year, but not to such an extent as now. This year the bulbs were transplanted to a fresh place, but the disease has become worse. It will be noticed that the bulbs themselves are strong and healthy, with very little sign of fungoid growth, while the stems and leaves are badly attacked. In the same patch of ground are *L. chalcedonicum*, *L. tigrinum*, and *L. Martagon*, but not one of these shows signs of the disease. Tulips which now occupy the ground planted with *L. candidum* last year have also been attacked." Dr. Masters suggested spraying with Bordeaux mixture early in the season, so as to reach the bulbs and young leaves. Such a method would be protective, but not necessarily curative. The disease itself is fully described by Prof. M. Ward in "Annals of Botany," ii. page 319.

Pears Damaged by Frost.—Dr. Masters exhibited several small Pears, black and decayed, the result of the great frost in May.

Droppers in Snowdrops.—He also showed specimens of this peculiarity, which is more commonly known in Tulips.

Monstrosities.—He also exhibited the two forms of "Peloria" in *Calceolaria*—1, a true reversion to a regular "sleeve"-like form; 2, a fourfold repetition of the "slipper"—as well as a *Lælia* with three lips (true peloria), and the subvirescent spathes of Aroids.

Photos. from Transvaal.—Dr. Masters also exhibited some illustrations of trees, &c., but, excepting a fan-shaped *Mimosa*, they were not determinable.

Trifolium subterraneum.—He also showed specimens and drawings of this Clover found at Folkestone. A full description of its method of burying the unripe pods and deriving nourishment by means of the hairs will be found in Darwin's "Movements of Plants," page 573.

Horse Chestnuts Cankered.—Specimens and photos. of a badly diseased tree were received from the Superintendent of the Royal Victoria Park, Bath, with the following remarks: "The tree was planted (one of six) about sixty years ago: three of the six have

died from the same disease, and the others are affected more or less in the same way. It will be observed from the photo. that the diseased growth is gradually spreading all round the trunk of the tree, and will eventually choke it (as has been the case with the others) by preventing the natural flow of the sap. I may say that the subsoil here is in some parts gravel, and in others blue lias clay. The trees were planted over both, and were all grafted just above the ground. Six years ago it was thought that if we had trees on their own roots they might not be subject to the disease; accordingly some good nuts were gathered from the best of the trees, and a number of seedlings were raised. Most of them have flowered this season. Of the flowers some are inferior, others equal, and others superior to those of the parent. The ordinary white-flowered Horse Chestnut is quite free from any disease, as are also the Pavias." The specimens were forwarded to Prof. H. Marshall Ward for examination and report.

Asparagus Fasciated.—Mr. Kitchen, of Hampton, sent a specimen of this extremely common phenomenon, with the end spirally twisted into a helix.

Polygonum Leaves marked by Frost.—Mr. Henslow showed leaves received from Wiltshire having two colourless longitudinal bands. Every leaf on the tree was said to be similarly marked. It was attributed to the frost catching the young leaves just where they were exposed on unfolding.

FRUIT COMMITTEE.

JANUARY 16, 1894.

P. CROWLEY, Esq., in the Chair, and twenty-two members present.

Awards Recommended:—

Bronze Banksian Medal.

To His Grace the Duke of Northumberland, Albury Park, Guildford (gr. Mr. Leach), for examples of Lady Downe's Seedling and Mrs. Pearson Grapes.

Cultural Commendation.

To Sir Charles E. G. Phillips, Picton Castle, Haverfordwest (gr. Mr. J. Dumble), for fine examples of the Bahia Navel Oranges.

Other Exhibits.

The Rev. C. Brewster, South Kelsey Rectory, Caistor, Peterborough, sent a seedling Apple of fair quality named Jenny Brewster, which the Committee requested to see again.

H. St. Vincent Ames, Esq., Cote House, Westbury-on-Trym (gr. Mr. Bannister), sent a new Apple named Standard Bearer, which was considered to closely resemble Cobham. Examples were retained for comparison with that variety, the Secretary being instructed to ask for more particulars as to the habit and growth of the tree, &c.

P. Crowley, Esq., Croydon, sent examples of Taro, the powdered root of *Alocasia esculenta*, which is used as an article of food in the Sandwich Islands.

Mr. Leach, Albury Park Gardens, sent examples of seedling Apples named Albury Park Nonesuch and Warkworth Castle, and several heads of Celery and Cabbage.

Examples of a new wireworm-trap were submitted by Messrs. Osman & Co., of Commercial Street.

FRUIT COMMITTEE, FEBRUARY 13, 1894.

P. CROWLEY, Esq., in the Chair, and twenty-five members present.

Awards Recommended:—*Silver Gilt Knightian Medal.*

To Messrs. H. Lane & Son, Berkhamstead, for a collection of seventy varieties of Apples in splendid condition, the examples being large and fine. The following were specially noteworthy: Lane's Prince Albert, Blenheim Orange, Bismarck, Annie Elizabeth, Warner's King, Wadhurst Pippin, and King of the Pippins.

Silver Knightian Medal.

To Messrs. Cheal & Sons, Lowfield, Crawley, for a collection of Apples and Pears of good appearance and quality.

Award of Merit.

To Apple Roi d'Angleterre, a large handsome fruit of good quality, from Mr. Woodward, The Gardens, Barham Court, Maidstone.

Cultural Commendation.

To Mr. Woodward, Barham Court, for very large and fine examples of Lane's Prince Albert and Annie Elizabeth Apples.

To W. Roupell, Esq., Roupell Park, for very large and beautiful examples of Apple Newton Wonder.

To Lord Wantage, Wantage (gr. Mr. Fyfe), for well-kept Black Alicante Grapes.

Other Exhibits.

H. St. Vincent Ames, Esq., again submitted fruits of Apple Standard Bearer, which were very handsome and of good quality. This had received an "Award of Merit" at a previous meeting, and was considered by the Committee to closely resemble Cobham. It was resolved to ask Mr. Young and Mr. Iggulden to inspect the trees whilst growing, and to report to the Committee.

Mr. W. Holmes, Normanton, Derby, sent fruits of an Apple named Langley Pippin.

R. Shaw, Esq., 19 Bernard Street, Russell Square, sent an

Apple named Christie's Pippin. It was pointed out that there was another Apple of that name.

Mr. Watkins, Pomona Farm, Hereford, sent examples of Apples named Flanders Pippin, Forester, Scarlet or Crimson Costard, Stoke Edith Pippin, and Winter Queening, varieties of fine appearance and considerable merit, grown in that district, but almost unknown elsewhere.

Messrs. Pearson & Sons, Chilwell, Notts, sent some good fruits of Newton Wonder Apple.

Lord Wolverton, Iwerne Minster (gr. Mr. Davidson), sent a dish of good Tomatos named Comet.

FRUIT COMMITTEE, MARCH 13, 1894.

P. CROWLEY, Esq., in the Chair, and twenty-one members present.

Awards Recommended:—

Silver Banksian Medal.

To A. H. Smee, Esq., Carshalton (gr. Mr. Cummins), for a collection of fifty varieties of Apples and six of Pears in good condition.

Cultural Commendation.

To the Duke of Northumberland, Syon House, Brentford (gr. Mr. Wythes), for Asparagus and Strawberries Vicomtesse Héricart de Thury.

Other Exhibits.

The Earl of Harrington, Elvaston Castle, Derby (gr. Mr. Goodacre), sent some fine examples of the new Apple Newton Wonder.

Lord Suffield, Gunton Park, Norwich (gr. Mr. Allan), sent a seedling black Grape, a cross between Muscat of Alexandria and Black Morocco. It was of good appearance and fair quality. From the same exhibitor came examples of Onion Reliable, which was considered to be a good stock of Brown Globe.

Messrs. Veitch & Sons, Chelsea, sent a basket of very highly coloured Kales, which were very pretty.

The Duke of Northumberland, Albury Park, Guildford (gr. Mr. Leach), sent Tomato Ladybird and new Potatos, which had been grown in pots.

Messrs. Rivers & Son, Sawbridgeworth, sent several promising seedling Apples.

FRUIT COMMITTEE, MARCH 27, 1894.

P. CROWLEY, Esq., in the Chair, and nineteen members present.

Awards Recommended:—

Silver Knightian Medal.

To the Duke of Northumberland, Syon House, Brentford (gr. Mr. Wythes), for a large collection of vegetables in season, including Asparagus, Cucumbers, Seakale, Potatos, Cabbage, Lettuce, Leeks, &c., altogether thirty dishes.

Other Exhibits.

W. Shepherd, Esq., Over Wallop, Hants, sent a plant of what was termed a new Salad Kale, which the Committee recognised as the Chou de Milan, or Asparagus Kale. A very useful, hardy winter green, the young leaves being also used like Mustard as a salad.

Messrs. Jarman, Chard, Somerset, sent examples of Apple Somerset Lasting, which it was requested should be sent again earlier in the season.

FRUIT COMMITTEE, APRIL 10, 1894.

P. CROWLEY, Esq., in the Chair, and twenty members present.

Awards Recommended:—

Bronze Knightian Medal.

To the Duke of Northumberland, Syon House, Brentford (gr. Mr. Wythes), for a collection of various fruits and vege-

tables, including Strawberries, Figs, *Monstera deliciosa*, Seakale, Asparagus, &c.

Cultural Commendation.

To Mr. A. R. Allan, Hillingdon Court Gardens, Uxbridge, for Strawberries La Grosse Sucrée, very large and fine.

Other Exhibits.

W. H. Evans, Esq., Forde Abbey, Chard (gr. Mr. Crook), sent four dishes of Apples, viz., Royal Somerset, Sturmer Pippin, Cox's Orange Pippin, and Striped Beefing; also good examples of an Onion named Long Keeper, which was recommended to be tried at Chiswick.

Mr. O. Thomas, The Royal Gardens, Windsor, sent fine examples of Tomato Frogmore Selected, a fruiting plant being requested to be sent to the next meeting.

Mr. T. S. Marshall, Barnham, Sussex, sent some very handsome Pears grown in Cape Colony.

Messrs. Rivers & Son, Sawbridgeworth, exhibited several fine Pears, also from the Cape, and fruits of the Wagener Apple.

FRUIT COMMITTEE, APRIL 24, 1894.

P. CROWLEY, Esq., in the Chair, and twenty members present.

Awards Recommended:—

Silver Banksian Medal.

To Messrs. Laxton Brothers, Bedford, for twelve plants in pots of Strawberry Royal Sovereign, laden with fine handsome fruit.

Bronze Banksian Medal.

To Lord Foley, Ruxley Lodge, Esher (gr. Mr. Miller), for a good dish of Noble Strawberry, Brown Turkey Figs, and two baskets of excellent Mushrooms, one grown in a Mushroom-house, the other in beds in the open ground.

First Class Certificate.

To Tomato Frogmore Prolific, as an early forcing variety, from Mr. Owen Thomas, Royal Gardens, Windsor.

Cultural Commendation.

To the Duke of Northumberland, Syon House, Brentford (gr. Mr. Wythes), for Brown Turkey Figs and *Monstera deliciosa*.

Other Exhibits.

Mr. Leach, Albury Park Gardens, sent a Cabbage named Union Jack, very similar to the Early Offenheim from the Society's Gardens.

P. Crowley, Esq., presented some excellent Plums which had been dried in an ordinary kitchen oven.

 FRUIT COMMITTEE, MAY 8, 1894.

P. CROWLEY, Esq., in the Chair, and twenty-four members
present.

Awards Recommended :—*First Class Certificate.*

To Cucumber Progress, exhibited by Mr. Mortimer, Farnham, Surrey, stated to be a cross between Matchless and Improved Telegraph. Fruits straight, 20 inches in length, deep green in colour, of good quality, and extremely handsome.

Award of Merit.

To Melon Pride of Ingestre, exhibited by Mr. Gilman, Ingestre Hall Gardens, a cross between Colston Bassett and Syon House. Fruit small, round, slightly netted; flesh white, richly flavoured, and good.

Other Exhibits.

Mr. Vert, Audley End, sent examples of Vert's Favourite Cucumber, a cross between Lord Kenyon's Favourite and Telegraph. A good useful variety.

Messrs. Cannell & Sons, Swanley, sent a Cucumber named Our Future Queen.

The Marquis of Exeter, Burghley (gr. Mr. Gilbert), sent a Broccoli named The Protector, having very close solid heads of excellent quality.

The Duke of Northumberland, Albury (gr. Mr. Leach), sent fruits of Tomato Ladybird, and examples of new Peas from a November sowing.

TEMPLE SHOW.

FRUIT COMMITTEE, MAY 23, 1894.

P. CROWLEY, Esq., in the Chair, and twenty-two members present.

Awards Recommended :—*Silver Gilt Knightian Medal.*

To Messrs. G. Bunyard & Co., Maidstone, for a collection of fifty varieties of Apples in an excellent state of preservation.

To the Duke of Northumberland, Syon House, Brentford (gr. Mr. Wythes), for a collection of excellent vegetables, with Brown Turkey Figs, Peaches, Nectarines, Melons, *Monstera deliciosa*, &c.

To Mr. S. Mortimer, Swiss Nursery, Farnham, for a collection of Melons, Cucumbers, and Tomatos. The Cucumbers A1, Success, and Progress, having been certificated by the Committee in the years 1891, 1892, and 1893 respectively, were extremely handsome.

Silver Knightian Medal.

To Messrs. Veitch & Sons, Chelsea, for a collection of fifty varieties of Apples in very excellent condition.

To Mr. G. Featherby, Gillingham, Kent, for very fine Black Hambro' Grapes, Dymond Peaches, Covent Garden Favourite Cucumber, and a dish of Ne Plus Ultra Beans.

Silver Banksian Medal.

To Sir J. W. Pease, Bart., Hutton Hall, Guisborough (gr. Mr. J. McIndoe), for beautiful high-coloured fruits of Early Rivers and Lord Napier Nectarines.

To Lord Foley, Ruxley Lodge, Esher (gr. Mr. Miller), for a collection of fruit and vegetables, including excellent Melons, Peaches, Plums, Cherries, with very fine Mushrooms, Asparagus, &c.

To L. Baker, Esq., Ottershaw Park, Chertsey (gr. Mr. Osman), for Black Hambro' Grapes and Melons.

Award of Merit.

To Melon Centre of England, from Andrew Pears, Esq., Spring Grove, Isleworth (gr. Mr. Farr). Fruit scarlet-fleshed, melting, sweet, and well-flavoured.

To Apple Oaklands Seedling, from Messrs. Lane & Son,

Berkhampstead. Fruit of fair size, somewhat flattened, pale in colour; flesh melting, sweet, and richly flavoured; excellent as a late dessert fruit.

Cultural Commendation.

To Lord Wantage, Wantage, Berks (gr. Mr. Fyfe), for a dish of very fine Dwarf Champion Tomatos.

To Mr. C. F. Wight, Parson's Green, Fulham, for excellent Mushrooms.

Other Exhibits.

Messrs. Laxton Brothers, Bedford, exhibited some fine examples of Strawberry Royal Sovereign in pots.

FRUIT COMMITTEE, JUNE 12, 1894.

P. CROWLEY, Esq., in the Chair, and twenty members present.

Awards Recommended:—

Award of Merit.

To Melon Eclipse, from Mr. A. Mortimer, Swiss Nursery, Farnham. A cross between Empress and Imperial. Fruit large, oval, green, well-netted; flesh green, juicy, and well-flavoured.

Cultural Commendation.

To the Duke of Northumberland, Syon House, Brentford (gr. Mr. G. Wythes), for excellent examples of Duke of Albany and Chelsea Gem Peas, and Walcheren and Pearl Cauliflowers.

To Mr. E. Beckett, The Gardens, Aldenham House, Elstree, for very large and fine fruits of Lord Napier Nectarine.

Other Exhibits.

Mr. T. Bradley, Tilehurst Nurseries, Reading, sent a fine-looking Tomato, a cross between Conference and Perfection.

Mr. F. J. Mitchell, Farncombe, sent a very prolific Tomato, a cross between Challenger and Trophy.

From Mr. A. Dean, Kingston-on-Thames, came an Onion named Crook's Long Keeper, in a good state of preservation.

Mr. J. P. Kitchen, Hampton, sent a fasciated growth of Asparagus.

Mr. F. Buss, Brook Croft, Walthamstow, exhibited his expanding Strawberry protector.

Seedling Melons were exhibited by Lord Howard of Glossop, Derbyshire (gr. Mr. B. Ashton); the Duke of Northumberland, Syon House (gr. Mr. Wythes); R. Burrell, Esq., Westley Hall, Bury St. Edmunds (gr. Mr. A. Bishop), very promising variety; Lord Foley, Ruxley Lodge, Esher (gr. Mr. Miller); and Col. Archer Houblon, Welford Park, Newbury (gr. Mr. C. Ross).

FRUIT COMMITTEE, JUNE 26, 1894.

P. CROWLEY, Esq., in the Chair, and sixteen members present.

Awards Recommended :—

Silver Gilt Knightian Medal.

To Lord Llangattock, The Hendre, Monmouth (gr. Mr. Coomber), for twelve remarkably fine and well-grown Queen Pineapples.

To the Duke of Northumberland, Syon House, Brentford (gr. Mr. Wythes), for a large and very complete collection of thirty-six varieties of vegetables, of good quality, along with several Melons and Nectarines.

Silver Knightian Medal.

To C. E. Keyser, Esq., Warren House, Stanmore (gr. Mr. Gleeson), for six well-grown Queen Pineapples.

Silver Banksian Medal.

To James Thorpe, Esq., Coddington Hall, Newark (gr. Mr. Cranford), for fifteen dishes of fruits and vegetables, many being of considerable merit.

Award of Merit.

To Strawberry May Queen, from Mr. J. Collis, Bollo Lane, Chiswick. Fruit large and obovoid, deep red, somewhat

resembling Sir J. Paxton, but much earlier, and of higher flavour than that variety.

Cultural Commendation.

To the Earl of Harrington, Elvaston Hall, Derby (gr. Mr. J. Goodacre), for Black Hambro' Grapes and Belle de Doué Peaches.

Other Exhibits.

New seedling Melons were exhibited by R. Burrell, Esq., Westley Hall, Bury St. Edmunds (gr. Mr. A. Bishop); Lord Howard of Glossop (gr. Mr. B. Ashton); C. T. Cayley, Esq., Leigham Court Road, Streatham (gr. Mr. Poulton); and P. Ralli, Esq., Ashstead Park, Epsom (gr. Mr. Hunt).

Messrs. J. Veitch & Sons, Chelsea, exhibited some good Cherries, Bigarreau de Schrecken and Empress Eugénie, growing in pots.

Messrs. Laxton Brothers, Bedford, sent two boxes of mixed seedling Strawberries.

Mr. Divers, Wierton House Gardens, Maidstone, sent a box of French Crab Apples in good condition, and some very fine Long-pod Beans.

Mr. Warren, Handcross Park, Sussex, exhibited well-grown Violette Hâtive Peaches.

From Mr. Stogden, Inglenook, Surrey, came Lettuces and Radishes.

Mr. R. Dean, Ealing, sent a good Curled Cabbage Lettuce named Blonde Stonehead.

Messrs. Cooper, Taber & Co., Witham, Essex, sent very fine examples of Pea Duke of York, the Award of Merit given to it last year being confirmed.

FLORAL COMMITTEE.

JANUARY 16, 1894.

W. MARSHALL, Esq., in the Chair, and twenty-eight members present.

Awards Recommended:—

Silver Flora Medal.

To N. L. Cohen, Esq., Round Oak, Englefield Green (gr. Mr. A. Sturt), for a fine display of *Freesia refracta alba*.

To Messrs. J. Laing & Sons, Forest Hill, for a group of foliage and flowering plants, consisting of Begonias, Bertolonias, Palms, Cyclamen, double white Primulas, Azaleas, Ericas, Anthuriums, Ferns, and Orchids.

Silver Banksian Medal.

To the Hon. W. F. D. Smith, M.P., Greenlands, Henley-on-Thames, for a group of well-flowered *Hippeastrums*, arranged with Palms, Aralias, Grevilleas, and Ferns.

To Messrs. E. D. Shuttleworth & Co., Peckham Rye, for a group of highly coloured *Codiaeums* (*Crotons*) and *Dracænas*; also Palms, Aralias, Ferns, and Lilies-of-the-Valley.

Bronze Banksian Medal.

To Messrs. H. Cannell & Sons, Swanley, for a collection of Chinese Primulas of compact habit and of many shades of colour.

Award of Merit.

To Carnation John Peter Rugus (votes, 15 for, 7 against), from the Duke of Marlborough, Blenheim (gr. Mr. Whillans). Flowers bright scarlet, of medium size; petals broad and deeply toothed.

To Carnation Sir H. Calcraft (votes, unanimous), from the Duke of Marlborough (gr. Mr. Whillans). Large dark-red flowers of fine form.

Other Exhibits.

F. R. Robinson, Esq., Blagdon House, Sneyd Park, Bristol (gr. Mr. Ambrose), sent cut blooms of a Tree Carnation named

Blagdon Surprise, a variety with pure white sweetly scented flowers. The Committee wished to see the plant.

The Right Hon. J. Chamberlain, M.P., Highbury, Birmingham (gr. Mr. W. Earp), exhibited some promising seedling Anthuriums.

W. H. Evans, Esq., Forde Abbey, Chard (gr. Mr. J. Crook), sent cut flowers of *Hippeastrum Prince of Orange*, seedling Primulas, and very fine spikes of *Euphorbia jacquiniæflora*.

W. Thompson, Esq., Walton Grange, Stone (gr. Mr. W. Stevens), exhibited some fine specimens of *Eucharis Stevensi*.

From F. W. Moore, Esq., Botanic Gardens, Glasnevin, came cut flowers of *Cyrtanthus flavescens*.

Mr. C. Holden, 61 Warwick Road, Ealing, exhibited a group of foliage and berries suitable for winter decoration.

From Messrs. Sutton & Sons, Reading, came three varieties of their new Moss-curved Primulas. The leaves were beautifully curled and crested like Parsley.

Messrs. J. Veitch & Sons, Chelsea, exhibited a very well-grown plant of *Dicksonia (Balantium) culcita*.

Mr. R. Owen, Castle Hill, Maidenhead, sent cut blooms of *Chrysanthemum Madame Fortamier*, to show its usefulness as a late-flowering variety. The Committee asked to see this again.

FLORAL COMMITTEE, FEBRUARY 13, 1894.

W. MARSHALL, Esq., in the Chair, and twenty-six members present.

Awards Recommended:—

Silver Gilt Flora Medal.

To Mr. John May, St. Margaret's, Twickenham, for an exceptionally fine display of *Cyclamen* grown in small pots. The plants bore large flowers of great substance, the colours ranging from pure white to the deepest crimson.

To Mr. C. F. Bause, Portland Road, South Norwood, for an extremely handsome group of graceful and highly coloured *Dracænas*. Amongst the most conspicuous varieties were Lord

Wolseley, Willsii, Bartetti, Alex. Laing, and Madame F. Bergman, the last named having broad leaves of a deep bronzy green with bright red margins.

To Messrs. W. Paul & Son, Waltham Cross, for a grand group of Camellias in pots. The plants were in fine condition, and carried an immense wealth of bloom. Specially noteworthy varieties were Princess Charlotte, white; Targioni; Fairy Queen, soft salmon; Countess of Derby; C. M. King, deep scarlet; and the Marchioness of Exeter. A collection of cut blooms arranged in boxes formed an edging to the group.

To Messrs. H. Cannell & Sons, Swanley, for a beautiful display of Primulas and Cyclamen. The former included splendid examples of Swanley Giant, White Perfection, Eynsford Blue, Her Majesty, and Duchess of Fife. The Cyclamen were remarkably well grown, carrying the flowers well above the foliage, one plant having no less than 106 blossoms.

To Messrs. Paul & Son, Cheshunt, for an extensive group of flowering and foliage plants. Amongst them were some well-flowered *Cœlogyne cristata*; Lilacs Marie Legraye, Madame Kreuter, and Madame Lemoine; *Saxifraga Boydii alba*, *Pulmonaria azurea*, *Erica herbacea carnea*, Hepaticas, and a new *Retinospora* named *leptoclada nana*—a very dwarf and compact-growing variety. Also *Skimmia japonica rubella* and *Veronica salicornoides*. The Committee asked to see the two last named again.

Silver Flora Medal.

To Mr. T. S. Ware (Francis Fell), Tottenham, for a group of hardy flowers, chiefly Narcissi, conspicuous examples being Golden Spur, Henry Irving, *obvallaris*, and *odorus minor*. Also *Saxifraga lutea purpurea*, *Veltheimia viridiflora*, *Iris reticulata purpurea* with very dark purple flowers, Hepaticas, and Crocuses in variety.

To Messrs. J. Laing & Sons, Forest Hill, for a group of plants, comprising Orchids, Cyclamen, *Acacia Drummondii*, Anthuriums, Codiaëums, Palms, Ferns, *Nicotiana colossea variegata*, and the new *Dracæna Sanderiana*, certificated in 1893.

To Mr. J. Odell, Hillingdon, for a group of well-grown Cyclamen.

To Messrs. J. Veitch & Sons, King's Road, Chelsea, for a

group of cut Narcissi, which contained good examples of Princeps, Golden Spur, obvallaris, Soleil d'Or, and Leedsii amabilis. Also Anemone fulgens, Hippeastrums, Daphne Genkwa (a pretty variety with lilac-coloured flowers), Prunus (Amygdalus) Davidiana, several very handsome cut blooms of the Javanico-Jasminiflorum section of Rhododendrons, and Begonia coccinea Lindleyana. The Committee asked to see the Begonia when in flower.

Bronze Banksian Medal.

To Mr. C. Turner, Slough, for a group of Cyclamen.

To Messrs. Barr & Son, Covent Garden, for a group of hardy flowers, containing several forms of Narcissi and Helleborus; also Cyclamen ibericum roseum (a pretty free-flowering variety), Iris histrioides, and a Chionodoxa provisionally named Alleni, on the supposition that it was distinct from C. Luciliæ.

First Class Certificate.

To Senecio grandiflora (S. Ghiesbreghti) (votes, 14 for, 4 against), from Sir Trevor Lawrence, Bart., Burford Lodge, Dorking (gr. Mr. Bain). A beautiful plant with large green leaves irregularly toothed. Flowers deep yellow, produced in a dense terminal head.

To Pavonia intermedia kermesina (votes, 15 for), from Sir Trevor Lawrence (gr. Mr. Bain). A rare stove plant with oblong serrated, bright green leaves, which measure about 8 inches in length. Flowers bright crimson.

To Camellia Exquisite (votes, unanimous), from Messrs. W. Paul & Son, Waltham Cross. Flowers of good size, petals imbricated; colour salmon-red, occasionally splashed with white.

To Prunus (Amygdalus) persica magnifica (votes, unanimous), from Messrs. J. Veitch & Sons, Chelsea. Flowers bright crimson. A beautiful doubled-flowered Peach, which will prove a great acquisition.

To Rhododendron multicolor Mrs. Heal (votes, unanimous), from Messrs. J. Veitch & Sons, Chelsea. A cross between multicolor and Princess Beatrice. Plant of very dwarf habit, with bright green oblanceolate leaves. The flowers, which are carried freely, are funnel-shaped; colour white with a delicate shade of pink. A handsome and useful variety.

Award of Merit.

To *Dracæna Princess May* (votes, 11 for, 4 against), from Messrs. B. S. Williams & Son, Upper Holloway. A distinct variety. Leaves about 20 inches long, narrow, bronzy green margined with bright red. A beautiful table plant.

To *Hippeastrum (Amaryllis) Major Wilson* (votes, unanimous), from Messrs. J. Veitch & Sons. The plant exhibited had one scape with several fully expanded flowers, each about 8 inches across; colour bright scarlet.

To *Dracæna Barroni* (votes, 11 for, 1 against), from Mr. Bause, South Norwood. A grand variety with broad leaves of a deep bronzy green with crimson margins. In a young state the leaves are bright red with a blotch of green in the centre.

To a strain of *Primulas* (votes, unanimous), from Messrs. Cannell & Sons, Swanley. Colours very varied, and of good form.

To a strain of *Cyclamen* (votes, unanimous), from Mr. J. May, Twickenham. Flowers unusually large, and exceptionally rich in colour.

Other Exhibits.

From the Director, Royal Gardens, Kew, came splendid examples of dried specimens of native plants and flowers from the neighbourhood of Capetown. The colours of the flowers and characters of the plants were remarkably well preserved. Those specially noticed were *Ixia maculata*, *Sparaxis tricolor*, *Babiana stricta*, *Tritonia lineata*, *Gladiolus villosus*, and *Homeria collina*.

From G. F. Wilson, Esq., Weybridge, came a plant of *Primrose Brighteye*, a seedling from Quakeress. Flowers purplish blue with a red ring round the yellow eye. Also cut flowers of a blue *Asphodel*, which had been grown in a cool greenhouse.

Sir William Eden, Bart., Windlestone, Ferry Hill (gr. Mr. Bethell), sent *Bougainvillæa fastuosa*. The Committee desired to see this again.

The Hon. P. C. Glyn, Rook's Nest, Godstone (gr. Mr. J. Friend), exhibited a very free-flowering *Clivia* named *Magnum Bonum*.

Miss A. Balmer, Clapper Knap, Portlock Weir, Taunton, sent a plant of a single *Violet Adriana*, laden with flowers, which had been grown in the open air without protection.

Lady Fortescue, Dropmore, Maidenhead (gr. Mr. C. Herrin), staged a group of cut foliage of hardy trees and shrubs suitable for winter decoration.

R. O. Backhouse, Esq., Sutton Court, Hereford, sent flowers of *Galanthus grandiflorus*.

F. W. Moore, Esq., Botanic Gardens, Glasnevin, sent cut blooms of *Rhododendrons*, *Acacias*, and *Hippeastrums*.

Mr. C. Turner, Royal Nurseries, Slough, staged a small group of *Primula A. F. Barron*, a useful free-flowering variety.

Messrs. J. Carter & Co., 237 High Holborn, submitted examples of *Primula Princess May*, flowers of a beautiful soft pink, and *Iris Hercules*, vivid very deep red.

Mr. W. Kemp, Upper Teddington, exhibited three dozen early-flowering *Hyacinths*.

From Mr. Owen, Maidenhead, came a collection of seedling *Primulas*, some of the colours being very pretty.

Mr. H. B. May, Upper Edmonton, exhibited *Selaginella inæqualifolia perelegans* and *Carnation Duke of York*.

FLORAL COMMITTEE, MARCH 13, 1894.

W. MARSHALL, Esq., in the Chair, and twenty-seven members present.

Awards Recommended:—

Silver Flora Medal.

To Messrs. J. James & Son, Woodside, Farnham Royal, for a remarkably well-grown group of *Cinerarias*. Plants of dwarf habit, with exceptionally clean and healthy foliage. Flowers large, of varied colour, and of great substance.

To Messrs. B. S. Williams & Sons, Upper Holloway, for a group of plants, amongst which were some good examples of *Lilac Marie Legraye*, *Clivias*, *Azaleas*, and *Japanese Camellias*.

To Mr. Anthony Waterer, Knap Hill, Woking, for an exceptionally fine display of *Pieris (Andromeda) japonica*. Plants of large size and in the finest condition. The racemes of bell-

shaped flowers were seen to advantage by reason of the healthy green leafage.

Silver Banksian Medal.

To the Duke of Northumberland, Syon House, Brentford (gr. Mr. Wythes), for a very pretty and tastefully arranged group of foliage and flowering plants, containing well-grown and highly coloured Crotons, Dracænas, and Pandanus Veitchii. Also a very fine plant in flower of *Datura cornucopia* (certificated in 1893), *Acacia longifolia* and *A. dealbata*, Clivias, Palms, and some sprays of *Bignonia venusta*.

To Messrs. J. Veitch & Sons, Chelsea, for an extensive group of well-grown Clivias, conspicuous varieties being *Distinction* and *President*. Also some superbly flowered plants of *Staphyllea colchica*.

To Messrs. Barr & Son, Covent Garden, for a group of hardy flowers, mostly forms of *Narcissi*. Also *Sisyrinchium grandiflorum album*, and *Iberis stylosa*, a small-growing plant with soft pink flowers; *Fritillaria aurea*, *Chionodoxas* in variety, a nice pan of *Megasea Stracheyi*, *Helleborus punctatus*, and the pretty *Iris sindjarensis*.

To Messrs. J. Peed & Sons, Roupell Park, Norwood Road, S.E., for a very fine group of *Caladiums*, noteworthy varieties being *Madame Rose Laing*; *Golden Queen*, a beautiful yellow variety; *Robert Brown*; and *Excellent*, leaves large, deep red veins and silver markings. Also a few well-coloured plants of the variegated *Ficus elastica* and *Dracænas*, beautifully arranged with Ferns, &c.

To Messrs. Cutbush & Sons, Highgate, N., for a group of plants, noteworthy amongst which were some well-flowered *Ericas* and *Epacris* in variety, *Boronia heterophylla*, and standard *Laurustinus*. Also some well-coloured plants of *Dracæna Lindenii*, *Aralias*, and small Palms.

Bronze Banksian Medal.

To Mr. Newport, Hillingdon Heath, Uxbridge, for a group of Stocks and Chinese Primulas.

First Class Certificate.

To *Loropetalum chinense* (votes, 13 for, 3 against), from Messrs. J. Veitch & Sons, Chelsea. A distinct, dwarf, and rare

Chinese shrub. The flowers are borne in clusters, and bear much resemblance to the Hamamelis. They are divided into four narrow petals of a creamy-white colour. Leaves small, ovate-elliptic, bright green (fig. 3).



Fig. 3.—*LOROPETALUM CHINENSE*. (*Journal of Horticulture*.)

To *Streptocarpus Wendlandi* (votes, unanimous), from Messrs. Sutton & Sons, Reading. Flowers carried on spikes 18 inches to 2 feet in height; colour light blue streaked with white. Leaves 20 inches across, of a deep green colour, covered with short hairs. A distinct and handsome plant.

Award of Merit.

To *Azalea albicans* (votes, unanimous), from the Duke of Northumberland, Albury Park, Guildford (gr. Mr. W. Leach). A hybrid between *A. occidentalis* and *A. mollis*. Flowers white, with yellow spots on the upper segments.

To *Vriesia Rex* (votes, 8 for, 6 against), from M. L. Duval, Versailles, France. A pleasing variety, with light green leaves. Flowers borne on a spike a foot high; colour yellow, surrounded by bright red bracts.

To *Clivia miniatum* Hillingdon variety (votes, unanimous), from Mr. W. Whiteley, Hillingdon Heath. A grand variety, carrying an immense number of large flowers; colour very deep orange, with a sulphur-yellow throat.

To *Rhododendron Niobe* (votes, unanimous), from Messrs. J. Veitch & Sons, Chelsea. The flowers are produced in clusters, and measure 2 inches across; colour sulphur-yellow, suffused with a darker shade. Leaves bright green in colour, and 6 inches in length. A valuable addition to the greenhouse section.

To *Rhododendron Ne Plus Ultra* (votes, unanimous), from Messrs. J. Veitch & Sons. A remarkably pretty and free-flowering variety. The flowers are bright red, and borne in clusters at the tips of the shoots. Leaves bright green, and leathery in texture.

To *Coleus Mrs. F. Sander* (votes, 13 for, 4 against), from Messrs. F. Sander & Co., St. Albans. A highly decorative variety; the central portion of the leaves is creamy white, splashed and streaked with red, and running into light green and red towards the margin.

Other Exhibits.

Sir Trevor Lawrence, Bart., Burford, Dorking (gr. Mr. Bain), sent *Calla Pride of the Congo*, a small yellow-flowered variety, and a pretty *Anthurium* named *Rothschildianum compactum*.

Lord Suffield, Gunton Park, Norwich (gr. Mr. Allan), exhibited some very fine blooms of *Aldborough Anemones*.

From G. F. Wilson, Esq., Weybridge, came a collection of *Primroses* in various shades of blue; also three seedling *Narcissi*.

The Duke of Northumberland, Albury Park, Guildford (gr. Mr. Leach), exhibited flowers of *Crinum amabile*.

W. Nicholson, Esq., Basing Park, Alton (gr. Mr. W. Smyth), submitted cut blooms of *Azalea Faja* and *A. Rink variegata*. The Committee asked to see a plant of the last named.

Sir W. Eden, Bart., Windlestone Hall, Ferry Hill (gr. Mr. J. Bethell), sent some pretty flowering shoots of *Bougainvillæa fastuosa*.

From F. R. Robinson, Esq., Blagdon House, Sneyd Park, Bristol (gr. Mr. Ambrose), came cut examples of perpetual-flowering *Carnation Blagdon Surprise*.

H. Balderson, Esq., Corner Hall, Hemel Hempstead, sent cut blooms of single *Primula Baldersoni*.

F. W. Moore, Esq., Botanic Gardens, Glasnevin, exhibited some very fine cut flowers of *Lachenalia Nelsoni* and *Rhododendron arboreum verum*.

From Mr. Lynch, Botanic Gardens, Cambridge, came flowers of *Tulipa Kaufmanniana*, a new and pretty variety.

M. L. Duval, Versailles, France, exhibited several very fine varieties of *Vriesias*.

Mrs. H. McDonald, Northgate, Chichester, sent small plants of seedling *Aucubas*.

Messrs. J. Veitch & Sons, Chelsea, exhibited a small group of interesting hardy shrubs and flowers, in which were *Azalea carminata splendens*, a dwarf free-flowering variety with bright red flowers; *Rhododendron racemosum*, a very dwarf variety with clusters of white flowers tinged with pink towards the edges of the petals; and very fine plants of *Shortia galacifolia*, having pretty bell-shaped white flowers.

Messrs. H. Cannell & Sons, Swanley, staged cut blooms of *Carnation Mrs. H. Cannell* and *Zonal Pelargonium New Life*.

Mr. J. H. Witty, Superintendent of Nunhead Cemetery, S.E., exhibited an arrangement of flowers suitable for table and other decorative purposes.

Messrs. De Graaff, Leyden, Holland, sent blooms of the pretty little *Scilla sibirica alba*.

Messrs. Hubert & Mager, Guernsey, sent some good bunches of *Anemones*.

Mr. H. Elliott, Stourvale, Christchurch, Hants. exhibited *Richardia æthiopica gigantea*, a strong-growing variety, and some good examples of *Freesias*.

Messrs. J. & J. Hayes, Lower Edmonton, sent two varieties of Chinese Primulas.

From Messrs. Sutton & Sons, Reading, came a very fine exhibit of the rare and curious *Ferraria antherosa*.

FLORAL COMMITTEE, MARCH 27, 1894.

W. MARSHALL, Esq., in the Chair, and eighteen members present.

Awards Recommended:—

Silver Gilt Flora Medal.

To the St. George's Nursery Company, Hanwell, for a most meritorious display of *Cyclamen* plants in grand condition, each carrying unusually large and finely developed flowers, the colours running from pure white to various shades of crimson.

Silver Flora Medal.

To Messrs. Barr & Son, Covent Garden, for a group of hardy flowers, amongst which were *Narcissus Horsfieldi*, *Sir Watkin*, *Leedsii*, *C. J. Backhouse*, and *pallidus præcox asturicus*. Also *Primula rosea*, *Chionodoxas*, *Muscari*, and *Anemones*.

Silver Banksian Medal.

To Messrs. Paul & Son, Cheshunt, for a large group of cut sprays of hardy flowering trees and shrubs. Amongst them were splendid examples of *Magnolia stellata plena*, a splendid variety with pure white flowers; *Cytisus* (*Genista*) *præcox*, its numerous slender shoots wreathed with beautiful sulphur flowers; *Prunus persica alba plena*, *Lilac Léon Simon*, and *Ribes sanguineum*. Also *Roses* and a collection of dwarf *Cannas*.

To Messrs. J. Laing & Sons, Forest Hill, for a group of *Clivias* tastefully arranged with *Palms*, *Ferns*, &c., noteworthy *Clivias* being *Duke of York*, *Princess May*, and *Mrs. Broome*. Also a fine plant of *Nicotiana affinis variegata*.

To Mr. R. Dean, Ranelagh Road, Ealing, for a very fine group of *Primroses* of choice variety. The plants carried large flowers of varied colours in great profusion.

First Class Certificate.

To *Beaumontia grandiflora superba* (votes, unanimous), from Earl Cowper, K.G., Panshanger, Hertford (gr. Mr. J. Fitt). A superb stove plant, producing an abundance of large white sweetly scented bell-shaped flowers.

To *Asparagus plumosus Sanderi* (votes, 13 for), from the St. George's Nursery Company, Hanwell,. A beautiful seedling of vigorous habit and graceful foliage.

To *Anthurium Scherzerianum atropurpureum* (votes, unanimous), from Messrs. J. Veitch & Sons. A splendid variety with bright green foliage and spathe of a deep crimson colour.

Award of Merit.

To *Primrose Elizabeth Brodia* (votes, unanimous), from G. F. Wilson, Esq., Weybridge. A pretty variety with rich plum-coloured flowers and a clear yellow eye.

To *Hippeastrum (Amaryllis) Novelty* (votes, unanimous), from Messrs. Paul & Son, Cheshunt. Flowers of medium size; colour bright rosy pink, with a broad white band down the centre of each segment.

To *Forsythia intermedia* (votes, 12 for), from Messrs. Paul & Son. A hardy early free-flowering shrub with rich golden-yellow flowers, which appear before the leaves.

To *Primrose Queen of Whites* (votes, 11 for), from Mr. R. Dean, Ealing. A grand variety with large flowers; colour creamy white, yellow eye.

To *Caladium Gaspard Crayer* (votes, 13 for), from Messrs. Veitch & Sons, Chelsea. A beautiful variety, with large bronzy-green leaves and blood-red veins.

To *Hippeastrum (Amaryllis) Olympia* (votes, 13 for, 3 against), from Messrs J. Veitch & Sons. A handsome variety, with large crimson-coloured flowers; very distinct.

Cultural Commendation.

To Messrs. W. Balchin & Sons, Hassocks, Sussex, for a number of exceptionally well-grown plants of *Tetralochea ericoides*.

Other Exhibits.

From the Director, Royal Gardens, Kew, came a magnificent collection of cut specimens of hardy flowering trees and shrubs,

including some rare and beautiful specimens of *Rhododendron varium* and *R. Nobleanum*; *Magnolia stellata*, *M. conspicua* and *M. Consoulangeana*; *Spiræa Thunbergi*, a slender-growing variety with small white flowers; *Prunus persica* fl. pl.; *Forsythia intermedia*; *Prunus dasycarpum*, a lovely free-flowering tree; *Camellia japonica*, *Erica carnea* and *E. codonoides*; *Medicago arborea*, *Dirca palustris* (rare), and *Lonicera Standishi*, with flowers sweetly scented.

Earl Cowper, Panshanger, Hertford (gr. Mr. Fitt), submitted a fine shoot of *Beaumontia grandiflora*, carrying several very large pure white flowers.

G. F. Wilson, Esq., Weybridge, staged an interesting group of Primroses and Polyanthuses.

Lord Suffield, Gunton Park, Norwich (gr. Mr. Allan), sent cut blooms of scarlet Anemones (Aldborough variety).

Dr. Masters, F.R.S., Ealing, exhibited long sprays of *Clematis balearica*.

E. Domaille, Esq., La Colombelle, Guernsey, sent examples of Tree Carnations La Villette and Dodo.

Messrs. J. Veitch & Sons, Chelsea, exhibited a small group of rare and exceptionally interesting hardy flowering shrubs, including a new *Rhododendron* named *Schlippenbachi*. It is a plant of great promise, with soft pink-coloured flowers, which measure $2\frac{1}{2}$ inches across the base of the upper petals, which are spotted with brown. The Committee asked to see it from the open ground. *Magnolia stellata*, *Andromeda speciosa cassinifolia*, bearing pretty bell-shaped white flowers, set off with soft green foliage, and *Corylopsis spicata* with an abundance of beautiful sweetly scented yellow flowers were also shown.

Messrs. B. S. Williams & Son, Upper Holloway, staged a very fine group of *Hippeastrums* (*Amaryllis*), containing some well-grown and superbly flowered plants of Emperor Frederick (a variety with large deep red flowers), Curiosity, Lady Donnington (flowers clear crimson), Empress of India, and Dr. Masters.

Messrs. Paul & Son, Cheshunt, submitted *Canna L. E. Bally*, which the Committee asked to see again. Also specimens of *Malus Parkiniana* fl. pl. The Committee also requested that this might be shown later in the season from the open ground.

FLORAL COMMITTEE, APRIL 10, 1894.

W. MARSHALL, Esq., in the Chair, and twenty-two members present.

Awards Recommended:—*Silver Gilt Flora Medal.*

To Messrs. Paul & Son, Cheshunt, for an exquisite group of Roses in pots, hardy trees and shrubs, &c. The Roses included splendid examples of Mrs. John Laing, Crimson Rambler, Lady H. Grosvenor, and Madame Hoste. The group was also rich in hardy flowering trees and shrubs, noteworthy being standard plants of *Cytisus* (*Genista*) *præcox*, beautifully flowered; *Pyrus Maulei* *superba*; *Prunus triloba*, with long shoots wreathed with pretty soft pink flowers; *Rhododendron Jackmani*; *Caragana jubata*, flowers white, flushed with rose; *Acer Reichenbachii*; *Spiræa prunifolia* fl. pl., an extremely free flowering pure white variety; *Cerasus Watereri*, heavily flowered; *Ribes*, and the pretty little *Berberis Thunbergi*. Amongst herbaceous plants were noted *Hepaticas*, *Arnebia echioides*, *Adonis vernalis*, and *Scilla nutans*. Also *Cannas* and *Hippeastrums* (*Amaryllis*).

To Mr. F. Cant, Braiswick, Colchester, for a magnificent display of cut Roses, the following varieties being exceptionally good, viz., *Rubens*, *Madame de Watteville*, *The Bride*, *Ethel Brownlow*, *Ernest Metz*, *Laurette Messimy*, and *Madame Cusin*.

Silver Flora Medal.

To Messrs. W. Cutbush & Sons, Highgate, N., for a group of plants consisting of very well-grown *Ericas*, *Epacris*, *Acacias*, *Staphyllea colchica*, some fine examples of *Calla Little Gem*, and cut blooms of *Carnation Uriah Pike*.

To Mr. W. Rumsey, Joynings, Waltham Cross, for an extensive group of Roses in pots. The plants had clean, healthy, vigorous foliage and finely finished flowers. Conspicuous varieties were *Duke of Wellington*, *Dr. Andry*, *General Jacquiminot*, *Alfred Colomb*, *Fisher Holmes*, and *Lady Mary Fitzwilliam*. Also several boxes of very fine cut blooms.

To Mr. T. S. Ware, Tottenham, for a group of hardy plants, consisting largely of *Narcissus Horsfieldi*, *Barri conspicuus*, *sulphureus plenus*, and *poeticus ornatus*. Also *Irises*, *Muscari botryoides alba*, *Anemones*, *Primula Sieboldi* *Zephir*, *Gladioli*, and very fine *Freesias*.

To Messrs. Barr & Son, Covent Garden, for a group of *Narcissi*, *Tulips*, *Irises*, *Tritelias*, *Muscari*, *Anemones*, &c.

Silver Banksian Medal.

To Messrs. Hugh Low & Co., Clapton, for a group of hard-wooded greenhouse plants, conspicuous amongst them being *Azaleas*, *Eriostemons*, *Boronia heterophylla*, *Chorozemas*, *Tremandras*, *Hibbertia Reidii*, *Ericas*, and *Polygalas*.

To Messrs. J. Veitch & Sons, Chelsea, for a group of hardy trees and shrubs, including *Cytisus Scoparius Andreanus* and *Cytisus purpureus pendulus*, worked as standards on *Laburnum* stocks about 7 feet high, and beautiful bushes of *Chionanthus virginicus* (*Fringe-tree*), carrying an immense number of clusters of pure white flowers. Also *Rhodora canadensis* and some fine examples of *Acer* (*Negundo*) *variegata*.

To Mr. R. Dean, Ranelagh Road, Ealing, for a group of seedling *Polyanthus*.

To Messrs. B. S. Williams & Son, Upper Holloway, N., for a group of *Clivias*, *Rhododendrons*, and *Hippeastrums* (*Amaryllis*).

To Mr. G. Mount, Canterbury, for a collection of cut *Roses*, containing very good blooms of *Catherine Mermet*, *The Bride*, *Ethel Brownlow*, *Niphetos*, and *Souvenir d'un Ami*.

Bronze Banksian Medal.

To Mr. B. Ladhams, Shirley, Southampton, for a very pretty group of hardy flowers, in which were superb examples of the new large-flowered *Pink Ernest Ladhams*, *Doronicums*, *Spiræa astilboides*, *Aubrietia Leichtlini*, *Fritillarias*, and *Alpine Auriculas*.

First Class Certificate.

To *Iris* (*Oncocyclus*) *Helenaë* (votes, 8 for), from H. J. Elwes, Esq., Colesborne, Andoversford. A magnificent variety, introduced from Syria. Standards broad, deep purple; falls maroon, with a darker base (fig. 4).



Fig. 4.—IRIS HELENE. (*Journal of Horticulture.*)

Award of Merit.

To Anemone St. Brigid's strain (votes, 15 for), from Earl Cowper, Panshanger, Hertford (gr. Mr. Fitt). A very fine strain, with large single and double flowers of good form and colour.

To *Hippeastrum (Amaryllis) speculum* (votes, 10 for, 4 against), from Messrs. J. Veitch & Sons. A splendid variety, with flowers of medium size; colour bright crimson, with a darker throat.

To *Atragene alpina* (votes 11 for, 2 against), from Messrs. T. Cripps & Son, Tunbridge Wells. An old-fashioned climbing garden plant, closely allied to Clematis. Flowers indigo-blue, beautifully set off by the soft green foliage.

To Rose Lawrence Allen, H.P. (votes, unanimous), from Messrs. G. Cooling & Sons, Bath. Flowers of large size and sweetly scented; colour delicate pink.

To *Hippeastrum (Amaryllis) Holloway Belle* (votes, 12 for, 1 against), from Messrs. B. S. Williams & Son, Upper Holloway. A grand variety. Flowers large, broad segments; colour scarlet, running into green towards the base of the tube, each segment having a prominent light band down the centre.

To *Canna L. E. Bally* (votes, unanimous), from Messrs. Paul & Son, Cheshunt. A pretty and distinct free-flowering variety with rich yellow flowers heavily spotted with scarlet.

Other Exhibits.

G. F. Wilson, Esq., Weybridge, staged a basket of yellow *Polyanthus*, or Bunch Primroses.

From J. D. Pearson, Esq., Chilwell House, Notts, came an interesting collection of drawings of *Narcissi*.

The Right Hon. J. Chamberlain, M.P., Birmingham, sent *Anthurium Chamberlaini*, a variety with very large leaves.

From the Duke of Marlborough, Blenheim, came cut examples of *Carnation Madame E. Bergman* and *Blenheim Beauty*.

H. J. Elwes, Esq., Colesborne, Andoversford, exhibited cut blooms of *Iris atropurpurea* and several good forms of *Fritillarias*.

W. H. Evans, Esq., Forde Abbey, Chard, staged a pan of *Primula obconica* named *Forde Abbey Beauty*, and a splendid example of *Rhododendron Veitchianum* improved.

A. C. Bartlemew, Esq., Park House, Reading, exhibited a large plant in flower of *Iris Robinsoniana*, a variety with white-flowers and yellow spots at the base of the segments.

C. J. Lucas, Esq., Warnham Court, Horsham, sent a plant of *Scilla* sp.

Captain A. Torrens, Baston Manor, Hayes, Kent, exhibited a plant in flower of *Wistaria sinensis purpurea*.

J. Mackrell, Esq., High Trees, Clapham Common, submitted cut blooms of a very fine unnamed yellow *Auricula*.

J. Bateman, Esq., Home House, Worthing, sent examples of *Rhododendron campylocarpum*, a distinct Sikkim species with sulphur-yellow flowers.

From Dr. T. Beaumont, Palmerston Park, Dublin, came cut examples of a winter-flowering seedling *Carnation* named *Eblana*. The Committee asked to see the plant.

F. W. Moore, Esq., Botanic Gardens, Glasnevin, sent cut flowers of *Brownea macrophylla grandiceps*, *Banksia marcescens*, and *Dryandra floribunda*.

Mr. Thomas Acton, Rathdrum, Ireland, exhibited cut *Rhododendrons*.

Messrs. Paul & Son, Cheshunt, submitted *Rose Paul's Early Blush*. The Committee asked to see this again.

From Messrs. Fisher, Son & Sibray, Sheffield, came *Rhododendron Handsworth Early White*, which had flowered in the open ground.

Mr. A. Waterer, Knap Hill, Woking, sent a plant of the golden *Cedrus atlantica*.

Messrs. J. Veitch & Sons, Chelsea, staged some fine *Hippeastrums* (*Amaryllis*) and *Epiphyllum Gartneri*.

Messrs. J. Laing & Sons, Forest Hill, sent a plant of the variegated *Nicotiana affinis*.

Mr. G. May, Upper Teddington, staged a group of plants and cut flowers of *Carnation Uriah Pike*.

Mr. W. Newport, Hillingdon Heath, Uxbridge, exhibited *Nicotiana alba variegata*.

From Messrs. R. Veitch & Sons, Exeter, came a group of cut sprays of hardy trees and shrubs, noteworthy examples being *Exochordia* (*Spiræa*) *grandiflora*, a beautiful plant bearing white flowers; *Spiræa arguta*, a graceful variety with small pure white flowers; *S. Thunbergi*; *Cytisus spinosus*, a deciduous shrub

bearing freely pretty yellow flowers; several forms of *Ribes*, *Sambucus canadensis filicifolia*, and *Ceanothus rigidus*.

FLORAL COMMITTEE, APRIL 24, 1894.

W. MARSHALL, Esq., in the Chair, and twenty-five members present, with W. C. Hackett, Esq. (Australian visitor).

Awards Recommended:—

Silver Gilt Flora Medal.

To Messrs. Paul & Son, Cheshunt, for a group of Roses, flowering trees and shrubs, &c. The Roses exhibited high culture, and included amongst many varieties noteworthy examples of *Madame Cusin*, *Souvenir d'un Ami*, *Etoile de Lyon*, *Madame de Watteville*, and *Margaret Dickson*. Amongst hardy trees and shrubs were beautiful sprays of *Spiræas*, *Lilacs*, *Genista purgans*, *Exochorda grandiflora*, *Corylus Avellana purpurea* (purple nut), *Philadelphus*, *Loniceras*, and a fine selection of dwarf *Cannas*. Also *Phloxes*, *Saxifrages*, *Gentiana acaulis*, and *Cheiranthus alpinus*.

Silver Floral Medal.

To J. C. Tasker, Esq., Middleton Hall, Brentwood (gr. Mr. Perry), for a very fine group of pot Roses, the plants large, with healthy foliage and fine large flowers of good form and colour. As varieties of exceptional merit may be noted *Merveille de Lyon*, *Ella Gordon*, and *Her Majesty*.

To Mr. W. Rumsey, Joynings, Waltham Cross, for a well-grown group of Roses, both standards and dwarfs in pots, the varieties *Baroness Rothschild*, *Mrs. John Laing*, and *Baron de Bonstettin* being particularly good. Several boxes of cut blooms of great excellence were also included.

To the Guildford Hardy Plant Company, Millmead, Guildford, for a large collection of Alpine plants arranged in a natural style with stones, &c., amongst which were capital examples of *Armeria*

cæspitosa, Saxifrages, Iberis jacunda, Androsace villosa and A. coronopifolia, Sedums, Lychnis alpina, and Trillium grandiflorum.

To Mr. C. Turner, Slough, for a group of choice greenhouse Azaleas and very fine varieties of Primula Sieboldi. Also pot Roses, including the new Crimson Rambler, laden with its beautiful clusters of deep red flowers.

To Messrs. W. Paul & Son, Waltham Cross, for a large group of Roses in pots and cut blooms, noteworthy varieties being Crown Prince, White Lady, Medea (new), Princess May, and Duchess of Albany.

To Mr. H. B. May, Dyson's Lane, Upper Edmonton, for a very handsome group of Ferns of a highly decorative character, including exceptionally well-grown examples of Adiantum Weigandi, A. Pacotti, Pteris nobilis variegata, P. Victoriæ, and P. tremula Smithiana.

To Messrs. Barr & Son, King Street, Covent Garden, for an interesting group of hardy flowers, including good forms of Narcissi, Irises, Fritillarias, Anemones, Tulips, Doronicums, and Muscari.

Silver Banksian Medal.

To Mr. J. Walker, High Street, Thame, for five boxes of cut Roses, four of Maréchal Niel and one of Niphetos, the blooms being very fine.

To Messrs. J. Laing & Sons, Forest Hill, for a very fine group of Gloxinias of good strain, tastefully arranged with Ferns, small Palms, and Isolepis gracilis.

To Mr. F. Cant, Braiswick, Colchester, for a collection of cut Roses in splendid condition, noteworthy varieties being Thomas Mills, Gloire Lyonnaise, Madame Cusin, and Catherine Mermet.

To T. S. Ware, Tottenham, for a group of hardy flowers, containing examples of dwarf Irises, Ranunculus amplexicaulis (a variety with pretty white flowers), Veronicas, Mertensia virginica, Saxifrages, and the beautiful Spiræa japonica multiflora compacta.

To Messrs. W. Cutbush & Son, Highgate, London, for a group of hardy standard and dwarf Azaleas of the Mollis and Ghent classes. The plants were covered with flowers in many shades of colour. A few choice herbaceous plants formed a pretty edging to the group.

To Messrs. Hugh Low & Co., Clapton, for a group of hard-wooded greenhouse plants, amongst which were some very well-grown plants of *Pimelias*, *Chorizemas*, *Ericas*, *Acacias*, *Boronia heterophylla*, and *Eriostemons*; also a number of finely flowered *Hydrangea hortensis*.

To Mr. G. Mount, Canterbury, for a collection of cut Roses, in which were good examples of *The Bride*, *Mrs. John Laing*, and *Fisher Holmes*.

Bronze Banksian Medal.

To S. F. Still, Esq., Wimbledon Park (gr. Mr. Curtis), for a small group of *Hippeastrums*, *Osmunda palustris*, *Spiræa astilboides*, and a very fine basket of *Polyanthus*.

To Messrs. J. Cheal & Sons, Lowfield, Crawley, for a group of cut sprays of hardy trees and shrubs, amongst which were *Magnolia Lennei*, *Cerasus*, *Elæagnus longipes*, *Pyrus floribunda*, *Kalmia glauca*, *Choysia ternata*, *Xanthoceras sorbifolia*, and *Acer polymorphum atropurpureum*.

First Class Certificate.

To *Thunbergia Harrisii* (votes, 13 for, 2 against), from Lady Theodora Guest, Inwood House, Henstridge, Blandford (gr. Mr. Wilkins). A handsome free-flowering stove climber, bearing racemes of pretty light blue flowers.

To *Alpinia nutans* (votes, 12 for, 3 against), from Lady Theodora Guest, Blandford (gr. Mr. Wilkins). A variety bearing long spikes of wax-like flowers of a rich orange-yellow suffused with pink and crimson. Leaves 2 feet 6 inches long, of a shining green.

To *Rhododendron Princess William of Wurtemberg* (votes, 10 for), from Messrs. J. Veitch & Sons, Chelsea. A handsome and very free-flowering variety. Flowers campanulate, spotted with bright red on a soft flesh-coloured ground.

To *Bougainvillæa glabra Sanderiana* (votes, unanimous), from Messrs. F. Sander & Co., St. Albans. A remarkably free-flowering variety, having flower-bracts of medium size, somewhat darker in colour than the type. The flower-bracts are produced in great profusion on quite young plants. A valuable addition to the genus.

To *Alocasia Watsoniana* (votes, unanimous), from Messrs. F. Sander & Co. A splendid variety with rich olive-green leaves and prominent veins of a glaucous hue. The leaves measured 18 inches in width and 2 feet 6 inches across.

To *Phlox canadensis* (votes, unanimous), from Messrs. Paul & Son, Cheshunt. A lovely old garden plant of dwarf habit, producing an abundance of pretty light slate-blue flowers.

Award of Merit.

To *Primrose Evelyn's Beacon* (votes, unanimous), from J. H. Arkwright, Esq., Hampton Court, Leominster. This pretty variety was found growing wild in Herefordshire in 1889. Flowers large; colour sulphur-yellow, darker eye.

To *Rhododendron rhombicum* (votes, 9 for, 4 against), from the Director, Royal Gardens, Kew. A beautiful hardy early-flowering deciduous *Azalea* from Japan, with rosy-lilac coloured flowers, borne freely.

To *Rhododendron Rosy Bell* (votes, 14 for), from the Director, Kew. A dwarf hardy variety of the ciliatum type, with pretty soft pink bell-shaped flowers, carried in clusters in great profusion.

To *Pyrus spectabilis magnifica* (votes, 13 for, 3 against), from Mr. A. Major, Ditton Farm, Langley. A beautiful and exceptionally free-flowering hardy shrub, carrying rosy-pink flowers of a darker shade than the type.

To *Canna Cheshunt Yellow* (votes, 13 for, 2 against), from Messrs. Paul & Son, Cheshunt. Flowers rich deep golden-yellow, lower segment orange-scarlet.

To *Exochordia Alberti* (votes, 19 for), from Messrs. Paul & Son, Cheshunt. A rare and pretty hardy flowering shrub, bearing short racemes of small white flowers.

To *Rhododendron High Beech Hybrid* (votes, 8 for, 1 against), from Messrs. Paul & Son, Cheshunt. A cross between *R. Fortunei* and *R. Mrs. C. Butler*. A sweet-scented hybrid, bearing in profusion flowers of a delicate salmon-pink colour.

To *Phyllocactus Romeo* (votes, 10 for, 4 against), from Messrs. J. Veitch & Sons, Chelsea. A distinct variety with large flowers, the outer petals bright scarlet, the inner having rosy-purple margins.

To *Hippeastrum* (*Amaryllis*) *Gem* (votes 13 for, 1 against), from Messrs. J. Veitch & Sons, Chelsea. Flowers of large size; colour orange-red with a greenish white ray down the centre of each segment.

To *Alyssum saxatile*, lemon variety (votes, unanimous), from Messrs. J. Veitch & Sons. A free-flowering hardy plant with pretty lemon-coloured flowers.

To *Adiantum tenellum* (votes, 10 for, 6 against), from Mr. H. B. May, Upper Edmonton. A very fine and graceful variety, the pinnæ deeply cut, of a bright green colour.

To *Adiantum Schneideri* (votes 13 for, 1 against), from Mr. H. B. May. A distinct and handsome variety of robust constitution, with wedge-shaped pinnæ; colour light green.

To *Gloxinia marginata* (votes, 8 for), from Messrs. J. Laing & Sons, Forest Hill. Flowers of medium size; colour rich crimson, edged white.

To *Azalea Julia Vervæne* (votes, 16 for, 1 against), from Mr. C. Turner, Slough. Plant of dwarf habit; flowers large, semi-double, colour pink spotted with crimson, margined white.

To *Azalea Lively* (votes, 13 for), from Mr. C. Turner, Slough. A grand semi-double variety with large flowers; colour soft pink, running to dark brown towards the margins.

To *Azalea M. Victor Savart* (votes, 16 for, 2 against), from Mr. C. Turner, Slough. A beautiful single variety with deep crimson-coloured flowers.

To *Azalea Perle de Ledeberg* (votes, unanimous), from Mr. C. Turner, Slough. A grand form; flowers of large size, white splashed and streaked with pale pink and scarlet.

Cultural Commendation.

To Mr. T. Wilkins, gr. to Lady Theodora Guest, Henstridge, for splendid examples of *Bauhinia purpurea*.

Other Exhibits.

The Director, Royal Gardens, Kew, sent a beautiful collection of sprays of hardy trees and shrubs, containing very fine examples of *Daphne cneorum* (a pretty dwarf variety with bright red flowers), *Amelanchier canadensis*, *Rhododendrons*, *Prunus*, *Cytisus*, *Pyrus*, *Viburnums*, *Arbutus procera*, and *Magnolias*.

G. F. Wilson, Esq., Weybridge, showed a small group of seedling *Auriculas* grown in the open air.

Captain Torrens, Baston Manor, Hayes, Kent, exhibited plants of the pretty little *Schizocodon soldanelloides*, which was certificated in 1893.

Baron Hruby, Peckau bei Koln, Bohemia, exhibited *Anthurium* Baron Hruby.

The Bishop of Reading, Langley (gr. Mr. T. Hastings), sent a plant of *Akebia quinata*.

From Lady H. Grosvenor, Bulwich Park, Wandsworth (gr. Mr. Dranfield), came cut specimens of *Syringa japonica*. A hardy free-flowering Japanese shrub with pretty creamy-white flowers.

Mr. R. White, Pentland House, Old Road, Lee, submitted a very fine plant with a large spathe of *Calla Pentlandi*.

Mr. J. T. Rogers, The Gardens, Raggleswood, Chislehurst, staged a pretty group of *Polyanthus*.

Mr. J. O'Brien, Harrow-on-the-Hill, sent *Cyrtanthus striatus*.

Messrs. H. Cannell & Sons, Swanley, showed *Fuchsia* Princess May, *Canna* Queen Charlotte (flowers rich crimson, margined and spotted with yellow), and a variegated form of *Adiantum cuneatum*.

From Messrs. Paul & Son, Cheshunt, came a pretty Elder named *Sambucus plumosa*. The Committee asked to see it again.

Messrs. Laxton Bros., Bedford, staged a large form of *Lily-of-the-Valley*.

From Messrs. J. Veitch & Sons, Chelsea, came several very fine *Hippeastrums* and *Phyllocaeti*; also Tree *Pæonies* and *Trocodendron aralioides*.

Messrs. Fisher, Son, & Sibray, Handsworth, Sheffield, sent *Mimulus albus variegatus*.

Messrs. B. S. Williams & Son, Upper Holloway, exhibited *Epiphyllums*, *Hippeastrums*, and *Rhododendrons*.

Mr. G. May, King's Road, Upper Teddington, sent a group of cut blooms of *Carnation* Uriah Pike. Plants of this grand *Carnation* were also staged by Mr. J. Pike, South Acton.

From Mr. W. Wells, Earlswood, Redhill, came cut blooms of a small green-flowered *Chrysanthemum* named *Ethel Amsden* a sport from *Vivian* Morel.

Mr. P. McArthur, 4 Maida Vale, W., sent *Datura Knightii*.

Mr. R. Dean, Ealing, exhibited a group of *Venidium calendulaceum*, a pretty annual with orange-yellow flowers; also *Polyanthus* and *Primula Sieboldi laciniata*.

Mr. J. Forbes, Hawick, sent a basket of *Polyanthus* in great variety.

FLORAL COMMITTEE, MAY 8, 1894.

GEORGE PAUL, Esq., in the Chair, and twenty-three members present.

Awards Recommended:—

Silver Gilt Flora Medal.

To Messrs. Sutton & Sons, Reading, for a splendid group of *Calceolarias*. Plants of dwarf habit, carrying immense heads of blooms of many shades of colour, from pale yellow to deep crimson and red. A superb strain.

To Messrs. Barr & Son, Covent Garden, for a beautiful collection of hardy flowers, amongst which were *Spiræas*, Tulips (very fine), *Centaureas*, *Iris germanica major*, *I. Tolaneana*, *Pyrethrums*, and *Doronicums*.

Silver Flora Medal.

To Messrs. J. Laing & Sons, Forest Hill, for an extensive group of tuberous-rooted single and double *Begonias*, beautifully arranged with Ferns, &c. Particularly good among the single-flowered varieties were Mr. George Hicks, with large bright scarlet flowers, and the Grand Duke of Hesse, flowers rich crimson; amongst the doubles W. Clifford (crimson-scarlet), Lady Dorrington, and Meteor.

To Messrs. J. Veitch & Sons, Chelsea, for a handsome display of hardy shrubs, including splendid examples of *Rhododendron Helen Schiffner*, with large pure white flowers borne in dense trusses; double Ghent *Azalea Leibnitz*, a rich variety with orange-yellow flowers tipped with brown; *Clethra alnifolia*, beautifully flowered; *Pæonia Reine Elizabeth*, flowers of large size, colour bright pink, very fine; large shoots of *Cercis siliquastrum*,

profusely flowered; *Veronica Hulkeana*, *Cytisus purpureus* flore albo, and *C. Scoparius Andreanus*, having long shoots wreathed with richly coloured flowers.

To Mr. T. S. Ware, Tottenham, for a very pretty group of hardy flowers, amongst which were large plants of *Spiræa multiflora compacta* in grand condition; *Polemonium Richardsoni*, a dwarf variety with handsome blue flowers; *Orchis undulata*, *Cypripedium pubescens*, the large-flowered *Iris Susiana*, *Liliums*, and the pretty scarlet-flowered *Silene virginica*.

Silver Banksian Medal.

To the Hon. W. W. Astor, Cliveden (gr. Mr. Wadds), for three plants of *Lilium Harrisii* in superb condition, and bearing large pure white flowers of great substance.

To Messrs. W. Paul & Son, Waltham Cross, for a group of new Roses in pots, noteworthy being *Clio*, *Duchess of Albany* (flowers of good form, colour salmon-red), *Duke of York*, and *Corinna*. Also two boxes of cut Lilacs in grand condition.

To Messrs. Cutbush & Son, Highgate, N., for a pretty group of plants and cut flowers, containing excellent examples of Tree Pæonies, *Sparaxis*, *Anemones*, *Phlox amœna*, *Saxifrages*, *Choysia ternata*, *Irises*, *Scillas*, and a very fine batch of *Carnation Uriah Pike*.

To Messrs. J. Cheal & Sons, Crawley, for a group of cut sprays of hardy trees and shrubs, containing beautiful examples of *Eurybia Gunni* (a handsome white-flowered variety), *Prunus Pissardii* (richly coloured), *Amelanchier ovalis*, *Acer Schwedleri*, *Cerasus*, *Cytisus*, *Purple-nuts (Filberts)*, &c.

To Messrs. T. Cripps & Son, Tunbridge Wells, for a small group of very well-flowered hardy *Azalea rustica* fl. pl. in variety, amongst which were *Phœbe Freyer* and *Murillo*, of exceptional merit.

To Messrs. W. Balchin & Sons, Hassocks, Sussex, for a group of remarkably well-flowered *Leschenaultia biloba major* and *Boronia serrulata*.

First Class Certificate.

To *Lilac Madame Lemoine* (votes, unanimous), from Sir Trevor Lawrence, Bart., Dorking, and Messrs. W. Paul & Son.

A beautiful free-flowering variety, carrying large double white flowers. Very handsome.

To Lilac Souvenir de Louis Spath (votes, unanimous), from Messrs. W. Paul & Son, and Mr. A. Waterer, Woking. A magnificent variety, bearing remarkably fine trusses of beautiful dark purple flowers.

Award of Merit.

To Lilac Pyramidale (votes, unanimous), from Sir Trevor Lawrence, Bart. Flowers semi-double, borne in dense trusses; colour pale lilac.

To Aquilegia Stuarti (votes, 8 for, 1 against), from Sir Trevor Lawrence, Bart. A distinct variety, with large handsome flowers; the sepals deep blue, petals white, with blue at the base.

To Alstroemeria pelegrina alba (votes, unanimous), from Sir Trevor Lawrence, Bart. A beautiful form, with creamy-white flowers, the upper petals spotted with greenish yellow.

To Pieris formosa (votes, 13 for), from F. W. Moore, Esq., Botanic Gardens, Glasnevin. A beautiful and very rare shrub, bearing racemes of bell-shaped pure white flowers in abundance. Leaves bright green, serrated, and leathery in texture.

To Crinum capense (votes, 10 for, 4 against), from F. W. Moore, Esq. An old-fashioned bulbous plant, quite hardy, though often grown under glass.

To Lilac Géant des Batailles (votes, 10 for, 8 against), from Messrs. Paul & Son. A variety carrying trusses of medium size; flowers rosy pink.

To Tea Rose Medea (votes, unanimous), from Messrs. W. Paul & Son. A rich variety, with well-formed flowers of medium size; colour pale yellow, deepening to golden yellow towards the centre.

To Gloxinera Brilliant (*Gesnera pyramidalis* ♀ × *Gloxinia Radiance* ♂) (votes, unanimous), from Messrs. J. Veitch & Sons. A pretty bigeneric hybrid of compact growth, with broad green Gloxinia-like leaves and prominent veins. Flowers borne freely, tubular in shape, of a bright crimson colour. Very handsome.

To Fuchsia Princess May (votes, unanimous), from Messrs. H.

Cannell & Sons, Swanley. A free-flowering variety, with a bright pink corolla; sepals white, shaded delicate salmon.

To *Dracæna De Smetiana* (votes, 11 for, 1 against), from Messrs. B. S. Williams & Son, Upper Holloway. A very fine decorative plant, with broad leaves which measure 20 inches in length; colour light green striped with pink. The foliage in a young state is creamy white with pale salmon-red.

To *Rhododendron Purity* (votes, 6 for, 4 against), from Messrs. B. S. Williams & Son. A greenhouse variety, with large pure white single flowers.

To *Begonia Lord Milton* (votes, 9 for, 4 against), from Messrs. J. Laing & Sons. A very fine double tuberous-rooted variety, with salmon-red flowers.

To *Pelargonium Mrs. W. Wright* (votes, 10 for, 2 against), from Mr. H. J. Jones, Lewisham. A handsome variety, with large soft pink flowers margined white, the upper petals blotched with dark red at the base.

Other Exhibits.

Sir Trevor Lawrence, Bart., Burford, Dorking (gr. Mr. Bain), sent excellent examples of *Anthurium burfordense*, with a brilliant crimson-coloured spathe; also several very fine Lilacs.

From the Duke of Northumberland, Albury Park, Guildford (gr. Mr. Leach), came cut Lilacs and *Cercis siliquastrum* (Judas tree).

J. Bateman, Esq., Home House, Worthing, sent a very fine truss of *Rhododendron Fortunei*.

F. W. Moore, Esq., Glasnevin, sent cut examples of *Hibiscus Hugeli* and *Portlandia grandiflora*.

From Colonel Halford Thompson, Eastcliff, Teignmouth, came a variety of plants growing in Jadoo fibre, amongst others Fuchsias, Petunias, Chrysanthemums, and Begonias.

J. H. Arkwright, Esq., Hampton Court, Leominster, sent a white-flowered Carnation.

G. F. Wilson, Esq., Weybridge, exhibited *Rhododendron Mandeo* and two varieties of *Iris iberica*.

De Barri Crawshay, Esq., Rosefield, Sevenoaks, sent *Scilla nutans bracteata*.

F. R. Robinson, Esq., Blagdon House, Sneyd Park, Bristol (gr. Mr. A. Ambrose), sent a good white Tree Carnation named Blagdon Surprise.

Mr. J. O'Brien, Harrow-on-the-Hill, showed *Cyrtanthus Tuckii*.

Mr. G. May, Teddington, sent a group of Carnations.

Mr. H. J. Jones, Lewisham, sent a group of Pelargoniums.

TEMPLE SHOW.

FLORAL COMMITTEE, MAY 23, 1894.

W. MARSHALL, Esq., in the Chair, and nineteen members present.

Awards Recommended:—

First Class Certificate.

To *Datura chlorantha* (votes, unanimous), from J. T. Bennett-Poë, Esq., 29 Ashley Place, S.W. Plant of dwarf habit, with large bright green ovate leaves and clear canary-yellow trumpet-shaped flowers.

To *Alstrœmeria pelegrina alba* (votes 11 for, 2 against), from J. T. Bennett-Poë, Esq. (for description see page lxiv.).

To *Begonia platanæfolia decora* (votes, unanimous), from MM. Linden, Brussels. A distinct variety, with deeply lobed leaves of a glaucous grey hue on a green ground with prominent green veins.

To *Adiantum Clæsiænum* (votes, unanimous), from MM. Linden, Brussels. A very pretty new dwarf variety with light green fronds, the centre of the pinnæ glaucous, with streaks of grey radiating to the margins.

To *Cyathea pygmæa* (votes, unanimous), from MM. Linden. A Tree Fern with a slender stem, and rich green fronds, deeply cut.

To *Alsophilla Marshalliana* (votes, unanimous), from MM. Linden. A graceful Tree Fern of dwarf habit, with long leathery fronds, deeply cut, of a light green colour.

To *Miconia vesicaria* (votes, 4 for, 2 against), from MM. Linden. A distinct and interesting new plant, with long ovate-lanceolate leaves, slightly serrated, deep green in colour, with prominent veins.

To *Hemitelia Lindenii* (votes, unanimous), from MM. Linden. A small-growing Tree Fern with medium-sized fronds. The pinnae broad, and of a light green colour.

To *Cyathea Mastersiana* (votes, unanimous), from MM. Linden. Another beautiful slender-growing Tree Fern, with large spreading fronds of a light green colour.

To *Maranta Massangeana florentina* (votes, 8 for, 5 against), from MM. Linden. A grand form of dwarf habit, with broad olive-green leaves, midrib and veins of a lighter shade.

To *Maranta Massangeana metallica* (votes, 6 for), from MM. Linden. A handsome variety with broad leaves and conspicuous silvery ribs; the central portion light green, running to a broad bronzy-green band towards the margins.

To *Maranta Massangeana atrata* (votes, 8 for), from MM. Linden. A variety with beautiful velvety green foliage, light green midrib and veins.

To *Magnolia parviflora* (votes, unanimous), from Messrs. J. Veitch & Sons. A very pretty variety of dwarf habit, with white flowers and clusters of bright red stamens.

To *Polypodium Schneideri* (votes, unanimous), from Messrs. J. Veitch & Sons. A handsome variety, with large graceful fronds and much-divided pinnules of a very rich green colour. A valuable decorative plant.

To *Heliconia illustris rubricaulis* (votes, unanimous), from Messrs. F. Sander & Co., St. Albans. A beautiful plant with large rich green Canna-like leaves, with midrib, veinlets, and petiole of a bright red colour.

To *Asplenium incisum* (votes, 7 for, 3 against), from Mr. H. B. May, Edmonton. A very graceful and dwarf variety, with deeply cut fronds of a deep green colour.

To *Asplenium Mayii* (votes, unanimous), from Mr. H. B. May. A magnificent plant with graceful arching fronds. The pinnae deeply cut, and of a bright green colour.

Award of Merit.

To *Wistaria multijuga* (votes, 11 for), from the Hon. W. F. D.

Smith, Henley-on-Thames (gr. Mr. Perkins). A rare variety, bearing racemes 2 feet 6 inches in length. Flowers of a pretty shade of lilac and blue.

To Tea Rose Eugénie Verdier (votes, unanimous), from J. T. Bennett-Poë, Esq. Flowers of large size and good form; colour sulphur-yellow.

To Caladium Baronne Clara de Hirsch (votes, 8 for), from Messrs. J. Veitch & Sons. A very pretty dwarf variety, creamy-white ground, shaded with green towards the margins; the midrib and veins rosy crimson.

To Phyllocactus Orion (votes, 11 for), from Messrs. J. Veitch & Sons. Flowers large bright scarlet, the inner petals margined with rosy purple.

To Phyllocactus Jessica (votes, unanimous), from Messrs. J. Veitch & Sons. Flowers of medium size; colour soft pink.

To Phyllocactus Cooperi (votes, 13 for), from Messrs. J. Veitch & Sons. Flowers large, pure white in colour, the outer petals greenish white.

To Scolopendrium vulgare scalariforme (votes, unanimous), from Messrs. J. Veitch & Sons. A dwarf variety with fronds five to six inches in length, crimped and cut at the margins.

To Begonia Marchioness of Salisbury (votes, 6 for, 3 against), from Messrs. J. Laing & Sons. A fine double variety, with large canary-yellow flowers.

To Begonia Lady Theodora Guest (votes, 9 for), from Messrs. J. Laing & Sons. A double form with medium-sized flowers; colour creamy white, suffused with salmon-pink.

To Begonia Sunlight (votes, 9 for), from Messrs. J. Laing & Sons. A very large single-flowered variety, with a white centre, and rosy pink towards the margins.

To Hymenophyllum chilcense (votes, 11 for), from Messrs. W. & J. Birkenhead, Sale. An extremely pretty and distinct Filmy Fern, growing only a few inches high, of a light green colour.

To Athyrium f. f. Frizeliæ coronare (votes, 8 for), from Messrs. W. & J. Birkenhead. A pretty variety of dwarf habit, beautifully crested at the ends of the fronds; colour light green.

To Pteris cretica sempervirens (votes, unanimous), from Messrs. W. & J. Birkenhead. A magnificent variety of bushy habit, with dark green fronds, beautifully crested.

To *Rhododendron Duke of York* (*R. Fortunei* × *R. Scipio*) (votes, unanimous), from Messrs. Paul & Son. A very free-blooming variety, carrying large trusses of bright rosy-pink flowers, with large brown spots on the upper petals.

To *Rhododendron Duchess of York* (*R. Fortunei* × *R. Scipio*) (votes, 7 for, 3 against), from Messrs. Paul & Son. A pleasing variety, with soft salmon-pink flowers, margins flushed with rosy pink, the upper petals spotted green.

To *Begonia platanæfolia illustris* (votes, unanimous), from MM. Linden, Brussels. Leaves pale green, deeply lobed, spotted and streaked with grey, and prominent reddish veins.

To *Coleus Empress of India* (votes, 13 for), from Messrs. F. Sander & Co., St. Albans. A very handsome dwarf variety, with broad leaves, deep crimson and green, flushed with purple in the centre.

To *Sonerila H. Walter* (votes, 4 for, 2 against), from Messrs. F. Sander & Co. A pretty and distinct variety, with small leaves, the central portion being of a light grey, running to deep green towards the margins, with numerous white spots.

To *Asplenium Drueryi* (votes, 8 for, 1 against), from Mr. H. B. May. Plant of dwarf habit; fronds leathery and deeply cut, shining green.

To *Caladium Assunguy* (votes, unanimous), from Messrs. J. Peed & Sons. A pretty and distinct variety, with cordate leaves; ground bright red, with broad green midrib and veins.

To *Rhododendron Snowflake* (votes, 6 for), from Mr. C. Turner. A free-blooming variety, with large bell-shaped flowers of a clear white, with brownish-yellow spots on the upper petals.

To *Pelargonium Imogene* (votes, 7 for, 1 against), from Mr. C. Turner. A grand free-flowering variety, with blush-coloured flowers, blotched with purple on each petal.

Other Exhibits.

Col. Archer Houblon, Welford Park, Newbury, sent a seedling Cactus.

From Messrs. Wallace & Co., Colchester, came a very interesting group of *Calochorti*, *Anemones*, &c.

Mr. F. Perkins, Regent Street, Leamington, sent *Pelargonium Queen of Summer*. The Committee asked to see this again.

Messrs. Kelway & Sons, Langport, sent splendid examples of double *Pyrethrum King Oscar*, which the Committee asked to see again.

Messrs. W. & J. Birkenhead, Sale, exhibited *Athyrium f. f. setigerum corymbiferum*. The Committee also asked to see this again.

Special Awards:—

Gold Medal.

To Messrs. J. Veitch & Sons, Chelsea, for a group of hardy ornamental shrubs, &c.

To Messrs. F. Sander & Co., St. Albans, for a group of new and rare plants.

Silver Cup.

To Messrs. J. Laing & Sons, Forest Hill, for Begonias.

To Messrs. R. Smith & Co., Worcester, for specimen Clematis.

To Messrs. Paul & Son, Cheshunt, for Roses.

To Messrs. Linden, Brussels, for Tree Ferns, &c.

To Messrs. Cannell & Sons, Swanley, for ornamental plants.

To Messrs. J. Carter & Co., High Holborn, for Gloxinias, Petunias, Calceolarias, &c.

To Messrs. J. Backhouse & Son, York, for hardy herbaceous and Alpine plants.

To Mr. T. S. Ware, Tottenham, for hardy flowers and Begonias.

Silver Gilt Flora Medal.

To Messrs. W. & J. Birkenhead, Sale, Manchester, for British, Exotic, and Filmy Ferns.

To Messrs. J. Veitch & Sons, Chelsea, for Exotic Ferns.

To Mr. H. B. May, Edmonton, for Exotic Ferns.

To Messrs. W. Paul & Son, Waltham Cross, for Roses.

To Mr. H. O. Garford, Stoke Newington Station, for table decorations.

To Messrs. Barr & Son, Covent Garden, for cut herbaceous flowers.

To Messrs. E. D. Shuttleworth & Co., Peckham Rye, for miscellaneous plants.

To Messrs. J. Veitch & Sons, Chelsea, for *Streptocarpus* and *Hippeastrums*.

To Messrs. J. Peed & Sons, Roupell Park, Norwood, for *Caladiums*.

To Messrs. J. Laing & Sons, Forest Hill, for *Caladiums*, &c.

To Messrs. W. Cutbush & Sons, Highgate, N., for ornamental plants.

To Messrs. J. Veitch & Sons, for *Caladiums*.

To Mr. C. Turner, Slough, for *Roses*.

Silver Flora Medal.

To Miss Mayhew, South Norwood Hill, for table decorations.

To Messrs. H. Cannell & Sons, for *Begonias*.

To Mr. H. J. Jones, Lewisham, for *Pelargoniums*.

To Mr. J. Prewett, Hammersmith, for table decorations.

To Messrs. J. Carter & Co., for cut herbaceous flowers.

To Messrs. Kelway & Sons, Langport, for cut herbaceous flowers.

To Messrs. W. Paul & Son, Waltham Cross, for miscellaneous plants.

To Messrs. Balchin & Sons, Hassocks, Sussex, for *Leschenaultia biloba major*, &c.

To Messrs. Paul & Son, Cheshunt, for miscellaneous plants.

To Mr. H. B. May, Edmonton, for decorative plants, &c.

To Messrs. Hugh Low & Co., Enfield, for greenhouse plants.

Silver Gilt Banksian Medal.

To Messrs. G. Jackman & Son, Woking, for *Azaleas*.

To Mr. J. R. Box, Croydon, for *Begonias*.

To Messrs. J. James & Son, Farnham Royal, for *Calceolarias*.

To Mr. J. Pike, South Acton, for *Carnation Uriah Pike*.

To Mr. G. May, Upper Teddington, for *Carnation Uriah Pike*.

To Messrs. H. Cannell & Sons, for *Gloxinias*.

To Messrs. Paul & Son, for hardy herbaceous flowers.

To Mr. C. Turner, for *Pelargoniums*.

To Mr. W. Rumsey, for *Roses*.

To Messrs. J. Peed & Sons, for foliage plants, &c.

Silver Banksian Medal.

To G. Farini, Esq., Perry Vale, Forest Hill, for Begonias.

To J. T. Bennett-Poë, Esq., 29 Ashley Place, S.W., for Alstrœmerias and Daturas.

To H. C. Mayhew, Esq., South Norwood Hill, for Caladiums.

To the Guildford Hardy Plant Nursery, Guildford, for hardy herbaceous plants.

To Messrs. G. Jackman & Son, for Roses.

To Mr. J. R. Chard, Stoke Newington, for table decorations.

To Messrs. A. Scrivener & Co., Watford, for table decorations.

To Mr. B. Ladhams, Shirley, Southampton, for cut herbaceous flowers.

To Messrs. J. Veitch & Sons, for miscellaneous plants.

To Messrs. J. Cheal & Sons, Crawley, for hardy flowers, &c.

To Messrs. W. Cutbush & Sons, for miscellaneous plants.

To Mr. Prichard, Christchurch, for hardy flowers.

To Messrs. Lane & Son, Berkhamstead, for Azaleas.

FLORAL COMMITTEE, JUNE 12, 1894.

W. MARSHALL, Esq., in the Chair, and twenty-seven members present.

Awards Recommended:—

Silver Gilt Flora Medal.

To Messrs. Kelway & Sons, Langport, for a very fine group of cut Pæonies, Cannas, Pyrethrums, Delphiniums, and Amaryllis, all in grand condition and immense variety.

To Messrs. H. Cannell & Sons, Swanley, for an extensive group of well-flowered Tuberous Begonias, including single and double varieties; also cut Cannas and a very choice selection of seedling Gloxinias.

Silver Flora Medal.

To Mr. H. B. May, Dyson's Lane, Edmonton, for a small but interesting group of Ferns, noteworthy being well-grown examples of *Adiantum farleyense*, *A. dolabriforme*, *Asplenium*

nobile (with prettily cut fronds of a light green colour), *Nephrolepis exalta*, and *Selaginella Emiliana*.

To Mr. A. Waterer, Knap Hill, Woking, for a superb collection of new seedling *Rhododendrons*, the flowers being of fine form and substance, and in many shades of colour.

Silver Banksian Medal.

To Martin R. Smith, Esq., The Warren, Hayes, Kent (gr. Mr. Blick), for a very fine display of seedling *Malmaison Carnations*—plants of sturdy habit, and very large flowers of great substance. Particularly noticeable were the varieties named *Princess May*, *Mrs. E. Hambro*, and *The Churchwarden*.

To J. T. Bennett-Poë, Esq., 29 Ashley Place, S.W., for a very fine group of plants, including a remarkably well-flowered plant of *Carpenteria californica*; also *Diplacus glutinosus coccineus*, *Datura cornigera*, *Cistus*, *Alstroemerias*, and a splendid example of *Impatiens Hawkerii*.

To W. Graham Vivian, Esq., Clyne Castle, Swansea (gr. Mr. T. Foote), for a very interesting display of cut flowering shrubs, including beautiful examples of the rare *Embothrium coccineum*, cut from trees 24 feet high; also *Fabiana imbricata*, *Indian Azaleas*, *Colletias*, and *Rhododendrons*.

To Mr. T. S. Ware, Tottenham, for a beautiful group of hardy herbaceous cut flowers, amongst them being fine examples of *Iris*s, *Aquilegias*, *Liliums*, *Sparaxis*, *Cerastium major* (a pretty white-flowered variety), *Pentstemons*, &c.

To Mr. H. J. Jones, Lewisham, for a large group of well-grown *Pelargoniums* of the *Decorative* and *Fancy* sections. The plants were of dwarf habit, with exceptionally rich green foliage and finely formed flowers, conspicuous varieties being *Rose Queen*, *Sir Trevor Lawrence*, and *Countess*.

To Messrs. Paul & Son, Cheshunt, for a group of hardy flowers, comprising *Saxifrages*, *Clematis integrifolia*, *Pinks*, *Iris*s, *Pyrethrums*, and *Genista sagittalis*.

To Mr. G. Prince, Oxford, for a small group of cut *Roses*, including *Maréchal Niel*, *Cleopatra*, *Princess of Wales*, and *Clara Watson*.

To Messrs. Barr & Son, Covent Garden, for a pretty group of hardy flowers, amongst which were *Pæonies*, *Iris*s (very

fine), *Lychnis viscaria* fl. pl., Pinks, Pyrethrums (single and double), Veronicas, and the pretty-flowered *Achillea mongolica*.

To Messrs. W. Paul & Son, Waltham Cross, for a collection of cut sprays of hardy trees and shrubs, containing beautiful examples of the golden *Castanea*, *Clematis Jackmanii*, *Viburnum plicatum* (very fine), Acers, Rhododendrons, Cornus, and single Roses.

Bronze Flora Medal.

To Mr. W. Whiteley, Hillingdon Heath, Uxbridge, for a group of Carnation *Germania*, plants of dwarf habit with large flowers; also a basket of the beautiful foliage plant *Strobilanthes Dyerianus*.

To Mr. B. Ladhams, Southampton, for a group of hardy cut flowers, containing superb examples of *Hesperis matronalis alba plena*, *Aquilegias*, *Campanulas*, *Irises*, *Delphiniums*, and *Pyrethrums*.

Bronze Banksian Medal.

To Messrs. J. Cheal & Sons, Crawley, for a small group of *Pyrethrums* (single and double), *Irises*, *Cerastiums*, and *Delphiniums*; also sprays of Purple Beech, *Prunus Pissardii*, &c.

First Class Certificate.

To *Arisæma fimbriata* (votes, unanimous), from Sir Trevor Lawrence, Bart., Dorking (gr. Mr. Bain). A distinct stove Aroid, producing a long spathe of a deep purple colour striped with greenish white. The purple spadix is long and drooping, with numerous fine hairs.

To *Sarracenia Willisii* (*S. Courtii* ♀ × *S. melanorhoda* ♂) (votes, unanimous), from Messrs. J. Veitch & Sons, Chelsea. A very handsome variety of dwarf habit, with broad green pitchers veined with red.

To *Pteris ludens* (votes, unanimous), from Messrs. J. Veitch & Sons. A dwarf-growing Fern, with very broad three- to five-lobed fronds, thick in texture and of a shining green colour.

To *Osmunda javanica* (votes, unanimous), from Messrs. J. Veitch & Sons. A pretty and distinct Fern, with deeply cut pinnæ of a bright green colour. Very handsome.

To *Lygodium dichotomum pelydactylon* (votes, unanimous),

from Mr. H. B. May, Edmonton. A pretty climbing Fern, with bright green deeply cut fronds.

To *Fagus rotundifolia* (votes, 5 for), from Messrs. G. Jackman & Son, Woking. A sport from the common Beech, of upright habit and small roundish bright green leaves.

Award of Merit.

To Carnation Mrs. E. Hambro (votes, 26 for, 1 against), from Martin R. Smith, Esq., Hayes, Kent (gr. Mr. Blick). A beautiful seedling of the Malmaison section, with large sweetly scented bright red flowers. It is a free-bloomer and of compact habit.

To Sycamore Dr. Hogg's Crimson-fruited (votes, 13 for), from Dr. Hogg, Beechlands, Sussex. A variety similar to the type, but differing by reason of its bright crimson fruits.

To Carnation Duchess of Devonshire (votes, 13 for), from Mr. G. Fry, Lewisham. Flowers well formed and very fragrant, of a delicate blush shade.

To Carnation Primrose Day (votes, 16 for), from Mr. H. B. May, Edmonton. Plant of dwarf habit, with clear canary-yellow flowers.

To Carnation Duke of York (votes, 9 for, 8 against), from Mr. H. B. May. A fine variety, with large deep crimson flowers.

To Carnation Duchess of Fife (votes, 13 for), from Mr. T. S. Ware, Tottenham. Flowers of medium size, of a pretty delicate pink.

To *Browallia speciosa major* (votes, 14 for), from Messrs. F. Sander & Co., St. Albans. A pretty stove annual of dwarf habit and small deep purplish-blue flowers.

To *Pelargonium Duke of Fife* (votes, 5 for, 1 against), from Mr. H. J. Jones, Lewisham. A free-blooming variety with medium-sized flowers; colour white and bright rosy pink, beautifully frilled.

To *Iris variegata Prince of Orange* (votes, 15 for), from Messrs. Barr & Son. A variety with rich bronzy-yellow standards, falls brown suffused with yellow.

To *Gloxinia Ladas* (votes, 8 for, 6 against), from Messrs. H. Cannell & Sons, Swanley. A pretty variety; flowers bright red freckled with white, and clear white margins.

To *Begonia Nurse Mary Cornell* (votes, 8 for), from Messrs.

H. Cannell & Sons. Flowers large and double, of a bright salmon-red.

To Begonia Miss Falconer (votes, 6 for), from Messrs. H. Cannell & Sons. Flowers double, of medium size; colour deep golden yellow.

To Begonia Rev. T. G. Little (votes, 5 for), from Messrs. H. Cannell & Sons. A free-blooming variety, with deep crimson-scarlet double flowers.

To Begonia Miss Thompson (votes, 8 for), from Messrs. H. Cannell & Sons. A pretty double-flowered variety, with bright pink flowers.

To single Begonia Colossus (votes, 6 for), from Messrs. H. Cannell & Sons. Flowers seven inches across, petals thick and leathery, of a bright orange-salmon colour.

To Delphinium Alfred Henderson (votes, unanimous), from Messrs. Kelway & Sons. A variety carrying magnificent spikes of large flowers; colour deep blue with a white centre.

To Pyrethrum Alfred Henderson (votes, 4 for, 3 against), from Messrs. Kelway & Sons. A double form, with crimson-coloured flowers.

To Pæony Mr. Manning (votes, 7 for), from Messrs. Kelway & Sons. Flowers double, deep crimson-red.

To Begonia Duchess of Northumberland (votes, 9 for), from Messrs. J. Laing & Sons, Forest Hill. Flowers large and of fine form, of a soft salmon-pink shade; very handsome.

To double Begonia Earl of Craven (votes, unanimous), from Messrs. J. Laing & Sons. A variety with large flowers; colour bright scarlet.

To Begonia Rosette (votes, 9 for), from Messrs. J. Laing & Sons. A double variety, with pretty carmine-rose coloured flowers.

Cultural Commendation.

To F. Baden-Fuller, Esq., Barrowgate Road, Chiswick, for a well-flowered plant of *Phyllocactus* sp.

Other Exhibits.

A. Spurling, Esq., Heath Villa, Blackheath Park, sent cut examples of a good yellow Carnation named Ladas. The Committee asked to see a plant.

The Director, Royal Gardens, Kew, contributed a very inter-

esting group of cut sprays of hardy trees and shrubs, containing Rhododendrons, Spiræas, Roses, Cytisus, Ericas, Ledums, &c.

E. J. Lowe, Esq., Shirenewton Hall, Chepstow, sent a number of *Centaurea* hybrids. The varieties named Phœbus and O'Kika the Committee asked to see again.

Mr. C. Ross, Welford Park Gardens, Newbury, exhibited very fine blooms of an unnamed seedling Cactus.

Mr. H. Etherington, Stoke, Coventry, sent a seedling Pink named Mrs. Etherington.

From Mr. R. Dean, Ealing, came *Chrysanthemum* Sibthorpii. An early-flowering annual variety, quite distinct in seed, foliage, and height.

Mr. J. Prewett, 11 Lancaster Gate, Bayswater, staged some pretty rustic stands, &c., suitable for table decoration.

Mr. Ladhams, Southampton, submitted five Perpetual Pinks, viz., Queen of the South, Percy, Caroline, Lizzie Duval, and Little Pet. The Committee requested that they might be sent to the Society's Gardens for trial.

From Messrs. R. Kimberley & Son, Stoke Nursery, Coventry, came a seedling tricolor *Geranium* named Brilliant. A free-growing variety, which keeps its colour well during the winter months.

Mr. G. May, King's Road, Teddington, sent a group of Carnation *Uriah Pike*.

Mr. E. Cook, Temperance Cottage, Flass, Durham, sent an unnamed *Pelargonium*.

Prize.

Class 4.—Six Single and six Double *Pyrethrums*, three blooms of each. Amateurs. *Prize*, Kelway Silver Medal, to Mr. W. Salmon, 2 Ivy Cottages, Elder Road, West Norwood.

FLORAL COMMITTEE, JUNE 26, 1894.

W. MARSHALL, Esq., in the Chair, and twenty-two members present.

Awards Recommended:—

Silver Gilt Flora Medal.

To Mr. H. B. May, Dyson's Lane, Upper Edmonton, for a

magnificent group of choice foliage plants, beautifully set off with Ferns, Palms, Asparagus, &c., noteworthy examples being highly coloured Crotons and Dracenas in great variety; also Dieffenbachias, variegated Ficus elastica, Pandanus Veitchii, and Phrynium variegatum.

Silver Flora Medal.

To Mr. C. Turner, Slough, for a handsome group of Carnations, plants well grown and carrying very fine flowers in many shades of colour, noteworthy varieties being King of Scarlets, Rose Celestial, and Germania.

To Messrs. J. Veitch & Sons, Chelsea, for an extensive group of single and semi-double Delphiniums; also a very large collection of Pæonies in good condition.

To Messrs. Paul & Son, Cheshunt, for a very showy group of hardy flowers, amongst which were Iris gigantea, Funkias, Cypripedium spectabile, Campanulas (very good), and a magnificent collection of the best forms of Pæonies.

Silver Banksian Medal.

To Mr. B. Ladhams, High Street, Shirley, Southampton, for a beautiful collection of Pinks, including splendid examples of the new large-flowered variety Ernest Ladhams; also several very fine bunches of the new single Rose Reine Blanche.

To Messrs. Barr & Son, Covent Garden, for a large group of hardy flowers, consisting of Pæonies, Spanish and German Iris in great variety, Gaillardias, Delphiniums, &c.

To Mr. M. Prichard, Christchurch, for a fine collection of hardy flowers, amongst which were Gaillardias, Dictamnus albus, Scabiosa caucasica (very fine), Pinks, Irises, Campanulas, and Pyrethrums.

To Messrs. H. Cannell & Sons, Swanley, for three very fine spikes of Verbascum olympicum, a particularly showy plant with bright yellow flowers.

To Messrs. W. Cutbush & Son, Highgate, N., for a very fine group of Malmaison Carnations.

Bronze Banksian Medal.

To Mr. T. Bones, Heaton Gardens, Cheshunt, for a group of well-grown Carnation Yellow Queen. Plants of dwarf habit and perfect flowers.

To Messrs. Cooling & Sons, 11 Northgate Street, Bath, for an interesting group of old-fashioned garden Roses, containing York and Lancaster, Harrisonii, W. A. Richardson, rugosa plena, and several Moss varieties.

To Messrs. Dobbie & Co., Rothesay, for a collection of fifty varieties of Violas arranged in neat bunches.

First Class Certificate.

To Clematis Countess of Onslow (C. coccinea × C. Star of India) (votes, unanimous), from Messrs. G. Jackman & Son, Woking. A beautiful and distinct hybrid with bell-shaped flowers; colour violet-purple, with a distinct crimson band down the centre of each petal.

Award of Merit.

To Carnation James O'Brien (votes, 7 for), from Leopold de Rothschild, Esq., Ascot (gr. Mr. Jennings). Flowers large and of a dark red colour.

To Sweet Pea Emily Henderson (votes, unanimous), from Mr. Herbst, Kew Road, Richmond. A very handsome pure white-flowered variety of great substance.

To Carnation Mrs. F. A. Bevan (votes, 16 for), from Mr. W. H. Lees, Trent Park Gardens, New Barnet. Flowers of medium size; colour salmon-rose flushed with violet.

To Hemerocallis Frances (votes, 11 for, 2 against), from Mr. G. Yeld, Clifton Cottage, York. A pretty form with bright yellow flowers.

To Croton Mayii (votes, 13 for), from Mr. H. B. May, Edmonton. A pretty narrow-leaved variety; colour yellow and green.

To Dracæna Ouvrardii (votes, 10 for, 2 against), from Mr. J. Ouvrard, Child's Hill, Kilburn. A distinct variety, with broad leaves of a rich shining green and bright pink margins.

To Spiræa astilboides floribunda (votes, 16 for), from Mr. M. Prichard, Christchurch. A dwarf and free-blooming variety, with large panicles of creamy-white flowers.

To Eryngium alpinum (votes 10 for, 8 against) from Mr. M. Prichard, Christchurch. A distinct variety with bracts of a mauve-steel colour. Very pretty.

To Begonia H. J. Infield (votes, 12 for, 1 against), from

Messrs. J. Laing & Sons, Forest Hill. Flowers double, well-formed, and of a rich salmon-scarlet colour.

To Begonia Dr. Nansen (votes 12 for), from Messrs. J. Laing & Sons. A large double-flowered variety, with bright crimson flowers.

To Pæony La Perle (votes, unanimous), from Messrs. Paul & Son, Cheshunt. A very fine large-flowered variety, of good form and a pretty blush shade.

Botanical Certificate.

To Calochortus Howelli (votes, unanimous), from Messrs. Wallace & Co., Colchester. An extremely rare plant, producing small but well-shaped flowers; colour creamy white, with numerous yellow hairs.

Cultural Commendation.

To Messrs. J. Veitch & Sons, Chelsea, for a very well-grown plant of Callistemon speciosus.

To Martin R. Smith, Esq., The Warren, Hayes, Kent (gr. Mr. Blick), for exceptionally well-flowered Carnations.

Other Exhibits.

J. T. Bennett-Poë, Esq., 29 Ashley Place, S.W., sent a very fine group of Spanish Iris.

From Lord Penzance, Eashing Park, Godalming, came an interesting group of seedling Sweet Briars.

F. W. Moore, Esq., Botanic Gardens, Glasnevin, sent Kniphofia caulescens.

Miss Willmott, Warley, Essex, exhibited several sprays of Escallonia macrantha sanguinea.

Rev. F. Bingham, Horfield Rectory, Bristol, submitted a very fine seedling Cactus.

From Mr. G. Yeld, Clifton Cottage, York, came an unusually interesting exhibit of Iris, most of which were raised by the exhibitor; also some good Hemerocallis blooms.

H. J. Elwes, Esq., Colesborne, Cheltenham, showed very good examples of Kniphofia Tuckei, an extremely hardy and free-growing plant.

Mr. A. Smith, Prospect House, Downley, High Wycombe, staged a group of Pansies and cut Roses.

Messrs. Wallace & Co., Colchester sent a very fine batch of

Calochorti; also *Iris juncea numidica*, a new form from Numidia, with pale yellow flowers, and *Iris anglica* Léon Tolsti, in grand condition.

Messrs. James Dixon & Son, Spencer Nursery, Wandsworth, exhibited a double form of Zonal Pelargonium Henry Jacoby.

Mr. G. Fry, Lewisham, sent a yellow Carnation named Duchess of York.

From Messrs. Keynes, Williams & Co., Salisbury, came several varieties of hybrid Sweet Briars.

Mr. A. Waterer, Woking, sent a number of seedling hardy Azaleas.

Prizes.

Class 4.—Six single and six double or semi-double Delphiniums, distinct, one spike of each. Amateurs. *Prize*, Kelway Silver Medal, to Joseph Brutton, Esq., Yeovil.

ROSE SHOW.

Class 4a.—Twenty-four Roses, distinct, three blooms of each. Open. *First Prize*, Silver Challenge Cup, value £26. 5s. (presented by J. Mantell, Esq., Kingstead, Gunnersbury), to Mr. Benjamin Cant, Colchester. *Second Prize*, £3, to Mr. Frank Cant, Colchester. *Third Prize*, £2, to Messrs. Paul & Son, Cheshunt.

HYBRID PERPETUALS, INCLUDING HYBRID TEAS.

Class 5.—Twenty-four single trusses, not more than two of any one variety. Amateurs. *First Prize*, Turner Memorial Silver Cup, value £5, to the Rev. Hugh A. Berners, Harkstead Rectory, Ipswich. *Second Prize*, £2, to R. L. Knight, Esq., Botting Place, Sittingbourne.

Class 6.—Twenty-four single trusses, distinct. Open. *First Prize*, £3, to Mr. B. Cant. *Second Prize*, £2, to Mr. F. Cant.

TEAS AND NOISETTES.

Class 7.—Twenty-four single trusses, not less than twelve varieties or more than three trusses of any one variety. Amateurs. *First Prize*, Turner Memorial Silver Cup, value £5, to the Rev. Hugh A. Berners. *Second Prize*, £2, to J. C. Tasker, Esq., Middleton Hall, Brentwood, Essex (gr. Mr. Perry).

Class 8.—Twelve single trusses, not less than nine varieties or more than two trusses of any one variety. Amateurs. *First*

Prize, £2, to the Rev. J. H. Pemberton, Havering-atte-Bower, Romford. *Second Prize, £1. 5s.*, to Rev. A. Foster-Me'lliar, Sproughton Rectory, Ipswich.

Class 9.—Six single trusses, not less than four varieties. Amateurs. *First Prize, £1. 10s.*, to R. E. West, Esq., Reigate.

Class 10.—Six single trusses of any one variety. Amateurs. *First Prize, £1*, to Rev. Hugh A. Berners.

Class 11.—Twenty-four distinct, single trusses. Open. *First Prize, £2. 10s.*, to Mr. George Prince, 14 Market Street, Oxford. *Second Prize, £1. 10s.*, to Mr. Frank Cant.

Class 12.—Twelve distinct, three trusses of each. Open. *First Prize, £2. 10s.*, to Mr. George Prince. *Second Prize, £1. 10s.*, to Mr. Frank Cant.

Class 13.—Twelve single trusses of any Tea or Noisette. Open. *First Prize, £1. 10s.*, to Mr. George Prince. *Second Prize, £1*, to Mr. Frank Cant.

TULIP SHOW, MAY 8, 1894.

The Royal National Tulip Society held a show in the Drill Hall on the above date, when there were numerous exhibitors of this once highly popular flower.

In addition to the prizes offered by the R.N.T.S., a class was also set apart in the R.H.S. Schedule for 1894 for a "Collection of English Amateur Tulips."

The *First Prize*, a Barr Silver Medal, was won by Mr. J. W. Bentley, Stakehill, Castleton, Manchester, and the *Second Prize*, a Barr Small Silver Medal, by Mr. C. W. Needham, 50 Swan Street, Manchester.

ORCHID COMMITTEE.

JANUARY 16, 1894.

HARRY J. VEITCH, Esq., in the Chair, and eighteen members present.

Awards Recommended:—

Silver Gilt Flora Medal.

To Messrs. F. Sander & Co., St. Albans, for an extensive group of Orchids, chiefly composed of white varieties of *Lælia anceps*, of which there were over sixty spikes, bearing together nearly two hundred and fifty flowers.

Silver Flora Medal.

To R. I. Measures, Esq., Cambridge Lodge, Camberwell (gr. Mr. H. Chapman), for a group of *Cypripediums* and other Orchids, among which the yellow *Cypripedium insigne Ernesti*, *C. × Leeanaum illustre*, *C. Buchanianum* (*C. Druryi* ♀ × *C. Spicerianum* ♂), *Pleurothallis punctulata*, and *Masdevallia cupularis* were remarkable.

Silver Banksian Medal.

To Sir Trevor Lawrence, Bart., Burford, Dorking (gr. Mr. W. H. White), for a group of rare Orchids, comprising *Dendrobium × burfordiense*, and crosses between *D. Ainsworthii* × and *D. Findlayanum*; *Cypripedium × Calypso*, Oakwood var.; a fine specimen of *Cœlogyne graminifolia*, cut spikes of *Angræcum eburneum*, and *Phalænopsis intermedia Portei*.

To Messrs. Hugh Low & Co., Clapton, for a group of Orchids, in which were varieties of *Saccolabium bellinum* and an unspotted variety of it named *S. b. album*.

To Messrs. B. S. Williams & Son, Upper Holloway, N., for a group containing about twenty distinct varieties of *Cypripedium*, some fine *Dendrobium Wardianum*, *Oncidium Forbesii*, *Odontoglossums*, &c.

Bronze Banksian Medal.

To Mr. James Crispin, Fishponds, Bristol, for a collection of cut spikes of *Cypripediums*.

First Class Certificate.

To *Lælia anceps* Ashworthiana (votes, unanimous), from Messrs. F. Sander & Co., St. Albans. This was a large pure white form, with yellow keels on the labellum and slate-blue lines on the side lobes.

To *Dendrobium atro-violaceum* (votes, unanimous), from



FIG. 5.—*CYPRIPEDIUM* × *ADRASTUS*. (*Journal of Horticulture*.)

F. Wigan, Esq., Clare Lawn, East Sheen (gr. Mr. W. H. Young). A New Guinean species of the *D. macrophyllum* section, and with violet-purple lip.

To *Cypripedium* × *Morgania* var. *langleyense* (votes, 6 for, 4 against), from Messrs. Jas. Veitch & Sons, King's Road, Chelsea. This is the result of crossing *C. superbiens* with the pollen of

C. *Stonei* platytænium, and it has broader petals with fewer and larger spots than the original C. × *Morganiaë*.

To *Cypripedium* × *Adrastus* (C. × *Leeanum* ♀ × C. *Boxalli* ♂) (votes, unanimous), from Messrs. Jas. Veitch & Sons, King's Road, Chelsea. This fine hybrid had flowers in shape and colour following C. *Boxalli*, but all the segments were broader, the upper sepal being especially fine (fig. 5).

Award of Merit.

To *Phaio*-*Calanthe* × *Arnoldiaë* (*Calanthe* *Regnieri* ♀ × *Phaius grandifolius* ♂) (votes, unanimous), from Messrs. F. Sander & Co., St. Albans. A singular and pretty hybrid with pale pink and buff flowers.

To *Calanthe* × *William Murray* (C. *vestita rubro-oculata* ♀ × C. × *Williamsii* ♂) (votes, unanimous), from Norman C. Cookson, Esq., Oakwood, Wylam-on-Tyne (gr. Mr. W. Murray). Sepals and petals white, lip dark crimson.

To *Calanthe* × *Bryan* (C. *vestita rubro-oculata* ♀ × C. × *Williamsii* ♂) (votes, 9 for, 7 against). Flowers cream-white with purple eye.

To *Dendrobium* × *Hebe* (D. *Findlayanum* ♀ × D. × *Ainsworthii* ♂) (votes, unanimous), from Sir Trevor Lawrence, Bart., Burford, Dorking (gr. Mr. W. H. White). A pretty and delicately tinted variety with pink and sulphur-coloured flowers.

To *Calanthe* × *Florence* (C. × *bella* ♀ × C. × *Veitchii* ♂) (votes, unanimous), from Mr. J. H. Fitt, The Frythe Gardens, Welwyn, Herts. Flowers white, mottled with deep purple, and with dark purple eye.

Botanical Certificate.

To *Mormodes Rolfeanum* (votes, unanimous), from Sir Trevor Lawrence, Bart. (gr. Mr. W. H. White).

To *Epidendrum polybulbon* (votes, unanimous), from Sir Trevor Lawrence, Bart.

Other Exhibits.

Thos. Statter, Esq., Stand Hall, Whitefield, Manchester (gr. Mr. R. Johnson), showed *Cypripedium* × *Edwardi superbum*, C. × *Ariadne*, C. × *Lucienianum* (C. *villosum* ♀ × C. × *œnantium superbum* ♂), and *Lælia* × *Euterpe*.

De Barri Crawshay, Esq., Rosefield, Sevenoaks (gr. Mr. S. Cooke), sent *Lælia* × *Crawshayana*, *Odontoglossum Ruckerianum*, *Crawshay's* var., and *O. Andersonianum lobatum*.

Norman C. Cookson, Esq., sent *Calanthe* × *Sybil* and *C.* × *Phœbe*.

C. W. Fincken, Esq., Hoyland Hall, Barnsley (gr. Mr. J. Milburn), showed *Lælia anceps Schröderiana* and varieties of *Odontoglossum Rossii majus*.

A. J. Hollington, Esq., Forty Hill, Enfield (gr. Mr. E. Ayling), showed three hybrid *Cypripediums*.

F. A. Bevan, Esq., Trent Park, Barnet (gr. Mr. W. H. Lees), submitted *Dendrobium Phalænopsis*, Trent Park variety, with white flowers having violet marks on the lip.

W. Thompson, Esq., Walton Grange, Stone, Staffordshire (gr. Mr. W. Stevens), exhibited a well-flowered plant of *Odontoglossum Rossii*, Stevens' var., and some *O. Andersonianum*.

Mr. W. Head, Crystal Palace Gardens, Sydenham, showed the nearly white *Cattleya Trianæ albens*.

Messrs. Jas. Veitch & Sons, King's Road, Chelsea, staged a small group of rare Orchids, comprising *Sophro-Cattleya* × *Veitchii*, *Epidendrum* × *Endresio-Wallisii*, *Dendrobium* × *euosmum* and *D.* × *e. roseum*, *Cypripedium* × *Niobe*, and *C.* × *Germinyanum*.

Messrs. Linden, l'Horticulture Internationale, Parc Léopold, Brussels, sent *Maxillaria Lindenianæ* (a very fine white species, like a large *M. venusta*), *Zygopetalum Clæasianum*, *Stenia fimbriata*, *Odontoglossum Jenningsianum pauci-guttatum*, &c., too late for the opinion of the Committee to be taken upon them.

W. R. Lee, Esq., Beech Lawn, Audenshaw, Manchester, sent *Cypripedium* × *Leo*.

F. W. Moore, Esq., Royal Botanic Gardens, Glasnevin, Dublin, sent fine spikes of *Bulbophyllum comosum* and *Cyperorchis elegans*.

W. M. Appleton, Esq., Tyn-y-Coed, Weston-super-Mare, showed *Cypripedium Bullenianum Appletonianum*, *Lælia albida*, *L. a. sulphurea*, and *Cattleya Walkeriana*.

ORCHID COMMITTEE, FEBRUARY 13, 1894.

HARRY J. VEITCH, Esq., in the Chair, and fifteen members present.

Awards Recommended:—*Silver Flora Medal.*

To Sir Trevor Lawrence, Bart., Burford, Dorking (gr. Mr. W. H. White), for an extensive and interesting group of rare Orchids, among which were a splendid specimen of *Sophronitis grandiflora* with over fifty flowers, *Ada aurantiaca* with twenty spikes, the singular *Bulbophyllum mandibulare*, *B. Careyanum*, *Masdevallia picturata*, *M. irrorata*, *M. Schröderiana*, *M. ignea*, *Cypripedium* × *Lawrebel*, *Dendrobium* × *Wardiano-japonicum*, *D.* × *xanthocentrum*, *D.* × *melanodiscus Aurora*, *D.* × *Luna*, *D.* × *splendidissimum grandiflorum*, *Cymbidium eburneum*, *Oncidium Cavendishianum*, *Phalænopsis Schilleriana*, *P. Stuartiana*, *Epidendrum* × *Endresio-Wallisii*, &c.

To Messrs. Jas. Veitch & Sons, King's Road, Chelsea, for a collection of Orchids, principally of hybrid origin. Of these there were two finely flowered plants of *Cymbidium* × *eburneo-Lowianum* with very large cream-white pink-tinted flowers, *Phalænopsis* × *F. L. Ames* (*P. grandiflora* ♀ × *P. intermedia Portei* ♂), *Lælio-Cattleya* × *Tydea* (*L. pumila* ♀ × *C. labiata Trianæ* ♂), *Dendrobium* × *euosmum* and all its varieties, *Trichopilia fragrans* with four spikes, varieties of *Cattleya labiata Trianæ*, *Epidendrum Endresio-Wallisii*, *Cypripedium villosum Boxalli* with ten flowers, and various hybrid *Cypripediums*, &c.

To Messrs. F. Sander & Co. for a select group of Orchids, including several varieties of *Dendrobium Phalænopsis*, *Odontoglossum Edwardii* with two fine spikes, *Lycaste costata superba* with ten flowers, *Catasetum fimbriatum*, forms of *Cattleya guttata Prinzi*, a fine white *Cymbidium eburneum*, *Phaius Sanderianus*, *Cattleya Trianæ alba*, *Angræcum Chailluianum*, several rare tropical *Neottias*, and new hybrid Orchids.

To Messrs. B. S. Williams & Son, Upper Holloway, for a fine group of Orchids, containing excellent specimens of twenty species and varieties of *Cypripediums*, *Dendrobium nobile nobilius*, and some hybrid *Dendrobes*; *Lælia anceps Williamsi*, *L. a. Fitchiana*, *L. a. Sanderiana*, *Oncidium bifrons*, various *Odontoglossums*, &c.



FIG. 6.—*CALANTHE* × *BARON SCHRÖDER*.
(*Journal of Horticulture*.)

To Messrs. Hugh Low & Co., Clapton, for a group of Orchids, in which *Phalenopses* were conspicuous. There were also *Cattleya Percivaliana*, with thirty flowers, and two lesser plants



FIG. 7.--LÆLIO-CATTELEYA × THE HON. MRS. ASTOR. (*Journal of Horticulture*.)

of very distinct varieties of the same; *Lælia glauca*, *Cattleya labiata* Trianæ, *Cypripediums*, *Odontoglossums*, &c.

Silver Banksian Medal.

To Messrs. W. L. Lewis & Co., Chase Side, Southgate, for a group of Orchids, in which were some fine specimens of *Lælia*

anceps, Cattleyas, Lælias, and Oñontoglossums, and a well-flowered plant of *Phalænopsis Stuartiana punctatissima*.

First Class Certificate.

To *Calanthe* × *Baron Schröder* (*C. vestita oculata gigantea* ♀ × *C. Regnierii* ♂, and *vice versâ*) (votes, unanimous), from



FIG. 8.—LÆLIO-CATTLEYA × TYDEA.

Baron Schröder, The Dell, Egham (gr. Mr. H. Ballantine). Flowers large, rich dark crimson-purple, very bright in the centre of the lip. The sepals and petals were slightly freckled with white (fig. 6).

To *Lælio-Cattleya* × The Honourable Mrs. Astor (*C. labiata*

Gaskelliana ♀ × *L. xanthina* ♂) (votes, 11 for, 2 against), from Messrs. F. Sander & Co., St. Albans. Flowers five inches across, resembling those of *Cattleya Rex*. Sepals and petals sulphur-yellow; lip yellow at the base, with purple veining; front lobe rose-crimson (fig. 7).

Award of Merit.

To *Lælio-Cattleya* × *Tydea* (*L. pumila* ♀ × *C. Trianae* ♂) (votes, unanimous), from Messrs. Jas. Veitch & Sons, Chelsea. Flowers in size and colour like *L. pumila præstans*, but with the lip formed like *C. Percivaliana*, and of a dark amethyst-purple (fig. 8).

To *Cypripedium* × *Godseffianum* (*C. Boxalli* var. ♀ × *C. hirsutissimum* ♂) (votes, unanimous), from Messrs. Jas. Veitch & Sons. Several crosses between *C. hirsutissimum* and forms of *C. villosum* were shown, but this was the most noteworthy.

To *Cypripedium* × *Captain Lendy* (*C. Boxalli* ♀ × *Charles Canham* ♂) (votes, unanimous), from Chas. L. N. Ingram, Esq., Godalming (gr. Mr. T. W. Bond). A fine hybrid with the colouring of *C. Boxalli* and the large size of the other parent.

To *Cypripedium* × *Fraseri* (*C. hirsutissimum* ♀ × *C. barbatum*) (votes, unanimous), from R. I. Measures, Esq., Cambridge Lodge, Camberwell (gr. Mr. H. Chapman). A very pretty hybrid, with much of the rich purple of *C. hirsutissimum*.

To *Galeandra Devoniana* (votes, unanimous), from Walter Cobb, Esq., Dulcote, Tunbridge Wells (gr. Mr. J. Howes). A very handsome form of the species.

To *Phalænopsis Youngiana* (votes, 8 for, 5 against), from Mr. G. Young, Keyfield Nursery, St. Albans. A supposed natural hybrid between *P. Aphrodite Dayana* and *P. Schilleriana*.

Botanical Certificate.

To *Masdevallia picturata* (votes, unanimous), from Sir Trevor Lawrence, Bart. (gr. Mr. W. H. White).

To *Dendrobium purpureum candidum* (votes, 8 for), from Sir Trevor Lawrence, Bart.

To *Catasetum barbatum spinosum* (votes, unanimous), from Sir Trevor Lawrence, Bart.

To *Angræcum (Listrostachys) porrigens* (votes, unanimous),

from F. W. Moore, Esq., Royal Botanic Gardens, Glasnevin, Dublin. Flowers like those of *Angræcum arcuatum*, but small and numerous.

To *Pleurothallis Roezlii* (votes, unanimous), from R. I. Measures, Esq., Cambridge Lodge, Camberwell (gr. Mr. H. Chapman). It bore two racemes of large pendulous purple flowers.

Cultural Commendation.

To Thos. Statter, Esq., Stand Hall, Whitefield, Manchester (gr. Mr. R. Johnson), for a grand plant of *Lycaste Skinnerii alba*, with fourteen flowers from one leading bulb (votes, unanimous).

To E. H. Woodall, Esq., St. Nicholas House, Scarborough, for a fine example of *Cypripedium Rothschildianum*, with three large fully expanded flowers (votes, unanimous).

Other Exhibits.

Lord Haddington, Prestonkirk, N.B. (gr. Mr. Brotherston), sent a fine spike of a beautifully spotted *Odontoglossum*, a supposed natural hybrid.

Henry Tate, jun., Esq., Allerton Beeches, Liverpool, sent *Cypripedium* × *tenebrosum* (*C.* × *Harrisianum nigrum* ♀ × *C.* *Boxallii atratum* ♂), like a large *C.* × *Harrisianum superbum*.

The Duke of Marlborough, Blenheim, Woodstock (gr. Mr. Whillans), sent a spike of *Vanda teres alba*.

C. J. Lucas, Esq., Warnham Court, Horsham (gr. Mr. Duncan), showed *Phalænopsis Aphrodite*, *P. Stuartiana*, *Cypripedium Argus*, and *Epidendrum* sp.

Norman C. Cookson, Esq., Oakwood, Wylam-on-Tyne, sent a spike of a *Calanthe* similar to *C.* × *Wm. Murray*.

G. D. Owen, Esq., Selwood, Rotherham, showed *Dendrobium atro-violaceum*.

Messrs. Heath & Son, Cheltenham, staged some hybrid *Cypripediums* (practically varieties of *C. villosum*), *Lælia* × *Euterpe*, and *Cattleya Trianæ Ernesti*.

Mr. J. Fitt, Panshanger Gardens, showed a hybrid *Cypripedium* (*C. hirsutissimum* ♀ × *C. villosum* ♂).

Mr. William Denning, Hampton, showed *Cattleya Percivaliana*.

E. W. Hamilton, Esq. (gr. Mr. G. T. Cole), Charters, Sunninghill, Ascot, sent *Dendrobium speciosum* with five fine spikes.

Mrs. Armstrong, Woodslee, near Brighton (gr. Mr. Meachen), showed a form of *Dendrobium* × *Ainsworthii*.

F. W. Moore, Esq., Royal Botanic Gardens, Glasnevin, Dublin, sent cut spikes of *Cypripedium Lindleyanum* and other Orchids.

ORCHID COMMITTEE, MARCH 13, 1894.

HARRY J. VEITCH, Esq., in the Chair, and eighteen members present.

Awards Recommended:—

Gold Banksian Medal.

To Baron Schröder, The Dell, Egham (gr. Mr. H. Ballantine), for a grand example of the heavily spotted *Odontoglossum crispum apiatum*.

Silver Flora Medal.

To Sir Trevor Lawrence, Bart., Burford, Dorking (gr. Mr. W. H. White), for a group of rare Orchids, among which were *Bulbophyllum Sillemianum*, *Cirrhopetalum picturatum* (with four spikes), *Cymbidium Lowianum viride*, *Dendrobium* × *The Pearl*, *D.* × *Aspasia*, *D.* × *melanodiscus* (several varieties), *D.* × *micans*, *D. nobile Murrhinianum*, *D. cucullatum*, *Odontoglossums*, &c.

To J. Gurney Fowler, Esq., Glebelands, South Woodford, Essex (gr. Mr. J. Davis), for an extensive collection of showy Orchids.

To J. Gurney Fowler, Esq., for remarkably good cultivation shown in a finely flowered specimen of a superb form of *Cattleya labiata Trianæ* with over thirty blooms.

To Thomas Statter, Esq., Stand Hall, Whitefield, Manchester (gr. Mr. R. Johnson), for fine cultivation shown in a large specimen of *Dendrobium nobile nobilius* and *D.* × *splendidissimum grandiflorum*, covered with flowers.

To Messrs. F. Sander & Co., St. Albans, for an extensive group of Orchids, including forms of *Dendrobium Phalænopsis Schröderianum*.

To Messrs. B. S. Williams & Son, Upper Holloway, N., for a group of Orchids, in which many specimens of *Cœlogyne cristata alba* were conspicuous.

Silver Banksian Medal.

To Messrs. Hugh Low & Co., Clapton, for a collection of Orchids, chiefly *Miltonia Roezlii*, with a number of plants of *Oncidium ampliatum*, and a specimen of the singular *Houlletia Lowii*.

To W. C. Walker, Esq., Winchmore Hill (gr. Mr. G. Cragg), for a group of Orchids.

To Messrs. W. L. Lewis & Co., Southgate, N., for a showy collection of Orchids.

To Messrs. Collins & Collins, Cumberland Park, Willesden, for a display of *Cymbidium eburneum*, *C. Lowianum*, and *Cœlogyne cristata*.

First Class Certificate.

To *Odontoglossum excellens chrysomelanum* (votes, 8 for, 2 against), from Sir Trevor Lawrence, Bart., Burford, Dorking (gr. Mr. W. H. White). A fine form, with the colours of *O. triumphans*.

To *Masdevallia gargantua* (votes, unanimous), from Sir Trevor Lawrence, Bart. (gr. Mr. W. H. White). A gigantic and extraordinary species, with fleshy pale yellow flowers, stained with purple on the lower sepals.

To *Arachnanthe (Vanda) Cathcartii grandiflora* (votes, 7 for, 2 against), from Lord Cork, Marston House, Frome (gr. Mr. W. Iggulden). A very large and darkly coloured variety.

To *Dendrobium* × *Sybil* (votes, unanimous), from Norman C. Cookson, Esq., Oakwood, Wylam-on-Tyne (gr. Mr. W. Murray). A fine hybrid, obtained by crossing *D. Linawianum* with *D. gibbbum*. It had received an Award of Merit previously.

To *Phaius* × *Marthæ* (*P. Blumei* ♀ × *P. tuberosus* ♂) (votes, unanimous), from Messrs. F. Sander & Co., St. Albans. In form this is similar to *P.* × *Cooksonii*, but in colour of a pale nankeen, the base of the lip streaked with purple and the front tinged pink (fig. 9).

To *Cœlogyne Mossiæ*, n. sp. (votes, unanimous), from J. S.

Moss, Esq., Winter's Hill, Bishops Waltham (gr. Mr. Bazeley). A pretty and distinct species, with the growth of *C. elata*, but smaller, and an arching raceme of white flowers, in form something like a small *Phalænopsis*.

To *Dendrobium* × *Virginia* (*D. japonicum* ♀ × *D. Ben-*

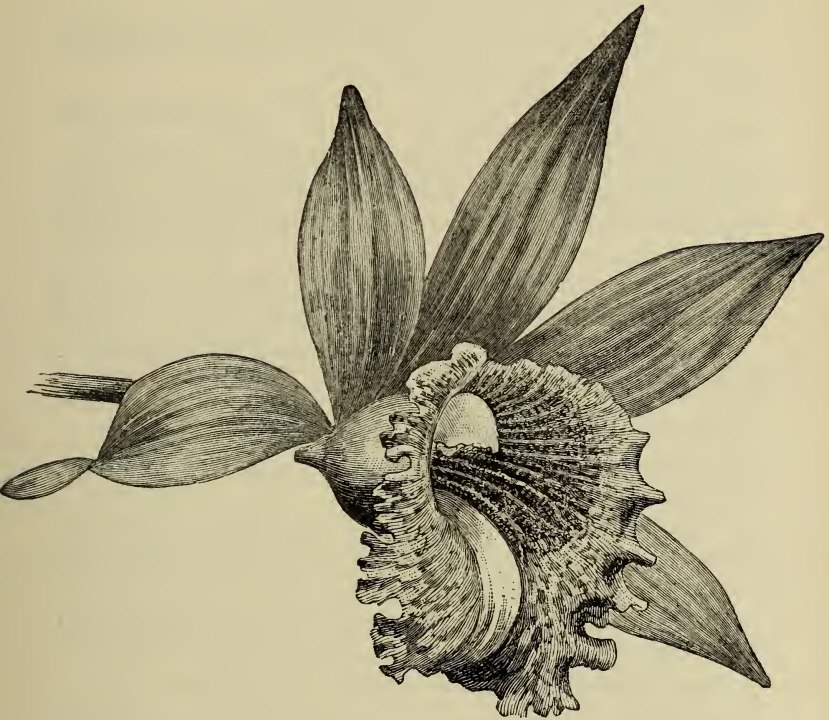


FIG. 9.—*PHAIUS* × *MARTHE*. (*Journal of Horticulture*.)

soniæ ♂) (votes, 8 for), from Messrs. Jas. Veitch & Sons, King's Road, Chelsea. A pretty hybrid, with creamy-white flowers and dark markings at the base of the lip.

Award of Merit.

To *Dendrobium* × *Cybele* (*D. Finlayanum* ♀ × *D. nobile* ♂) (votes, unanimous), from Messrs. Jas. Veitch & Sons, Chelsea. A very handsome hybrid, with large flowers borne on long foot-

stalks. Flowers white, tinged and tipped with purplish crimson. Lip with a dark purple blotch, surrounded by yellow zone, the apex being crimson.

To *Phalænopsis* × *Vesta* (*P. Aphrodite* ♀ × *P. rosea leucaspis* ♂ (votes, unanimous), from Messrs. Jas. Veitch & Sons, Chelsea. In general appearance this resembled *P* × *intermedia Portei*. Flowers pale rose, lip brownish red.

To *Lælia superbiens* (votes, unanimous), from R. I. Measures, Esq., Camberwell (gr. Mr. H. Chapman).

To *Cattleya Loddigesii* var. (votes, unanimous), from R. I. Measures, Esq., Camberwell.

To *Lycaste Skinnerii* "Mrs. H. Ballantine" (votes, unanimous), from Messrs. F. Sander & Co., St. Albans. A large white flower, with pink lower halves to the petals, and orange callus on the lip.

To *Phaius Blumei* (votes, 8 for, 4 against), from A. H. Smee, Esq., The Grange, Wallington (gr. Mr. Cummins).

To *Trichocentrum tigrinum* (votes, unanimous), from Messrs. B. S. Williams & Son, Upper Holloway, N.

Botanical Certificate.

To *Dendrobium Imperatrix* (votes, unanimous), from Messrs. F. Sander & Co., St. Albans.

To *Arpophyllum giganteum* (votes, unanimous), from F. W. Moore, Esq., Royal Botanic Gardens, Glasnevin, Dublin, and W. C. Walker, Esq., Winchmore Hill.

To *Pleurothallis asterophora* (votes, 8 for, 7 against), from F. W. Moore, Esq., Royal Botanic Gardens, Dublin.

To *Pleurothallis Grobyii* (votes, unanimous), from R. I. Measures, Esq., Camberwell (gr. Mr. H. Chapman).

To *Pleurothallis Barberiana* (votes, unanimous), from R. I. Measures, Esq., Camberwell.

To *Dendrobium Kingianum album* (votes, unanimous), from Sir Trevor Lawrence, Bart. (gr. Mr. W. H. White).

To *Calanthe striata* (votes, unanimous), from F. W. Moore, Esq., Royal Botanic Gardens, Glasnevin, Dublin.

To *Bifrenaria racemosa* (votes, unanimous), from Messrs. W. L. Lewis & Co., Southgate.

To *Dendrobium tetragonum* (votes, unanimous), from A. H. Smee, Esq., Wallington.

Cultural Commendation.

To W. Thompson, Esq., Walton Grange, Stone, Staffordshire (gr. Mr. W. Stevens), for a finely flowered pseudo-bulb of *Dendrobium Wardianum*, about 4 feet in length, cut from a pruned plant.

To W. R. Lee, Esq., Beech Lawn, Audenshaw (gr. Mr. Billington), for a fine specimen of *Dendrobium* × *splendidissimum*, Lee's var.

Other Exhibits.

Charles L. N. Ingram, Esq., Elstead House, Godalming (gr. Mr. T. W. Bond), showed *Cypripedium* × *Lobengula* (like a dark *C.* × *Harrisianum*), *Dendrobium nobile* var., and *Cypripedium Chamberlainianum*.

Messrs. J. Veitch & Sons sent *Dendrobium* × *Euryalus* (*D.* × *Ainsworthii* ♀ × *D. nobile* ♂), *Chysis* × *Chelsoni*, *Cymbidium* × *eburneo-Lowianum*, and *Dendrobium atro-violaceum*.

W. E. Brymer, Esq., M.P., Ilsington House, Dorchester, sent *Dendrobium* × *Benita* (*D. aureum* ♀ × *D. Falconeri* ♂), which did not, however, show much trace of *D. Falconeri* in the pseudo-bulbs.

Welbore S. Ellis, Esq., Hazelbourne, Dorking (gr. Mr. Masterson), sent a flower of *Zygopetalum* (*Bollea*) *Patinii*.

H. Weetman, Esq., Little Haywood, Stafford, sent cut flowers of many forms of *Dendrobium nobile*, &c.

J. W. Swinburne, Esq., Corndean Hall, Winchcombe, showed two hybrid *Cypripedium*s.

Mr. P. McArthur, Maida Vale, showed *Cypripedium Chamberlainianum excellens*.

M. Jules Hye-Leysen, 8 Coupure, Ghent, showed *Cypripedium* × *Lathamianum Rex*.

Mr. J. McBean, Cooksbridge, Lewes, showed a light form of *Dendrobium nobile*.

Miss Harris, Lamberhurst, showed three finely flowered *Dendrobium* × *Ainsworthii*.

P. Ralli, Esq., Ashted Park, Epsom, sent *Miltonia flavescens grandiflora*.

Baron Schröder showed fine cut spikes of *Odontoglossum Pescatorei Schröderianum* and other *Odontoglossum*s.

ORCHID COMMITTEE, MARCH 27, 1894.

HARRY J. VEITCH, Esq., in the Chair, and twelve members present.

Awards Recommended :—*Silver Flora Medal.*

To Sir Trevor Lawrence, Bart., Burford, Dorking (gr. Mr. W. H. White), for a choice group of Orchids, at the back of which were three grandly flowered examples of *Dendrobium Findlayanum*. Among others there were fine plants of *Dendrobium* × *cheltenhamense*, *D.* × *Wardiano-nobile*, *D. Tattonianum*, *D. superbum cœnosmum*, *D. s. Burkei*, *D. s. Huttoni*, *Camaridium Lawrenceanum* (a scandent species with small blush-white and purple flowers), a cut spike of *Odontoglossum coronarium miniatum*, &c.

To Baron Schröder, The Dell, Egham, for a collection of plants and cut spikes of rare Orchids. Among them were three forms of the rich orange *Lælia* × *vitellina*, a noble plant of *Odontoglossum Wilckeanum*, Godefroy's var., cut spikes of *O. crispum Schröderianum*, *O. Pescatorei Schröderianum*, *O. P. Veitchianum*, forms of *O. Andersonianum*, and flowers of *O. crispum apiatum*.

To Messrs. F. Sander & Co., St. Albans, for an extensive collection of fine varieties of *Dendrobium Phalænopsis Schröderianum*, *Cypripedium Rothschildianum*, *Odontoglossums*, *Lycastes*, &c.

Silver Banksian Medal.

To Messrs. B. S. Williams & Son, Upper Holloway, N., for a group, among which were several fine specimens of *Cœlogyne cristata hololeuca*, varieties of *Vanda tricolor*, *Oncidium Papilio*, *Angræcum modestum*, &c.

Bronze Banksian Medal.

To Messrs. W. L. Lewis & Co., Southgate, N., for a group, amongst which was *Vanda tricolor*, Lewis's var., a fine form with closely spotted flowers.

First Class Certificate.

To *Dendrobium superbum Huttoni* (votes, unanimous), from

Sir Trevor Lawrence, Bart., Burford, Dorking (gr. Mr. W. H. White). Flowers white, with a dark purple base to the lip (fig. 10).

To *Dendrobium* × *Euryalus* (*D.* × *Ainsworthii* ♀ × *D. nobile* ♂) (votes, unanimous), from Messrs. Jas. Veitch & Sons, King's Road, Chelsea. A decided improvement on any of the *D.* × *Ainsworthii* class; the flowers tinted, of a bright rose-purple.

To *Chysis bractescens* (votes, unanimous), from W. C.

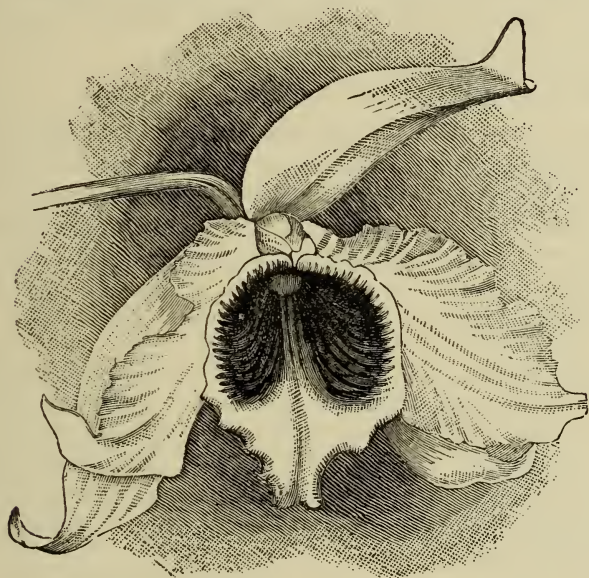


FIG. 10.—*DENDROBIUM SUPEBBUM HUTTONI*.

Walker, Esq., Winchmore Hill, N. (gr. Mr. G. Cragg), who showed a fine specimen of the pure white old species.

Award of Merit.

To *Odontoglossum* × *elegans*, Sander's var. (votes, unanimous), from Messrs. F. Sander & Co., St. Albans. A very distinct form of this supposed natural hybrid of *O. cirrosum*, with larger flowers than the original, and with a clearer cream-white ground.

To *Odontoglossum luteo-purpureum sceptrum* var. (votes, unanimous), from W. Thompson, Esq., Walton Grange, Stone.

Staffordshire (gr. Mr. W. Stevens). A form in which the markings were dark chocolate colour.

Botanical Certificate.

To *Eria æridostachya* (votes, unanimous), from Sir Trevor Lawrence, Bart. (gr. Mr. W. H. White). A graceful evergreen species, with three pendent racemes of flowers from each of the two leading pseudo-bulbs.

To *Camaridium Lawrenceanum* (votes, unanimous), from Sir Trevor Lawrence, Bart. A slender scandent species, with numerous flowers of the size and form of those of *Maxillaria variabilis*, but flesh-white and purple in colour.

Cultural Commendation.

To Sir John Edwards-Moss, Bart., Thamesfield, Henley-on-Thames (gr. Mr. Gilbert Hatch), for a noble specimen of *Cypripedium caudatum* with eighteen flowers (votes, unanimous).

To Norman C. Cookson, Esq., Wylam-on-Tyne (gr. Mr. W. Murray), for a fine example of *Dendrobium* × *Venus* (votes, unanimous).

Other Exhibits.

Thos. Statter, Esq., Stand Hall, Whitefield, Manchester (gr. Mr. R. Johnson), showed *Dendrobium* × *Rolfiæ* (*D. nobile* ♀ × *D. primulinum* ♂) and *Odontoglossum lanceans Jenningsianum*.

W. Thompson, Esq., Walton Grange, Stone, Staffordshire (gr. Mr. W. Stevens), staged *Odontoglossum triumphans* var., *O. cuspidatum*, *O. odoratum*, *O. lyroglossum*, and *Dendrobium Wardianum purpurascens*.

R. I. Measures, Esq., Camberwell (gr. Mr. Chapman), sent *Masdevallia* × *Hincksiana*, and a collection of twelve varieties of *Vanda tricolor*.

F. Wigan, Esq., Clare Lawn, East Sheen (gr. Mr. W. H. Young), exhibited the pure white *Phalænopsis Schilleriana Vestalis*.

The Right Hon. Lord Rothschild, Tring Park, Tring (gr. Mr. E. Hill), showed a splendid inflorescence of a fine form of *Cattleya guttata Prinzii*.

E. G. Wrigley, Esq., Victoria House, Dukinfield (gr. Mr. G. Tibbles), sent *Dendrobium* × *melanodiscus*, *D.* × *Rolfiæ*, and the fine light *Dendrobium nobile Cypheri*.

E. D. Shuttleworth & Co., Peckham Rye, sent for name *Odontoglossum lanceans Andersonianum*.

J. T. Bennett-Poë, Esq., Holmwood, Cheshunt, showed *Cypripedium Boxalli superbum*.

Messrs. Linden, l'Horticulture Internationale, Parc Leopold, Brussels, showed a twin-flowered inflorescence of *Cypripedium* × *Lucienianum*.

Messrs. Hugh Low & Co., Clapton, showed fine forms of *Miltonia Roezlii*, *Cattleya Trianae*, and the small hybrid *Cypripedium* × "J. Gurney Fowler" (*C. Godefroyae* ♀ × *C. barbatum* ♂).

Messrs. Jas. Veitch & Sons staged *Epidendrum* × *Endresio-Wallisii*, *Cypripedium* × *Adrastus*, *Phalænopsis* × *F. L. Ames*, and *Cypripedium eburneo-Lowianum*.

E. Ashworth, Esq., Harefield Hall, Wilmslow, Cheshire (gr. Mr. H. Holbrook), showed a small plant of *Dendrobium Findlayanum*, Ashworth's var., with nearly white flowers, having a pale yellow disc on the lip.

Mrs. Haselfoot, Moor Hill, Southampton (gr. Mr. N. Blandford), sent a finely flowered pseudo-bulb of *Dendrobium Wardianum*.

ORCHID COMMITTEE, APRIL 10, 1894.

Sir TREVOR LAWRENCE, Bart., President of the Royal Horticultural Society, in the Chair, and fourteen members present.

Awards Recommended:—

Silver Flora Medal.

To Baron Schröder, The Dell, Egham (gr. Mr. H. Ballantine), for a fine collection of cut spikes of rare Orchids, including *Odontoglossum elegans*, *O. Leeanum*, *O. Hinnus*, the blue-tinted *Cattleya Lawrenceana Vinckei*, the rose *C. Lawrenceanum concolor*, *Cypripedium Lawrenceanum Hyeaanum*, &c.

To Sir Trevor Lawrence, Bart., Burford (gr. Mr. W. H. White), for a group of rare and extremely well-cultivated Orchids, among which were *Trichopilia lepida*; two fine forms of *Cattleya Lawrenceana*, with six and seven flowers on a spike respectively; the fine *Eulophiella Elisabethæ*, with two spikes; *Masdevallia*

Arminii, with scores of pretty purple flowers, &c. (votes, unanimous).

To Messrs. F. Sander & Co., St. Albans, for a large and interesting collection of Orchids. The central plant was *Oncidium ampliatum majus*, with seven very large spikes, and with it were forms of *Cattleya Schröderæ*, *Oncidium superbiens* (of which *O. s.* Sander's var. was a very fine dark form), *Dendrobiums*, &c.

To Messrs. Hugh Low & Co., Clapton, N.E., for a group of Orchids, in which the *Dendrobium thyrsoiflorum* were remarkable. Other rare plants were *Phalænopsis Schilleriano-gloriosa*, *Aërides Hughii*, and a *Dendrobium* with cream-white flowers, like those of *D. tortile*, and named *D. Hildebrandtii*.

Silver Banksian Medal.

To R. I. Measures, Esq., Cambridge Lodge, Camberwell (gr. Mr. H. Chapman), for an interesting group of Orchids, including many botanical curiosities.

To Messrs. W. L. Lewis & Co., Chase Side, Southgate, N., for a showy group of Orchids.

To Mr. P. McArthur, Maida Vale, W., for a collection in which *Cypripedium Chamberlainianum excellens* and *Dendrobium Wardianum candidum* were specially noteworthy.

To Messrs. Collins and Collins, Cumberland Park, Willesden Junction, for a group of *Cymbidium Lowianum* and *Cypripedium hirsutissimum*.

First Class Certificate.

To *Eulophiella Elisabethæ* (votes, unanimous), from Sir Trevor Lawrence, Bart., Burford, Dorking (gr. Mr. W. H. White). This was the first appearance of this fine Orchid in Great Britain. The plant had two spikes of wax-like white flowers tinged with purple at the back.

To *Dendrobium Falconeri giganteum* (votes, unanimous), from Sir Trevor Lawrence, Bart. (gr. Mr. W. H. White). This has the large flowers and the knotted stems of the type, but the latter are stouter, and not branched.

To *Dendrobium crepidatum*, Tring Park var. (votes, unanimous), from the Right Hon. Lord Rothschild, Tring Park, Tring (gr. Mr. E. Hill). A noble form, with rose-purple tinted flowers,

nearly as large again as the type, which itself is a rare plant in gardens, that which usually represents it being the smaller *D. c. labello-glabra*.

To *Cypripedium* × *Winifred Hollington* (*C. niveum* ♀ × *C. ciliolare* ♂) (votes, unanimous), from A. J. Hollington, Esq., Forty Hill, Enfield (gr. Mr. Ayling). This fine hybrid is the



FIG. 11.—*CYPRIPEDIUM* × *WINIFRED HOLLINGTON*. (*Journal of Horticulture*.)

reverse cross to *C. × Aylingi*, which it resembles, but is much larger, and the whole of the surface of the flower is dotted and tinged with rich vinous purple (fig. 11).

To *Brassia Lawrenceana* (votes, unanimous), from R. I. Measures, Esq., Cambridge Lodge, Camberwell (gr. Mr. H. Chapman). This, though one of the oldest, is still one of the finest species.



FIG. 12.—EPIDENDRUM ELLISI. (*Journal of Horticulture.*)

To *Epidendrum Ellisi* (Rolfe), n. sp. (votes, unanimous), from Welbore S. Ellis, Esq., Hazelbourne, Dorking (gr. Mr. Master-son). A pretty reddish-purple species of the *E. evectum* class (fig. 12).

Award of Merit.

To *Oncidium Lucasianum* (votes, unanimous), from Messrs. F. Sander & Co., St. Albans; and C. J. Lucas, Esq., Warnham Court, Horsham (gr. Mr. Duncan). A pretty dwarf species with large bright yellow flowers, some of which are curiously rudimentary.

To *Dendrobium* × *Alcippe* (*D. lituiflorum Freemanii* ♀ × *D. Wardianum* ♂) (votes, unanimous), from Messrs. J. Veitch & Sons, King's Road, Chelsea. Flowers formed like those of *D. × micans*, but tinted with rose colour.

To *Dendrobium capillipes* (votes, unanimous), from Sir Trevor Lawrence, Bart., Burford, Dorking (gr. Mr. W. H. White). A pretty dwarf yellow-flowered species.

To *Cypripedium Mastersianum* (votes, unanimous), from R. I. Measures, Esq., Cambridge Lodge, Camberwell (gr. Mr. H. Chapman). A well-known but rare and distinct species.

To *Aërides Hughii* (votes, unanimous), from Messrs. Hugh Low & Co., Clapton. A distinct small-growing species, with white and rose-crimson flowers, shaped like those of *A. maculosum*.

To *Lælia Boothiana* (votes, unanimous), from Welbore S. Ellis, Esq., Hazelbourne, Dorking (gr. Mr. Masterson).

To *Lycaste cruenta* (votes, unanimous), from A. H. Smee, Esq., The Grange, Wallington (gr. Mr. Cummins).

To *Odontoglossum Andersonianum*, Crawshay's var. (votes, unanimous), from De B. Crawshay, Esq., Rosefield, Sevenoaks (gr. Mr. S. Cooke). One of the finest of its class.

Botanical Certificate.

To *Satyrium coriifolium*, yellow (votes, unanimous), from F. W. Moore, Esq., Royal Botanic Gardens, Glasnevin, Dublin.

To *Satyrium princeps*, crimson (votes, unanimous), from F. W. Moore, Esq., Glasnevin.

To *Masdevallia torta* (votes, unanimous), from F. W. Moore, Esq., Glasnevin.

To *Eria floribunda* (votes, unanimous), from Sir Trevor Lawrence, Bart., Burford (gr. Mr. W. H. White).

To *Leptotes bicolor* (votes, unanimous), from Sir Trevor Lawrence, Bart. (gr. Mr. W. H. White).

To *Masdevallia simula* (votes, unanimous), from R. I. Measures, Esq., Cambridge Lodge, Camberwell (gr. Mr. Chapman).

To *Pleurothallis ornata* (votes, unanimous), from R. I. Measures, Esq. (gr. Mr. Chapman).

To *Dendrobium Johannis* (votes, unanimous), from S. G. Lutwyche, Esq., Eden Park, Beckenham (gr. Mr. T. Paterson).

Cultural Commendation.

To Sir Trevor Lawrence, Bart., for *Epidendrum atropurpureum* (macrochilum) album and *Masdevallia Arminii*.

To Norman C. Cookson, Esq., Oakwood, Wylam-on-Tyne (gr. Mr. W. Murray), for a splendid plant of the true *Cœlogyne ocellata maxima* with nine spikes.

Other Exhibits.

Messrs. James Veitch & Sons showed *Cymbidium* × *eburneo-Lowianum*, *Lælio-Cattleya* × *Pallas* (*L. crispa* ♀ × *C. Dowiana* ♂), *Chysis* × *Chelsoni* (*C. bractescens* ♀ × *C. aurea*), *Cypripedium* × *Merops* (*C. ciliolare* ♀ × *C. Druryi* ♂), *Dendrobium* × *Wardiano-japonicum*, and a grand form of *Epidendrum* × *O'Brienianum*, with vermilion-crimson flowers.

A. H. Smee, Esq., The Grange, Wallington (gr. Mr. Cummins), sent *Cyrtopodium Andersonianum* var. and flowers of *Sobralia macrantha*.

The Duke of Marlborough, Blenheim, Woodstock (gr. Mr. Whillans), showed two forms of *Cypripedium Rothschildianum*.

Thomas Statter, Esq., Stand Hall, Whitefield, Manchester (gr. Mr. R. Johnson), showed a fine form of *Odontoglossum Wilckeanum*.

Earl Cowper, Panshanger, Hertford (gr. Mr. J. Fitt), sent *Odontoglossum Wilckeanum* and *O. crispum*.

Mr. Head, from the gardens of the Crystal Palace Company, brought a fine form of *Cattleya labiata Mendelii*, with four flowers.

S. G. Lutwyche, Esq., Beckenham, staged *Cypripedium*

Rothschildianum, Dendrobium crassinode album, Odontoglossum cirrosum, and Cypripedium \times Schröderæ splendens.

F. W. Moore, Esq., Royal Botanic Gardens, Glasnevin, Dublin, showed Oncidium monachicum and Cœlogyne lactea.

ORCHID COMMITTEE, APRIL 24, 1894.

DR. MAXWELL T. MASTERS, F.R.S., in the Chair, and fifteen members present.

Awards Recommended :—

Silver Banksian Medal.

To Messrs. F. Sander & Co., St. Albans, for a group of Orchids, including Cœlogyne Swainiana, n. sp., Phaius Oweniæ, Oncidium Lucasianum, Lælia \times Oweniæ, L. purpurata, Aërides Houlettianum, Cattleyas, Dendrobiums, &c.

To Messrs. B. S. Williams & Son, Upper Holloway, N., for a group of Orchids, chiefly composed of showy well-known species. Among others were Lælio-Cattleya \times Schilleriana, Ada aurantiaca, Epidendrum radicans, varieties of Vanda tricolor, V. teres Andersoni, Odontoglossum Edwardii, and most of the other showy Odontoglossums.

Bronze Banksian Medal.

To R. I. Measures, Esq., Cambridge Lodge, Camberwell (gr. Mr. H. J. Chapman), for a select collection of Orchids, including Angræcum sesquipedale, A. Sanderianum, Aëranthus Leonis, Lælia euspatha, Cypripedium Rothschildianum, C. \times Merops (C. Druryi ♀ \times C. ciliolare ♂), and other rare Cypripediums and Cattleyas.

To Mr. P. McArthur, The London Nurseries, Maida Vale, W., for a group of Orchids, in which were Cypripedium Chamberlainianum giganteum, a fine C. Haynaldianum (with divided lower sepals) a noble form of C. Curtisii, a very fine Oncidium macranthum, Cattleya Acklandiæ, &c.

To Messrs. W. L. Lewis & Co., Chase Side, Southgate, N., for a fine selection of Orchids, among which were a very varied collection of forms of Cattleya labiata of the various sections, Vandas, Odontoglossum crispum aureum maculatum, &c.

To Messrs. Hugh Low & Co., Clapton, for a group of Orchids—Cattleyas, Dendrobiums, Lælias, Odontoglossums, and Cypripediums.

To Walter C. Walker, Esq., Percy Lodge, Winchmore Hill (gr. Mr. G. Cragg), for a group of Orchids, among which were *Broughtonia sanguinea*, *Epidendrum glumaceum*, and *Cattleya citrina*.

First Class Certificate.

To *Cypripedium* × *Annie Measures* (*C. bellatulum* ♀ ×



FIG. 13.—*CYPRIPEDIUM* × *ANNIE MEASURES*. (*Journal o Horticulture*.)

C. Dayanum ♂) (votes, unanimous), from R. I. Measures, Esq., Cambridge Lodge, Camberwell (gr. Mr. H. J. Chapman). The flower resembled somewhat that of *C. × Marshallianum*, and was cream-white dotted in a uniform manner with purple dots, the face of the lip being rose-purple (fig. 13).

To *Lælia cinnabarina* (votes, unanimous), from W. M.

Appleton, Esq., Tyn-y-Coed, Weston-super-Mare, who showed a grand rich orange-scarlet form of the type with three spikes.

Award of Merit.

To *Cœlogyne Swaniana*, n. sp. (votes, unanimous), from Messrs. F. Sander & Co., St. Albans. A distinct species, with thin quadrangular pseudo-bulbs, and flowers resembling those of *C. Massangeana*, and borne in the same pendulous manner.

To *Phaius Oweniæ* (votes, 11 for, 4 against), from Messrs. F. Sander & Co., St. Albans. The plant exhibited was of the *P. bicolor* class, but having the sepals and petals brownish purple, the base of the lip chrome-yellow, and its front rich purple.

To *Miltonia flavescens* (*Cyrtochilum stellatum*) (votes, 8 for, 5 against), from Messrs. B. S. Williams & Son, Holloway.

To *Odontoglossum crispum Lowianum* (votes, unanimous), from Messrs. Hugh Low & Co., Clapton. A singular and perhaps abnormal form, with slightly concave, plain-edged petals, the margins of which are broadly banded with cinnamon colour. Some doubt was expressed as to the constancy of the variation.

To *Odontoglossum crispum Florrie* (votes, unanimous), from De B. Crawshay, Esq., Rosefield, Sevenoaks (gr. Mr. S. Cooke). A large blush-white form with heavy brown blotches.

To *Phalænopsis tetraspis* (votes, unanimous), from the Director, Royal Gardens, Kew.

To *Oncidium sessile* (votes, 8 for, 5 against), from W. L. Lewis & Co., Chase Side, Southgate, N.

To *Dendrobium nobile*, Hackbridge var. (votes, unanimous), from A. H. Smee, Esq., The Grange, Hackbridge (gr. Mr. Cummins). A very fine light form of the *D. nobile pendulum* class.

Botanical Certificate.

To *Cirrhopetalum Collettii* (votes, unanimous), from the Director, Royal Gardens, Kew.

To *Bulbophyllum saurocephalum*, Reich. (Philippines) (votes, unanimous), from Mr. James O'Brien, Harrow-on-the-Hill.

To *Octomeria diaphana* (votes, unanimous), from R. I. Measures, Esq., Camberwell (gr. Mr. H. J. Chapman).

Cultural Commendation.

To De B. Crawshay, Esq., Rosefield, Sevenoaks (gr. Mr. S. Cooke), for *Odontoglossums*.

Other Exhibits.

Baron Schröder, The Dell, Egham (gr. Mr. H. Ballantine), exhibited fine cut spikes of rare Orchids, including *Lælio-Cattleya* × *Digbyana-Mossiaë*, *L.C.* × *bella*, six forms of *Vanda tricolor*, *Odontoglossum Schillerianum*, *O. cuspidatum xanthoglossum*, and other *Odontoglossums*; *Cymbidium Devonianum*, *Cypripedium Lawrenceanum Hyeenum*, *Maxillaria Kimballiana*, &c.

Walter Cobb, Esq., Dulcote, Tunbridge Wells (gr. Mr. Howes), showed a collection of Orchids, comprising *Maxillaria Sanderiana*, *Odontoglossum Humeanum*, *O. crispum*, *O. luteo-purpureum*, *O. Andersonianum*, &c.

Messrs. Jas. Veitch & Sons, King's Road, Chelsea, showed *Cypripedium* × *Eurylochus* (*C. ciliolare* ♀ × *C. hirsutissimum* ♂), *Lælia* × *Latona* (*L. cinnabarina* ♀ × *L. purpurata* ♂), *Chysis* × *Chelsoni*, *Dendrobium* × *Aspasia*, and *Dendrobium glomeratum*.

A. H. Smee, Esq., The Grange, Wallington, sent *Dendrobium linguæforme*, *Phaius grandifolius*, and *Dendrobium nobile*.

F. Wigan, Esq., Clare Lawn, East Sheen (gr. Mr. W. H. Young), showed *Cattleya Mossiaë Reineckiana*, and other forms.

The Hon. Mrs. Foley, Fordingbridge, Hants (gr. Mr. Moxham), sent *Dendrobium tortile*, *Cattleya labiata Schröderæ*, *C. l. Mendelii*, *C. l. Trianæ*, and *Dendrobium Pierardii*.

C. W. Fincken, Esq., Hoyland Hall, Barnsley (gr. Mr. J. Milburn), sent *Cattleya Mendelii Finckeniaë*.

J. Gurney Fowler, Esq., Glebelands, Woodford, showed *Cattleya Lawrenceana* and two forms of *Dendrobium nobile*.

The Rev. F. D. Horner, Lowfields, Burton-in-Lonsdale, sent *Cattleya labiata delicata*.

W. M. Appleton, Esq., Tyn-y-Coed, Weston-super-Mare, showed two very fine varieties of *Cattleya Skinnerii* and *Cypripedium Chamberlainianum*.

Mrs. Barton, Caldby Manor, West Kirby, Cheshire, showed *Dendrobium nobile pulcherrimum*.

J. T. Bennett-Poë, Esq., Holmwood, Cheshunt, sent *Cypripedium Boxalli superbum*.

ORCHID COMMITTEE, MAY 8, 1894.

HARRY J. VEITCH, Esq., in the Chair, and twelve members present.

Awards Recommended:—

First Class Certificate.

To *Dendrobium nobile Schröderianum* (votes, unanimous), from Baron Schröder, The Dell, Egham (gr. Mr. H. Ballantine). A fine white variety, with dark purple base to the lip, and pale pink tips to the petals.

To *Dendrobium* × *dellense* (*D. nobile Schröderianum* ♀ × *D.*



FIG. 14.—*DENDROBIUM* × *DELLENSE*. (*Journal of Horticulture*.)

× *splendidissimum* ♂) (votes, unanimous), from Baron Schröder. The flowers resembled those of the variety of *D. × Ainsworthii* known as *D. × splendidissimum*. In colour white, with a very faint sulphur-yellow tint; the disc of the labellum purplish maroon (fig. 14).

To *Cypripedium* × *macrochilum giganteum* (*C. caudatum Lindenii* ♀ × *C. × grande* ♂) (votes, unanimous), from Messrs.

Jas. Veitch & Sons, King's Road, Chelsea, S.W. A very bold and striking hybrid; the best of its section. The flowers were similar to *C. × macrochilum*, but much larger, the labellum being large and well-rounded. Sepals cream-white, striped and netted with green; the petals 18 inches long, white striped with green at the base, the remainder claret colour; lip ivory-white, tinged with green and brown, the infolded side lobes spotted and tinged with purple.

To *Vanda suavis* (votes, unanimous), from De Barri Crawshay, Esq., Rosefield, Sevenoaks (gr. Mr. S. Cooke). The variety shown was like a better form of *V. s.* Veitch's var., and was named "Rosefield var."

Award of Merit.

To *Coryanthes Wolfii* (Lehmann) (votes, unanimous), from F. W. Moore, Esq., Royal Botanic Gardens, Glasnevin, Dublin. This is a most extraordinary and distinct species, easily recognisable by its slightly concave, solid hood. The colour was orange, spotted with purplish crimson.

To *Odontoglossum crispum apiculatum* (votes, unanimous), from Messrs. Charlesworth & Co., Heaton, Bradford. A form near to *O. c. Bonnyanum*, with a large irregular brown blotch on each sepal.

To *Disa × langleyensis* (*D. racemosa* ♀ × *D. tripetaloides* ♂) (votes, unanimous), from Messrs. Jas. Veitch & Sons, Chelsea. A very elegant hybrid, with flowers shaped like those of *D. tripetaloides*, but larger; pale rose, with crimson-spotted galea.

To *Dendrobium cretaceum* (votes, 4 for, 1 against), from Sir Trevor Lawrence, Bart., Burford (gr. Mr. White). A well-known species introduced from Moulmein in 1846.

To *Odontoglossum Pescatorei*, Hazelbourne var. (votes, unanimous), from Welbore S. Ellis, Esq., Hazelbourne, Dorking (gr. Mr. Masterson). A pretty variety with large flowers, the inner halves of the petals uniformly spotted with purple.

To *Odontoglossum triumphans* "Lionel Crawshay" (votes, unanimous), from De Barri Crawshay, Esq., Rosefield, Sevenoaks. Flowers large and very broad in the segments; the labellum shield-shaped, and exhibiting a tendency to expand at the apex; colour yellow, with broad bands of cinnamon-brown.

Botanical Certificate.

To *Catasetum Rodigasianum* var. *tenebrosum* (votes, unanimous), from Sir Trevor Lawrence, Bart., Burford, Dorking (gr. Mr. W. H. White).

To *Microstylis Scotii* (votes, 8 for, 2 against), from Messrs. W. L. Lewis & Co., Chase Side, Southgate.

To *Bifrenaria inodora* (votes, 8 for), from R. I. Measures, Esq., Cambridge Lodge, Camberwell (gr. Mr. H. Chapman).

Cultural Commendation.

To Walter C. Walker, Esq., Percy Lodge, Winchmore Hill (gr. Mr. Geo. Cragg), for a comparatively small plant of *Cattleya Lawrenceana*, with twenty-one flowers (votes, unanimous).

Other Exhibits.

De Barri Crawshay, Esq., Rosefield, Sevenoaks (gr. Mr. S. Cooke), exhibited an interesting series of varieties of *Odontoglossum triumphans* and other species.

Messrs. T. Cripps & Sons, Tunbridge Wells, sent a small group of Orchids, comprising *Dendrobium Dearei*, with four spikes, and fine varieties of *Cypripedium ciliolare*, *C. Lawrenceanum*, *C. Argus*, *C. Druryii*, and *C. caudatum*.

Sir Trevor Lawrence, Bart., Burford, Dorking (gr. Mr. W. H. White), showed *Cynoches ventricosum*, *Masdevallia caudata Shuttleworthii* with twenty flowers, *M. c. xanthocorys*, *Lælia purpurata*, *L. p. nobilior*, and *Cattleya Mossiæ Wagerenii*.

Joseph Broome, Esq., Sunny Hill, Llandudno (gr. Mr. Shill), sent a very fine and richly coloured *Cattleya Mossiæ conspicua*.

R. I. Measures, Esq., Cambridge Lodge, Camberwell, exhibited the rare *Masdevallia marginella*.

F. W. Moore, Esq., Royal Botanic Gardens, Glasnevin, Dublin, sent three distinct forms of *Masdevallia ignea*, and *Oncidium roraimense*.

Messrs. W. L. Lewis & Co., Southgate, showed *Zygopetalum (Warszewiczella) Wailesianum*.

A. H. Smee, Esq., The Grange, Wallington (gr. Mr. Cummins), sent *Phaius Sanderianus*.

Henry Weetman, Esq., The Hawthorns, Little Haywood, Stafford, also showed a flower of a good form of *Phaius Sanderianus*, *Dendrobium Devonianum candidulum*, and *D. Dalhousieanum*.

Messrs. Charlesworth & Co., Heaton, Bradford, sent *Odontoglossum polyxanthum* and other *Odontoglossums*.

T. P. W. Butt, Esq., Arle Court, Cheltenham (gr. Mr. G. W. Marsh), showed a very fine branched spike of *Oncidium Marshallianum*.

Messrs. B. S. Williams & Son, Upper Holloway, N., staged *Odontoglossum citrosmum Owenianum*, with rose-coloured flowers, the petals edged with white, and *Odontoglossum triumphans atratum*.

Messrs. James Veitch & Sons, Chelsea, showed *Masdevallia* × *caudato-Estradæ* and *M.* × *Parlatoreana* (*M. Barlaëana* ♀ × *M. Veitchiana* ♂), the latter being almost as handsome as *M. Veitchiana*, and interesting on account of its having been imported in the first place by Messrs. Veitch as a natural hybrid, and afterwards verified by home-raised seedlings.

TEMPLE SHOW.

ORCHID COMMITTEE, MAY 23, 1894.

HARRY J. VEITCH, Esq., in the Chair, and seventeen members present.

Awards Recommended:—

First Class Certificate.

To *Cypripedium callosum* var. *Sanderæ* (votes, unanimous), from Messrs. F. Sander & Co., St. Albans. This beautiful variety is to *C. callosum* what *C. Lawrenceanum Hyeantum* is to *C. Lawrenceanum*. Its beautiful flowers are white and emerald green (fig. 15).

To *Odontoglossum crispum excelsius* (votes, unanimous), from Baron Schröder, The Dell, Egham (gr. Mr. H. Ballantine). A fine flower, with a slight trace of *O. Wilckeanum*. White, heavily blotched on the sepals, and marked with a large number of smaller spots on the petals.

To *Odontoglossum crispum Wolstenholmiæ* (votes, unanimous), from Baron Schröder. Flowers large; white, tinged with purple, and with a large cluster of brown blotches in the centre of each segment.

To *Odontoglossum crispum xanthotes* (votes, unanimous), from Baron Schröder. A very singular form, with white flowers bearing a yellow blotch on the lip, and a few almost invisible yellow marks on the petals.

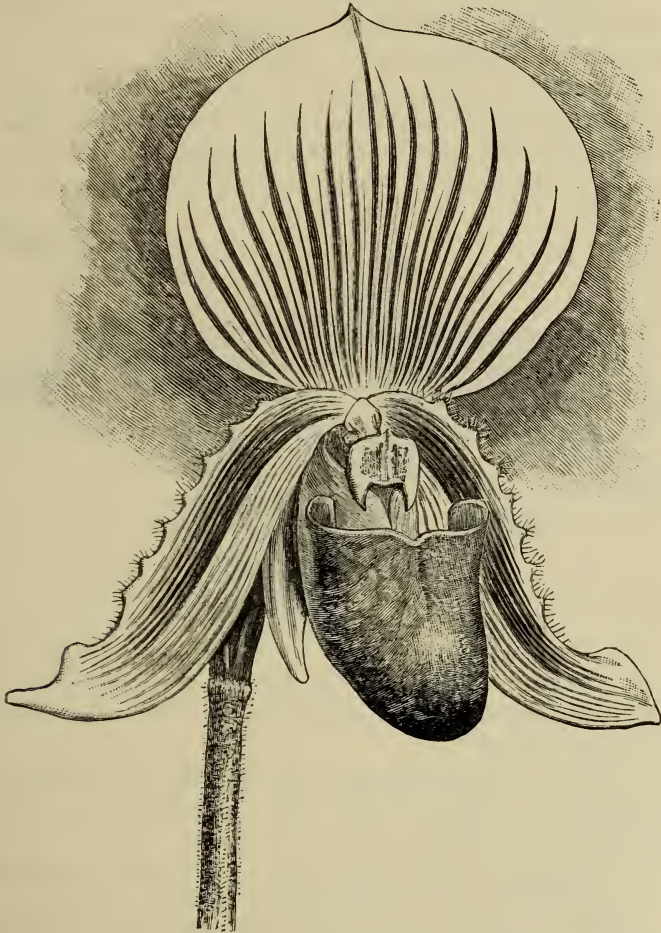


FIG. 15.—*CYPRIPEDIUM CALLOSUM SANDERÆ.* (*Journal of Horticulture.*)

To *Odontoglossum crispum Rex* (votes, unanimous), from Baron Schröder. This is one of the finest of heavily spotted forms of *O. crispum*.

To *Odontoglossum triumphans*, The Dell variety (votes, unanimous), from Baron Schröder. A fine variety, with fewer brown bars to the segments than is usual with the species, and having the inner halves of the petals white.

To *Odontoglossum Andersonianum superbum* (votes, unanimous), from Baron Schröder. A richly spotted variety, with large broad-petalled flowers.

To *Phaius* × *Owenianus* (*P. Humblotii* ♀ × *P. Oweniæ* ♂) (votes, unanimous), from Messrs. F. Sander & Co., St. Albans. The flowers of this hybrid are in form much like those of *P. Humblotii*. Sepals and petals whitish, tinged with purple-

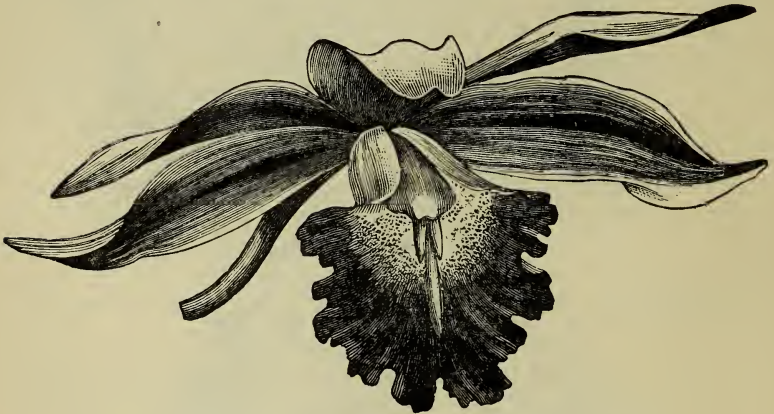


FIG. 16.—PHAIUS × OWENIANUS. (*Journal of Horticulture*.)

brown; lip crimson-purple, with orange base and three orange-coloured keels (fig. 16).

To *Cattleya labiata Mossiæ imperialis* (votes, unanimous), from Messrs. F. Sander & Co. An extraordinarily large and richly coloured variety.

To *Cypripedium bellatulum*, Hardy's var. (votes, unanimous), from Fred. Hardy, Esq., Tyntesfield, Ashton-on-Mersey (gr. Mr. Stafford). A fine variety, with pale yellow flowers spotted with chocolate colour.

To *Odontoglossum Vuylstekeanum* (votes, unanimous), from Mons. Jules Hye-Leysen, Coupure, Ghent. The plant had three spikes of white and yellow flowers, nearest in appearance to those of *O. luteo-purpureum Masereelianum*.

Award of Merit.

To *Odontoglossum crispum* Massangeanum (votes, unanimous), from Messrs. F. Sander & Co., St. Albans. A fine blotched variety.

To *Oncidium Marshallianum* superbum, from Walter C. Walker, Esq., Percy Lodge, Winchmore Hill (gr. Mr. Geo. Cragg).

To *Odontoglossum Andersonianum*, Young's var. (votes, unanimous), from Chas. Young, Esq., The Thorns, Sevenoaks (gr. Mr. Ryder). A fine variety, with flowers almost as large as *D. crispum*, and prettily spotted.

To *Lælio-Cattleya* × *Frederick Boyle* (*C. labiata* Trianæ ♀ × *Lælia anceps* ♂) (votes, 1 against), from Messrs. F. Sander & Co., St. Albans. This extraordinary hybrid has flowers equal in size to those of a good *L. anceps*, but broader in the segments. The lip, in the decided division of the front from the side lobes, markedly shows the influence of the pollen parent. The flowers are white, with crimson lines and tinge on the front lobe of the lip.

To *Lælio-Cattleya* × *Aylingi* (votes, unanimous), from Messrs. F. Sander & Co. A close ally of *L.-C. eximea*; parentage not recorded.

To *Cattleya Mendelii picta* (votes, unanimous), from Messrs. F. Sander & Co. A beautiful light variety of the *C. M. Morgania* section.

To *Cattleya Mendelii Lewisii* (votes, unanimous), from Messrs. W. L. Lewis & Co., Southgate, N. A very large and richly coloured form.

To *Cattleya Mendelii* "Mrs. De B. Crawshay" (votes, unanimous), from De B. Crawshay, Esq., Rosefield, Sevenoaks (gr. Mr. S. Cooke). A fine form, with carmine-crimson front to the lip.

To *Odontoglossum crispum* Capartianum (votes, 6 for, 2 against), from Mons. A. A. Peeters, St. Gilles, Brussels. A rather small form, with flowers tinged and blotched with purple.

To *Odontoglossum crispum* Trianæ (votes, unanimous), from H. Shaw, Esq., Ashton-under-Lyne.

Botanical Certificate.

To *Schomburgkia tibicinis* (votes, unanimous), from Walter C. Walker, Esq., Percy Lodge, Winchmore Hill.

Cultural Commendation.

To Baron Schröder, The Dell, Egham (gr. Mr. H. Ballantine), for a magnificent specimen of *Cœlogyne Dayana*, bearing 24 racemes, and an aggregate of 930 blooms (votes, unanimous).

To Fred. Hardy, Esq., Tyntesfield, Ashton-on-Mersey (gr. Mr. T. Stafford), for a noble example of *Lælia purpurata*.

Other Exhibits.

Sir Trevor Lawrence, Bart., Burford, Dorking (gr. Mr. White), staged a magnificent group of Orchids, embracing many new plants.

Baron Schröder, in his magnificent group, showed *Cypripedium Stonei* platytænium and many other rare species.

Messrs. Linden, l'Horticulture Internationale, Parc Léopold, Brussels, showed plants and cut examples of about forty varieties of their fine strain of *Lælia purpurata*, and other Orchids.

W. R. Lee, Esq., Beech Lawn, Audenshaw, Manchester (gr. Mr. Billington), showed *Cypripedium* × *Muriel* Hollington.

R. I. Measures, Esq., Cambridge Lodge, Camberwell (gr. Mr. H. Chapman), showed a cut spike of *Miltonia festiva* under the provisional name *M. Measuresiana*, and *Miltonia vexillaria*, Cambridge Lodge var., in which the petals have markings as in the lip.

Special Awards.

Silver Cup.

To Mr. James Cypher, Cheltenham, for a group containing some fine *Lælias*, *Miltonias*, and *Cattleyas*.

To Messrs. B. S. Williams & Son, Upper Holloway, for a rich collection, in which were noticeable specimens of *Cymbidium Lowianum*, *Vanda tricolor*, *Trichopilias*, *Odontoglossums*, *Oncidium Marshallianum*, and *O. concolor*.

To Messrs. F. Sander & Co., St. Albans, for a remarkable group, in which the new *Cypripedium callosum* Sanderæ, *Phaius* × *Owenianus*, *Lælio-Cattleya* × *Frederick* Boyle, and many other good things attracted notice.

To Messrs. H. Low & Co., Clapton, for a large collection rich in Cattleyas, Lælias, Miltonias, Zygopetalums, Masdevallias, and Odontoglossums.

To Welbore Ellis, Esq., Dorking, for imported forms of Odontoglossum crispum, some good Miltonias, and Cymbidium tigrinum.

To Messrs. Charlesworth, Shuttleworth & Co., Heaton, Bradford, for an extensive display of Lælia purpurata, Cattleyas, Grammatophyllum Fenzlianum, Oncidium Marshallianum, &c.

To His Grace the Duke of Northumberland, Syon House, Brentford (gr. Mr. G. Wythes), for some well-grown Vanda teres, Cyrtopodium punctatum, Cymbidium Lowianum, and several Odontoglossums, Oncidiums, and Cattleyas.

To F. Hardy, Esq., Ashton-on-Mersey, for a splendidly grown specimen of Lælia purpurata, his variety of Cypripedium bellatum, a large Cattleya Mossiæ, C. Skinneri, &c.

Silver Gilt Flora Medal.

To Messrs. Lewis & Co., Southgate, for Lælia purpurata and varieties, several Cattleyas, and Cypripediums.

Silver Flora Medal.

To W. C. Walker, Esq., Winchmore Hill, for fine Cattleyas, Odontoglossums, Phalænopses, Sobralia macrantha, &c.

To Mr. P. McArthur, Maida Vale, for a group in which were a grand Lælia tenebrosa, and several Cypripediums, Cattleyas, Oncidium macranthum, and Miltonia vexillaria.

To Messrs. Collins & Collins, Cumberland Park, Willesden, for a group of Cymbidium Lowianum.

Silver Banksian Medal.

To Malcolm S. Cook, Esq., Kingston Hill, for Odontoglossums, Oncidium macranthum, and Epidendrum vitellinum majus.

ORCHID COMMITTEE, JUNE 12, 1894.

HARRY J. VEITCH, Esq., in the Chair, and fourteen members present.

Awards Recommended:—

Silver Flora Medal.

To R. I. Measures, Esq., Cambridge Lodge, Flodden Road, Camberwell (gr. Mr. H. J. Chapman), for an extensive collection



FIG. 17.—ODONTOGLOSSUM CRISPUM BARONESS SCHRÖDER.

of Orchids, including *Miltonia* × *festiva*, *M. vexillaria*, *Masdevallia* × *Gairiana*, *M. × Heathii*, *Cypripedium* × *Harrisianum virescens*, &c.

To De B. Crawshay, Esq., Rosefield, Sevenoaks (gr. Mr. S. Cooke), for a group of varieties of *Odontoglossum crispum*, *Cattleyas*, *Lælia purpurata*, &c.

Silver Banksian Medal.

To Major Joicey, Sunningdale Park, Berks (gr. Mr. F. J. Thorne), for a group of splendidly grown specimens of *Miltonia vexillaria*, *Anguloa Clowesii*, *Dendrobium atro-violaceum*, &c.

To Messrs. W. L. Lewis & Co., Chase Side, Southgate, for a varied and interesting group of Orchids, composed principally of fine forms of *Cattleya labiata Mendelii*, *C. l. Mossiæ*, *C. Warscewiczii*, *Lælia purpurata*, &c.

First Class Certificate.

To *Odontoglossum crispum* "Baroness Schröder" (votes, unanimous), from Baron Schröder, The Dell, Egham (gr. Mr. H. Ballantine). The flowers of this extraordinary variety were almost wholly of a purplish-claret colour, there being only a small white mark at the base of each segment and a very narrow white margin (fig. 17).

To *Odontoglossum crispum grande maculatum* (votes, unanimous), from Baron Schröder. Flowers very large, and with fringed petals; white, with many rather small blotches.

To *Cattleya Mossiæ alba*, Pitt's var. (votes, unanimous), from H. T. Pitt, Esq., Rosslyn, Stoke Newington (gr. Mr. Allons). A very beautiful large pure white flower, with an almost imperceptible purple mark over a small area on the front of the lip.

To *Aërides maculosum Schröderi* (votes, unanimous), from Sir Trevor Lawrence, Bart., Burford, Dorking (gr. Mr. W. H. White). A very fine example of the true plant.

To *Anguloa Clowesii* (votes, unanimous), from Major Joicey, Sunningdale Park, Berkshire (gr. Mr. F. J. Thorne), who showed two splendid examples of this showy old species.

To *Dendrobium Griffithianum Guibertii*, from Messrs. F. Sander & Co., St. Albans.

Award of Merit.

To *Cattleya Mossiæ* "R. H. Measures" (votes, unanimous), from Messrs. F. Sander & Co., St. Albans. Flowers large, blush-white, with a distinct plum-purple blotch on the lip.

To *Odontoglossum crispum* "Florence M. Bovill" (votes, unanimous), from De B. Crawshay, Esq., Rosefield, Seven-

oaks. A distinct purple-tinted form with bright Indian-red blotches.

To *Odontoglossum citrosimum*, Rosefield var. (votes, unanimous), from De B. Crawshay, Esq., Rosefield, Sevenoaks. Flowers large, cream-white with rose labellum.

To *Masdevallia* × *Parlatoreana* (*M. Barlæana* ♀ × *M. Veitchiana* ♂) (votes, 8 for), from Messrs. James Veitch & Sons, Chelsea. Flowers somewhat resembling those of *M. × Chelsoni*.

To *Masdevallia* × *glaphyrantha* (*M. infracta* ♀ × *M. Barlæana* ♂) (votes, unanimous). Flowers formed like the seed-parent, and purple in colour.

To *Masdevallia* × *Asmodia* (*M. Chelsoni* ♀ × *M. Reichenbachiana* [Normani, hort.] ♂) (votes, 7 for). Flowers formed like those of *M. Reichenbachiana*, yellowish, tinged with purple, and with brown tails.

To *Bifrenaria tyrianthina* (votes, unanimous), from Messrs. Linden, l'Horticulture Internationale, Parc Leopold, Brussels. This resembles *B. inodora*, but the flowers are deep purple.

To *Odontoglossum luteo-purpureum sceptrum leopardinum* (votes, unanimous), from W. Thompson, Esq., Stone, Staffordshire (gr. Mr. W. Stevens).

To *Odontoglossum luteo-purpureum sceptrum aureum* (votes, unanimous), from W. Thompson, Esq., Stone, Staffordshire.

To *Odontoglossum Wilckeanum grande* (votes, unanimous), from W. Thompson, Esq., Stone, Staffordshire.

To *Odontoglossum crispum mirabile* (votes, unanimous), from Baron Schröder. Flowers white with huge brown blotches, the very narrow lip being almost entirely brown.

Botanical Certificate.

To *Epidendrum alatum* (votes, unanimous), from Messrs. F. Sander & Co., St. Albans.

To *Masdevallia calura* (votes, unanimous), from R. I. Measures, Esq., Camberwell (gr. Mr. H. J. Chapman).

To *Stelis prolifera* (votes, unanimous), from Sir Trevor Lawrence, Bart.

To *Cypripedium Sargentianum* (votes, 7 for, 3 against), from Thomas Statter, Esq., Stand Hall, Whitefield, Manchester (gr. Mr. R. Johnson). A species closely allied to *C. Lindleyanum* in appearance and habit, with greenish-yellow flowers, veined with red.

To *Epidendrum organense* (votes, unanimous), from Sir Trevor Lawrence, Bart., Burford (gr. Mr. W. H. White). A singular little species, in growth resembling *E. pygmæum*.

To *Bulbophyllum barbigerum* (votes, unanimous), from Sir Trevor Lawrence, Bart.

To *Polystachya Lawrenceana* (Kranzlin) (votes, unanimous), from Sir Trevor Lawrence, Bart. A handsome species from the Upper Zambesi, with whitish flowers and thick pink labellum.

To *Polystachya bulbophylloides* (votes, unanimous), from Sir Trevor Lawrence, Bart. A very small species from Western Africa, with sprays of white flowers.

To *Zygopetalum* (*Promenæa*) *macropterum* (votes, unanimous), from Sir Trevor Lawrence, Bart.

To *Houlletia Landsbergii* (votes, unanimous), from Messrs. Hugh Low & Co., Clapton. Of the declinate, one-flowered class. Flower creamy-yellow, with ivory-white lip.

Cultural Commendation.

To Major Joicey, Sunningdale Park (gr. Mr. F. J. Thorne), for *Miltonia vexillaria* in small pots, and with twelve to sixteen spikes on each.

Other Exhibits.

Messrs. F. Sander & Co., St. Albans, showed a choice collection, in which were the handsome violet and white *Zygopetalum Lehmanni superbum*, the crimson-tipped *Z. Klabochorum*, the new *Phaius* × *Owenianus* (*P. Humblotii* ♀ × *P. Oweniæ* ♂), with its handsome flowers with broad rich claret-crimson lip, many plants of *Oncidium Lanceanum*, a hybrid *Lælio-Cattleya*, &c.

Sir Trevor Lawrence, Bart., Burford, Dorking (gr. Mr. W. H. White), showed *Odontoglossum Pescatorei* "Prince of Orange," *Dendrobium Bensoniæ album*, *Octomeria diaphana* and various other species.

Messrs. James Veitch & Sons, King's Road, Chelsea, showed *Lælio-Cattleya* × *Hippolyta*, *Disa* × *langleyensis*, and a fine specimen of *Dendrobium glomeratum*.

Thomas Statter, Esq., Stand Hall, Whitefield, Manchester (gr. Mr. R. Johnson), sent *Cypripedium* (*Selenipedium*) *Sargentianum* and *Odontoglossum Wilckeanum* var.

W. Thompson, Esq., Walton Grange, Stone, Staffordshire (gr. Mr. W. Stevens), showed *Lælia tenebrosa*, Walton Grange variety, and a small group of *Odontoglossums*.

Welbore S. Ellis, Esq., Hazelbourne, Dorking (gr. Mr. Master-son), showed *Odontoglossum crispum virginale* and other varieties.

R. Brooman-White, Esq., Arddarroch, Garelochhead, N.B., sent flowers of *Odontoglossum crispum*, showing great variation and beauty in colour and spotting,

W. R. Lee, Esq., Beech Lawn, Audenshaw, Manchester (gr. Mr. Billington), sent *Cypripedium Curtisii* ♀ × *C. superbiens* ♂.

F. Wigan, Esq., Clare Lawn, East Sheen (gr. Mr. W. H. Young), showed *Phalænopsis speciosa* and its purple variety "Imperatrix," *Lælia grandis*, varieties of *Cattleya Mendelii*, and *Dendrobium veratrifolium*.

Messrs. Linden, l'Horticulture Internationale, Parc Léopold, Brussels, sent *Lælio-Cattleya* × *Valvassorii* (*L. purpurata* ♀ × *C. labiata Warnerii* ♂), a form of *L.-C.* × *Arnoldiana*, *Lælia purpurata princeps*, *Aërides Houlettianum*, and a fine specimen of *Cochlioda Noezliana*.

J. Forster Alcock, Esq., Berkhamstead, sent for name *Pholidota ventricosa*.

Elijah Ashworth, Esq., Harefield Hall, Wilmslow, Cheshire, showed *Cattleya Mendelii Bluntii*.

Wm. Soper, Esq., 307 Clapham Road, sent *Odontoglossum citrosimum*.

Arnold Witt, Esq., Blomfield Road, Maida Vale, sent *Cypripedium bellatulum*.

J. T. Bennett-Poë, Esq., Holmwood, Cheshunt, showed *Lycaste Deppei*.

W. Jewell, Esq., Bexley, sent *Cattleya Warscewiczii*.

J. T. Holmes, Esq., Beechen Cliff, Bath, sent *Vanda teres* and *Cattleya Mossiæ*.

Messrs. Hugh Low & Co. had a group rich in forms of *Cattleya Mossiæ*, and containing plants of *Cattleya intricata*, *Cypripedium bellatulum*, &c.

ORCHID COMMITTEE, JUNE 26, 1894.

HARRY J. VEITCH, Esq., in the Chair, and eleven members present.

Awards Recommended:—

Silver Banksian Medal.

To Messrs. Charlesworth, Shuttleworth & Co., Heaton,

Bradford, for a group of showy Orchids, composed principally of varieties of *Lælia tenebrosa*, *Oncidium macranthum*, *Miltonia vexillaria*, &c.

To Messrs. Hugh Low & Co., Clapton, for a group of *Cattleya Mossiæ* and other *Cattleyas*, varieties of *Masdevallia Harryana*, *Cypripediums*, &c.

Bronze Banksian Medal.

To H. T. Pitt, Esq., Rosslyn, Stamford Hill, for a select group of well-grown Orchids.

First Class Certificate.

To *Lælio-Cattleya* × *Canhamiana* var. *alba* (votes, unanimous), from Messrs. James Veitch & Sons, King's Road, Chelsea. This differed from the original in having pure white sepals and petals.

To *Cypripedium* × *Leysenianum* (*C. barbatum* Crossii ♀ × *C. bellatulum* ♂) (votes, unanimous), from Mons. Jules Hye-Leysen, 8 Coupure, Ghent, Belgium. A fine hybrid, with white flowers profusely spotted with dark crimson, and tinged on the outer halves of the petals with rose colour.

Award of Merit.

To *Angræcum Fournierianum* (votes, unanimous), from Messrs. F. Sander & Co., St. Albans. An extraordinary species, with the habit of a small *A. eburneum*, and with ascending, wiry flower-spikes, furnished with a dozen or more white flowers, each two inches across. The broad shovel-shaped lip, with three points in front, and with short funnel-shaped spur, is quite characteristic.

To *Pescatorea Klabochozum excellens* (votes, unanimous), from Messrs. F. Sander & Co., St. Albans. The large white flowers of this variety had the outer halves of a violet-purple tint.

To *Masdevallia* × *Cassiope* (*M. triangularis* ♀ × *M. Harryana* ♂) (votes, unanimous), from Captain Hincks, Terrace House, Richmond, Yorks. The flowers were formed like those of *M. triangularis*, but of a dull rose and yellow colour.

To *Lælia tenebrosa* *Pittiana* (votes, unanimous), from H. T. Pitt, Esq., Rosslyn, Stamford Hill. A distinct form with buff sepals and petals, and white lip with purple lines in the tube.

To *Phaius Sanderianus*, Ralli's var. (votes, unanimous), from P. Ralli, Esq., Ashted Park, Epsom (gr. Mr. G. Hunt). Sepals

and petals yellow, lip large and white. Two other forms were shown for comparison.

To *Masdevallia* × *Kimballiana* (votes, unanimous), from Sydney Courtauld, Esq., Bocking Place, Braintree (gr. Mr. A. Wright). The flowers were in form similar to those of *M. caudata*, but orange colour with mauve veining and tinge.

Botanical Certificate.

To *Cœlogyne odoratissima*, from Sydney Courtauld, Esq., Bocking Place, Braintree.

To *Scaphosepalum* (*Masdevallia*) *gibberosum*, from Sydney Courtauld, Esq.

To *Masdevallia cucullata*, from Sydney Courtauld, Esq.

Cultural Commendation.

To Sydney Courtauld, Esq., Bocking Place, Braintree, for a grand specimen of *Cœlogyne Sanderiana* with five spikes, two of them fully expanded; for a profusely flowered *Masdevallia rosea*; and for a fine example of *Epidendrum* (*Nanodes*) *Medusæ*.

To T. B. Haywood, Esq., Woodhatch, Reigate (gr. Mr. Salter), for *Miltonia vexillaria* "Daisy Haywood," the largest and best white form; and for an equally good rose-coloured variety.

To Thos. Statter, Esq., Stand Hall, Manchester, for a large specimen of *Lælia tenebrosa*.

Other Exhibits.

Messrs. F. Sander & Co. staged a group of rare Orchids, in which were a large specimen of *Lælio-Cattleya* × *Arnoldiana*, *L.-C. A. superba*, *Cattleya Warscewiczii purpurea*, &c.

Messrs. Jas. Veitch & Sons, King's Road, Chelsea, showed large pans of *Disa* × *langleyensis*, *D.* × *Veitchii*, and *Cypripedium* × *Schröderæ*.

Messrs. Collins & Collins, Willesden, showed a collection of Orchids.

Thos. Statter, Esq., Stand Hall, Whitefield, Manchester (gr. Mr. R. Johnson), showed *Cypripedium Curtisii superbum*, *Lælia purpurata*, and *Cattleya Gaskelliana aurea*.

W. C. Parkes, Esq., Llanberis, Tooting, sent *Phaius bicolor Oweniæ*.

Messrs. W. L. Lewis & Co., Chase Side, Southgate, showed *Cattleya Gaskelliana* "Miss Maud Dowdney," with fine white sepals and petals and white-veined lip.

Messrs. Rothschild, Gunnersbury Park, Acton (gr. Mr. G. Reynolds), exhibited a fine plant of *Cattleya labiata* Warneri.

Mr. H. A. Tracy, Amyand Park Road, Twickenham, sent *Miltonia vexillaria* "Duchess of York," with nearly white flowers.

Arnold Witt, Esq., Blomfield Road, Maida Vale, showed a very thickly spotted *Cypripedium bellatulum*.

S. G. Lutwyche, Esq., Eden Park, Beckenham, showed *Cypripedium Godefroyæ leucocheilum* and *Maxillaria stapelioides*.

The executors of the late Geo. Hardy, Esq., Pickering Lodge, Timperley, Cheshire (gr. Mr. Holmes), showed *Dendrobium Statterianum*, a supposed natural hybrid, with flowers like those of *D. crystallinum*.

Sydney Courtauld, Esq., Bocking Place, Braintree, showed the rare and curious little *Masdevallia O'Brieniana*.

E. Walker, Esq., Leek, sent for name *Odontoglossum Galeottianum*.

F. W. Moore, Esq., Royal Botanic Gardens, Glasnevin, Dublin, sent good spikes of *Aganisia ionoptera* and *Grammatophyllum Micholitzianum*.

J. Gurney Fowler, Esq., Glebelands, South Woodford, Essex (gr. Mr. J. Davis), showed two plants of *Cattleya Mossiæ alba*, and spikes of *C. labiata* Gaskelliana, *C. l. Mendelii*, and *Lælio-Cattleya* × *elegans*.

NARCISSUS COMMITTEE.

MARCH 27, 1894.

J. BENNETT-POË, Esq., in the Chair, and nine members present.

A large number of very interesting hybrid seedlings were sent for inspection by Messrs. James Veitch & Sons, Chelsea. The following were selected as among the best, viz. :—

- i. *Obvallaris* × *Poeticus*, a fine *Ajax* with lemon trumpet.
- ii. *General Gordon* × *Burbidgei*. In the bunch of blossoms resulting from this cross was one flower of very great merit amongst a number of others somewhat less so.
- iii. *Tazetta* Ch. Dickens × *Pallidus Præcox*.

There were many other varieties of *Tazetta* crossed with some form of *Ajax*, but for the most part the individual flowers were so

crowded together on the scape as to deprive them of much of their beauty. The Committee asked to see the ones mentioned above another year, when they hoped that some account of their hardiness and constitution might also be sent.

The Rev. G. H. Engleheart, Appleshaw, Andover, exhibited a number of hybrids :—

i. *Telemonium plenus* × *Poeticus ornatus*, producing a double *Incomparabilis* very similar to the ordinary *Phoenix*.

ii. *Maximus* × *Emperor*, a good flower of rich colour.

iii. *Pyrenean Moschatus* × a yellow *Ajax*. The pod of seed resulting from this cross produced one pure white flower and one self-yellow, but drooping like *Cernuus*.

iv. *Obvallaris* × *Maximus*, a good flower.

v. *Triandrus* × *Ornatus*.

vi. *Moschatus* × *Triandrus*.

vii. *Triandrus* × *Emperor*.

viii. *Triandrus* × *Horsfieldi*.

ix. *Triandrus* × *Corbularia monophylla*.

x. A seedling from self-fertilised *Horsfieldi*, which was exactly like a good form of *Variiformis*.

xi. He also showed a remarkably good white *Ajax* of unknown parentage, with horizontal flowers, the trumpet and perianth opening of the same colour.

Mr. George Cammell, of Brookfield Manor, Heathersage, exhibited a white seedling, which the Committee desired to see again another year.

NARCISSUS COMMITTEE, APRIL 10, 1894.

The Rev. G. H. ENGLEHEART, M.A., in the Chair, and nine members present.

Awards Recommended :—

Silver Flora Medal.

To the Rev. G. H. Engleheart, Appleshaw, Andover, for hybrid and seedling *Narcissi*.

First Class Certificate.

To *Narcissus Ajax* Weardale (votes, unanimous), from Messrs. Barr & Son, Covent Garden. A flower of immense size and substance (fig. 18).

To *Narcissus Incomparabilis* Lulworth (votes, unanimous), from the Rev. G. H. Engleheart. A flower of most exquisite

beauty, said to be a chance seedling found in an orchard at Lulworth. Perianth very pale sulphur, the segments broad and ample, slightly drooping; the cup very large and bell-shaped, of the most glowing orange colour.



FIG. 18.—NARCISSUS AJAX WEARDALE. (*Journal of Horticulture*.)

To *Narcissus Poeticus* Albatross (votes, unanimous), from the Rev. G. H. Engleheart. A fine flower of the *Poeticus* section,

with very large perianth, but of sufficient substance to stand fairly firm.

Award of Merit.

To *Narcissus Ajax* Hodsock's Pride (votes, unanimous), from Miss Mellish, Hodsock Priory, Worksop. A yellow flower of much size and substance.

The Rev. G. H. Engleheart showed *N. Poeticus* Seagull, which the Committee requested to see again next year.

Messrs. Van der School, of Hillegom, Holland, sent a collection of seedlings; those marked 18 and 19 were considered worthy of notice, and the Committee asked to see them again another season.

Messrs. J. Veitch & Sons, Chelsea, again sent a large collection of seedlings similar to those sent to the last meeting. *Apollo* × *Cernuus*, and *Charles Dickens* × *Burbidgei* were very beautiful, and were asked to be sent again next year.

Mr. Normand sent blooms of a yellow *Ajax* found growing in Fifeshire amongst a number of double *Telemonius*. It was exceedingly interesting on account of its probable origin, but was not considered otherwise specially noticeable.

NARCISSUS COMMITTEE, APRIL 24, 1894.

[The Rev. G. H. ENGLEHEART in the Chair, and four members present.]

The Rev. C. Wolley Dod, Edge Hall, Malpas, sent flowers of *N. Bernardi* Philip Hurt, a very beautiful variety with pale yellow perianth and brilliant orange cup. Flowering so late in the season, this magnificent variety will be a great acquisition if it proves of robust constitution, and the Committee requested to see it again, with information on this point, next year.

Mr. Wolley Dod also sent a number of seedlings raised from *Bernardi*, to illustrate its tendency to revert to one or other of its parents *Muticus* and *Poeticus*.

The Rev. G. H. Engleheart exhibited a number of *Poeticus* seedlings resulting from *P. ornatus* fertilised with the pollen of "*Poeticus* of Linnæus." The seedling flowers were of very fine form.

Prizes.

March 13, 1894.—Class 3. Collection of forced Daffodils—Polyanthus excluded. Open. *First Prize*, Barr Silver Medal, to the Rev. S. E. Bourne, Dunstan Vicarage, Lincoln.

March 27, 1894.—Class 3. Collection of Daffodils—Polyanthus excluded. Open. *First Prize*, Barr Silver Medal, to the Rev. S. E. Bourne. *Second Prize*, Barr Small Silver Medal, to Mr. W. J. Grant, Bassaleg, Monmouth. *Third Prize*, Barr Bronze Medal, to Mrs. Fortescue Tynte, Tullow, Co. Carlow.

April 10, 1894.—Class 3. Collection of Daffodils—Polyanthus excluded. Open. *First Prize*, Barr Silver Medal, to the Rev. S. E. Bourne. *Second Prize*, Barr Small Silver Medal, to Dr. Crawford, Lingulden House, Uddington, Lanarkshire. *Third Prize*, Barr Bronze Medal, to Minard Cammell, Esq., Loxwood House, Billingshurst, Sussex.

May 8, 1894.—The Barr Silver Gilt Medal, for the best English-raised Seedling Daffodil shown during the season of 1894, was won by the Rev. G. H. Engleheart, Appleshaw, Andover, with *Narcissus poeticus* "Horace."

THE TEMPLE SHOW.

MAY 23, 24, AND 25, 1894.

By the kind permission of the Treasurer and Masters of the Bench, the Society held its seventh Great Spring Flower Show in the pleasant gardens of the Inner Temple.

The weather, unfortunately, was most unfavourable on the first day, being characteristic rather of January and February than of the end of May. For several hours the rain descended and the winds beat, and were it not for the admirable way in which the paths in the tents were all boarded, the cup of discomfort and depression would have been overflowing.

Notwithstanding this serious drawback, a great number of people visited the Show—no doubt wishing as much as anything else to honour H.R.H. the Duke of York, who had kindly consented to open the Exhibition. At 12.30 punctually, as the band of Her Majesty's Royal Horse Guards (Blues), under the direction of Mr. Charles Godfrey, R.A.Mus., played the "National Anthem," His Royal Highness entered the Gardens by way of the Thames Embankment Gate, accompanied by Sir Francis de Winton and Sir Charles Cust. Among other distinguished visitors may be mentioned the Lord Mayor of London (Sir George R. Tyler, Bart.) and several members of the City Corporation, Baron Schröder, Mr. Joseph Chamberlain, M.P., Mr. Inderwick, Q.C., Mr. Pitt Lewis, Q.C., &c.

The Royal Party was met by the President of the Society, Sir Trevor Lawrence, Bart., and the Vice-Presidents and members of the Council. The opening of the Exhibition was purely formal, no speeches whatever being made. His Royal Highness expressed himself as highly pleased at the marvellous display of plants and flowers, which filled five large tents, and for more than an hour he continued to inspect the exhibits, the President meanwhile answering numerous questions, and indicating objects of exceptional interest.

On the second and third days of the Show the weather was charming, and an idea of the number of visitors may be gained from the following facts. About 6 500 tickets were in use by

Fellows of the Society, and there are strong grounds for believing that most of these were legitimately utilised by at least two or three different persons. So that it may be said that between 13,000 and 19,500 people visited the Show by means of Fellows' tickets. The cash receipts indicate that about 10,000 paid for admission during the three days, so that, roughly speaking, it may be estimated that the Temple Show of 1894 attracted altogether 30,000 visitors, or an average of 10,000 per day. To bear these figures out, we have the fact that only about one person in three or four accepted the catalogue, which was distributed without charge, and of which 10,000 were exhausted several hours before the Exhibition closed.

It is unnecessary—indeed it would be impossible—to dwell here on the high standard of excellence attained by the exhibitors. As on previous occasions, the most noteworthy exhibits were selected for special awards, particulars of which may be seen under the report of the Fruit, Floral, and Orchid Committees for May 23, at pages xxxiv., lxvi., and cxiv. respectively.

BULBOPHYLLUM LEYSIANUM, BURBIDGE.

MR. BURBIDGE, in his paper on "Botanical Exploration in Borneo," mentioned this remarkable *Bulbophyllum* (p. 55), which we could not trace as being described in any botanical or horticultural work at our disposal. He has now kindly supplied the following additional information, in addition to the drawing, which is reproduced in the accompanying woodcut:—

BULBOPHYLLUM LEYSIANUM, Burbidge, sp. nov.—Plant epiphytal, 7 or 8 inches high; pseudobulbs ovoid, tetragonal, 1-1½ inch long. Leaves coriaceous, lanceolate, glossy, 4-8 inches long. Flowers solitary, on scapes 5-7 inches long, and furnished with three or four bracts. Dorsal sepal soft yellow with purple veins, broadly ovate, arching or hooded, with chequered venation. Lateral sepals pinkish, united or connate, with purple lines near the base. Petals whitish with green veins, ovate 3-nerved, prolonged into a thread-like point, tipped with a hairy or pilose glandular apex. Column white, anther green. Lip entire, fleshy, curved, yellow or amber-coloured, densely covered with a velvety pile of a purple-red colour.

Habitat on trees overhanging the river near the ford at Sinaroup village, N.W. Borneo.

This is a very distinct species, the great dorsal sepal being hooded and translucent in a manner reminding one of the hooded pitchers of a *Darlingtonia* or *Sarracenia*. At the first glance there is something suggestive of some South American *Masdevallias* in the general aspect of the plant. The specific name is given in compliment to the Hon. P. Leys, M.B., late Col.-Surgeon of Labuan.—F. W. B.



FIG. 19.—*BULBOPHYLLUM LEYSIANUM*, BURBIDGE.

References to Illustration.—A, Entire plant, natural size; B, ovary, column, and labellum; C, dorsal sepal; D, lateral sepals (connate); E, petal; F, labellum. All slightly enlarged.

A SUBSTITUTE FOR COFFEE.

WE have received the following communication, and also a package of seeds to which it refers :—

Corrientes (Argentine Republic), S. America,

June 25, 1894.

DEAR SIR,

In the belief that it may be of use to the science of Horticulture, I take the liberty to send you the seeds of the *Cassia neglecta*, which we call in this province by the name of "Taperiva."

This plant is very remarkable from an economical point of view. The seeds, when roasted, supply a good coffee, and raw are a good substitute for rice, while its leaves, and also its roots, have much value for medicinal purposes. Infusions prepared from this plant are used to cure tuberculosis, coughing, colic, indigestion, fistula, &c.

You can see by the notice hereto appended the rôle which the cultivation of this plant is likely to play in the industrial world. In my opinion, it will be more profitable to England than growing *Coffea arabica* (Linn.)—(i.) because it is grown more easily, (ii.) because each seed is capable of producing 1,000 others in due course. If England takes up the production of this plant (the "Taperiva"), she will have the credit of introducing a new coffee, a new article of trade, in the commerce of the world.

The present sample consignment of seeds will prove how true my assertions are, and how useful this product may be rendered by the industry of the Englishman. The notice subjoined is extracted from my "Flora Correntina," published on March 1, 1890, in an illustrated weekly magazine of Buenos Ayres, to which paper I am a contributor, thanks to its editors, Messrs. Gacke & Castro.

I hope you may be induced to publish the notice I send you ; and if so, I shall have much pleasure in sending you others, some on botanical, some on ornithological subjects, in case the flora of this country is not well known to you.

I remain, yours faithfully,

NICOLAS ROJAS ACOSTA.

TAPERIVA, OR COFFEA BONPLANDEA.

(*Cassia neglecta*.)

An annual plant, inter-tropical, South American ; found in the province of Corrientes in the wild state. Supplies a beverage similar

to coffee. Was discovered by Mr. Bonpland, naturalist, and hence called *Coffea Bonplandea*, in honour of the discoverer.

This leguminous plant grows in sandy or clayey soils which are not too marshy ; it usually attains a height of one metre. The root is straight, the stalk smooth, cylindrical, and adorned with large petioles, furnished with stipules at the base, and having compound leaves. The flowers are axillary and of a deep yellow colour. The calyx consists of five sepals, the corolla of five petals. There are ten stamens, of which four are sterile and six fertile, all having thick filaments. The fruit is contained in a unilocular, bivalvate, and polyspermatous case. The plant blooms from March to November, but suffers from cold weather, for which reason it is difficult to cultivate it out of doors at that season. It is well worth growing in a systematic manner for the sake of the seeds, which when roasted yield a good coffee. An infusion made from the leaves is supposed to be a remedy for toothache, and the roots are a cure for fistula. The seeds produce a good coffee fit for exportation when grown on a large scale. The flowers are also useful for dyeing purposes ; they yield a yellow dye, which can be used in a similar way to the "Verdolaga," or *Portulaca oleracea*.

Among all the leguminous plants which we have described few compare with this in respect to the quantity of seeds ; one will yield more than 600 per annum !

Its importance is derived from the beverage yielded by the seeds, and this should recommend it to the attention of agriculturists. Hitherto it has remained very far from playing its proper part in the economy of the world.

To ensure the improvement in the quality and abundance of the fruit it is necessary to grow this plant on scientific lines. An additional luxuriance will be the outcome of serious attention to the nature of the soil, which should be sweet and of good substance. A dry atmosphere is dangerous to this plant.

BOOKS FOR THE LIBRARY.

THE NATURAL HISTORY OF PLANTS. (London, Glasgow, and Dublin : Blackie & Son.)

Most people will agree that it is by no means an easy task to investigate every phase of plant life, and at the same time to give to the world a scientifically correct and comprehensive description of the marvels that exist throughout the vegetable kingdom, from the most simple to the most complex forms.

Such a herculean task, however, has been courageously undertaken and satisfactorily accomplished by Prof. Anton Kerner von Marilaun, of the University of Vienna ; and an English edition of it is now, we are glad to say, appearing, published by Messrs. Blackie & Son in sixteen monthly parts. Sufficient guarantee of the importance and utility of the work lies in the fact that the translation has been undertaken by Dr. F. W. Oliver, Quain Professor of Botany in the University of London, with the assistance of Miss Busk, B.Sc., and Miss Ewart, B.Sc.

In the original, Professor Kerner calls his book "Pflanzenleben," but the English title, "Natural History of Plants," adopted by Prof. Oliver is extremely appropriate, as the author really surveys with Darwinian precision every form of plant life, beginning with the simplest, and gradually yet swiftly initiating the student into the deeper mysteries of vegetable life, which forms such a fascinating study for gardeners and botanists alike. Indeed, Professor Kerner himself says that he aimed at writing "a book not only for specialists and scholars, but also for the many," and he has undoubtedly succeeded. After studying his subject for a quarter of a century, and bringing to bear upon it his great knowledge, experience, and skill, he has produced a work as scientifically accurate as it is charmingly written. It is no small compliment to say that while dealing with a most technical subject the author avoids technical language, and by the use of simple words imparts his knowledge in a manner which savours more of romance than reality, taking for his motto the text, 'Prove all things ; hold fast that which is good.'

After noticing the various views held by ancient writers in regard to plants, and having traced the development of botanical science, the author tells us all about plants in their varied natural surroundings, how they obtain food under all sorts of conditions, how they grow, and build themselves up, adapting themselves to the force of circumstances, reproducing their species, and then dying.

The contrast between animals and plants of the higher orders is

very marked, but there are stages in which it is not possible to strike a dividing line between the two, so clearly do they resemble each other in construction and habits, proving that everything material in the world—perhaps in the universe—is related, and that the forms assumed are the result of a marvellous foresight on the part of the Creator, who has arranged everything so wondrously and so mysteriously. This will be felt as the reader devours page after page of Professor Kerner's book. The very fact that man has been gifted with the ingenuity to discover means of finding out the wonders of plant life shows what the possibilities of future discoveries may be. But man must not imagine that his ingenuity is self-evolved; it evidently comes from a Higher source than self, and should be used with care. Professor Kerner tells us that the Dutch philosopher Swammerdam was so impressed with what he discovered by means of the microscope, that he almost lost his reason, having come to the belief that he was prying into secrets which were not meant for the gaze of mortals. He accordingly destroyed his notes, concluding that further researches into the inner working of plants were sacrilegious.

Besides the simplicity of the language, the work is further enhanced in value by about 1,000 beautiful engravings and sixteen coloured plates, which impart not only brightness to the pages, but are themselves of great scientific value.

A BIOGRAPHICAL INDEX OF BRITISH AND IRISH BOTANISTS. (London: West, Newman & Co.)

To the botanist or to the practical gardener of literary tastes this remarkable "Index" will be of great value. It is the result of four years' labour on the parts of Mr. James Britten, F.L.S., and Prof. Boulger, F.L.S., and gives information concerning as many as 1,825 British and Irish botanists and gardeners who have passed away. To give an idea of the amount of research made in producing the "Index" it is sufficient to note that we find recorded in it the age, place of birth, death and burial of almost every one noticed, together with a brief indication of their social position or occupation (especially in the cases of artisan botanists and of professional collectors), as well as the chief University degrees or other titles or offices held. References are also numerous to their literary contributions in recognised botanical or horticultural papers, and numerous other well-authenticated minutiae are given.

In glancing through the names—which it is needless, perhaps, to say are arranged in alphabetical order—it is pleasant to note how many eminent men have been connected in one way or another with the Royal Horticultural Society. Considerable space, for instance, is devoted to John Wedgwood, who suggested the formation of the

Society and was its first Treasurer ; to Thomas Andrew Knight, who was elected second President in 1811, and reigned—if we may use the term—for twenty-seven years ; to Sir Joseph Banks, a large portrait of whom by T. Phillips, R. A., at present hangs in the Council Room, and whose house at Spring Grove, Isleworth, has only recently been pulled down to make way for a stately mansion built by another Fellow of the Society and staunch lover of horticulture—Mr. Andrew Pears ; to Richard Anthony Salisbury, who was the first Secretary after the Society had been incorporated by Royal Charter in 1809, but in reality the second, the Rev. Mr. Cleeves being the first appointed Secretary to the Society. Mr. Salisbury was a busy botanical author, and his name is commemorated in that beautiful Conifer known as the “Maidenhair” tree—*Salisburia adiantifolia*, a name, however, which, we are sorry to say, has had to give way to the less expressive one of *Ginkgo biloba*. Joseph Sabine (1770–1837), Dr. Lindley (1799–1865), and Andrew Murray (1812–78) also receive full notices. Dr. Lindley, it may be remarked, after passing as an assistant through Sir Joseph Banks’ library, occupied the post of garden-clerk at Chiswick Gardens, and afterwards that of Assistant Secretary to the Society. Mr. Murray was the author of a work entitled “The Book of the Royal Horticultural Society” in addition to those mentioned in the “Index.”

The collectors of the Society—David Douglas (1789–1834), George Don (1798–1856), John Forbes (1798–1823), John Damper Parks (1822), John Potts (1822), James McRae (1823–30), and John Reeves (whose *Wistaria* is still at Chiswick)—are all referred to, but we notice that the place and date of Potts’ death is not recorded. He died at Chiswick on October 5, 1822, having returned from a short trip to China and the East Indies, where his constitution was shattered. The name of Theodor Hartweg, however, is omitted from the “Index,” perhaps purposely, as he was a foreigner, although we find Dillenius of Darmstadt (1687–1747) referred to. Anyway, the plants collected by Hartweg for the Society during his travels in Mexico, Guatemala, Peru, and California from 1836 onwards are referred to under Mr. Geo. Bentham of “*Genera Plantarum*” fame—“*Plantæ Hartwegianæ*, 1857.”

An interesting feature about Messrs. Britten and Boulger’s “Index” is the fact that it covers a period of about 350 years, which gives us an average of less than six notable botanists or gardeners for each year. John Gerard, whose “Herball” is well known, seems to be the earliest man noted, having been born at Nantwich, Cheshire, in 1545; he died at London 1612. Next we find Wm. Copland (1556–1569), who wrote a “Boke of the Properties of Herbes”; Richard Corbet (*alias* Poynter), who flourished as a nurseryman at Twickenham in 1597; John Parkinson (1567–1650), the King’s herbalist, and author

of "Paradisus Terrestris," &c.; and Hugh Morgan, who had a botanical garden, was apothecary to Queen Elizabeth, and introduced, among other plants, *Clematis Viticella*.

We have said enough to show the scope and value of such a book as the "Biographical Index of British and Irish Botanists," and the authors are to be congratulated on having produced a work which is in reality a great historical boon to everyone engaged in horticulture or botanical pursuits.

THE ORCHID GROWER'S MANUAL. 7th Edition. (Published by the Author.)

When the late Mr. B. S. Williams published his little treatise of 108 pages on Orchids forty-two years ago he probably never dreamed that the work would grow to the dimensions which it has now reached in the seventh edition. The character of this work is so well known throughout the Orchid world, through previous editions, that it is almost unnecessary to dilate upon the merits of the new edition. Suffice it to say that it is a bulky tome of 796 pages, beautifully printed, and well illustrated with more than 300 woodcuts of various sizes. Over seventy pages are devoted to the culture and treatment of Orchids in general, and then follow descriptions of what may be roughly estimated at about 3,000 species and varieties of Orchids which are more or less well known in cultivation. The authority for each name is given, and, in addition to the native country, numerous references to other botanical and horticultural works are given. The present edition has been completed by Mr. Henry Williams, F.L.S., F.R.H.S., with the assistance of Mr. F. Gude, Mr. R. A. Rolfe, and Mr. W. H. Gower, F.R.H.S. A melancholy fact in connection with the publication is the recent death of Mr. Gower, who has for many years past been a well-known figure in Orchid circles, as well as a prolific writer on these interesting plants.

THE AMATEUR ORCHID CULTIVATOR'S GUIDE-BOOK. (Liverpool: Blake and Mackenzie.)

Mr. H. A. Burberry, F.R.H.S., gardener to the Right Hon. Joseph Chamberlain, M.P., has sent us his little treatise entitled "The Amateur Orchid Cultivator's Guide-Book," in which he sets forth, chiefly for the benefit of those who have an inclination to become Orchid growers, the experience which he has gained during eighteen years of practical work among Orchids. Coming from one who knows his subject so well, it would be unwise to ignore the sound advice given in the course of this little book of 144 pages. Mr. Burberry aims at teaching us how to grow Orchids successfully, that is so that they will be a source of pleasure and gratification, instead of vexation and disappointment. He has obviously treated his subject from the practical

gardener's point of view, giving advice as to heating, shading, stoking, ventilation, manures, protection, insect pests and remedies—in fact, he has described the whole routine of Orchid growing, and that is saying not a little, in addition to which he gives a few hints as to the best kinds of houses in which to grow them, with lists of the varieties best adapted to be treated as warm, cool, or intermediate-house plants. The work is illustrated with fifteen process and wood blocks, but we could wish that the references to them had been somewhat nearer, or that the names had been printed underneath. Those amateurs who are always asking such questions as what the temperature of a “cool” or “intermediate” Orchid-house should be, or who wish to grow only a few of the choicest and most satisfactory kinds, will find ample information in Mr. Burberry's book.

THE ART OF PREPARING VEGETABLES FOR THE TABLE. (London : Hamilton, Adams & Co.)

When Mr. Iggulden delivered a lecture on “Winter Vegetables” before the Fellows of this Society in January 1892 (*vide R.H.S. Journal*, vol. xv. p. 73) he called attention to the unsatisfactory way in which vegetables were frequently cooked for table, and intimated that in this respect we had much to learn from our Continental neighbours—particularly the French. To render vegetables palatable it is only necessary to insure their being *properly* cooked. Doubtless there are many who are well acquainted with the culinary art, but for those who are not we can recommend Messrs. Sutton & Sons' handy little book, which gives all the information required to cook as many as fifty-two different kinds of vegetables. The directions are so clear and simple that, if followed, even a school-girl ought to be able to properly cook anything from an Artichoke to a Vegetable Marrow. “Vegetables in general,” say the authors, “need to be cooked quickly and thoroughly, and to be eaten as soon as possible after cooking is completed. . . . All vegetables and other garden produce should be as fresh as possible . . . and early morning is the right time generally to fill the basket for the supply of the house during the day. . . . The practice of allowing vegetables to lie soaking in water for a whole morning tends directly to their injury.” It is further pointed out that between boiling and “stewing” there is a vast difference, which should be thoroughly understood. “To serve a dish of greens of any kind with a beautiful colour, a fresh appetising fragrance, and a flavour that shall gratify all palates there must be a little briskness in the cooking.” For the sake of convenience the different kinds are arranged alphabetically, so that the would-be inquirer shall waste as little time as possible in looking up the information, which is of a thoroughly sound and practical nature.

EXTRACTS FROM THE PROCEEDINGS
OF THE
ROYAL HORTICULTURAL SOCIETY.

GENERAL MEETING.

JULY 10, 1894.

Dr. MAXWELL T. MASTERS, F.R.S., in the Chair.

Fellows elected (6).—Lady Fitzhardinge, Titus Kime, W. N. G. Lance, R. Stacey, Duchess of Wellington, W. F. Whitmore.

Mr. John W. Singer gave a lecture on "Cactaceous Plants." (See page 70.)

SPECIAL GENERAL MEETING.

JULY 24, 1894.

Sir TREVOR LAWRENCE, Bart., in the Chair.

The Assistant-Secretary read an advertisement published in the *Times* on July 14, convening the meeting at 2.30 at the Society's offices, 117 Victoria Street.

The CHAIRMAN, in opening the meeting, said the Council took action in proposing a new bye-law for life compositions, under existing bye-laws 15 and 39. He therefore proposed that any Fellow wishing to commute his annual subscription might do so by making one payment of 40 guineas, in lieu of a £4. 4s. annual subscription; of 25 guineas, in lieu of £2. 2s. annual subscription; or of 15 guineas, in lieu of £1. 1s. annual subscription, such commutation entitling the Fellow for life to all the privileges of the corresponding annual subscription.

Mr. GEO. BUNYARD seconded the proposal.

Surgeon-Major INCE, while heartily approving of the action of the Council, proposed as an amendment that in the case of £1. 1s. annual subscribers the life composition should be £10. 10s. inste of £15. 15s.

There being no seconder to the amendment, the original resolution was put to the meeting and carried.

The following rider, proposed by Mr. GEO. GORDON and seconded by Mr. SHEA, was also adopted, viz.: "That it be an instruction to the Treasurer of the Society that all monies paid as commutations of annual subscriptions be invested, and the interest only of such monies be dealt with as part of the annual revenue of the Society."

A vote of thanks to the Chairman closed the meeting.

GENERAL MEETING.

JULY 24, 1894.

Dr. MORRIS in the Chair.

Fellows elected (15).—W. A. Bilney, Miss E. Bullen, J. N. Evans, Mrs. B. Ficklin, Geo. Fletcher, Mrs. A. J. Howard, H. S. James, F. Knight, Miss H. Lamport, Chas. F. Lloyd, Carl B. Luffmann, Miss E. E. Parry, Mrs. W. Thursby, P. E. Wallis, Rev. Dr. Warre.

Associate (1).—Mr. May.

The Assistant-Secretary read a paper by Mr. J. Backhouse, of York, on "Filmy Ferns." (See p. 79.)

GENERAL MEETING.

AUGUST 14, 1894.

Mr. JAMES DOUGLAS in the Chair.

Fellows elected (8).—Mrs. Berkeley, W. J. Coote, E. Dammann, J. H. Dugdale, J.P., S. C. Rose, William Stevens, W. B. Williams, M.B., Mrs. E. F. Wise.

Society affiliated (1).—Hertford Horticultural Society.

A paper on "Fruit Culture in France," by Mons. Chas. Baltet, was read by the Assistant-Secretary.

GENERAL MEETING.

AUGUST 28, 1894.

Sir ALEXANDER J. ARBUTHNOT, K.C.S.I., in the Chair.

Fellows elected (4).—Hon. Thos. Playford, Mrs. Squarey, G. W. E. Russell, F. G. Wakeling.

Mr. Malcolm Dunn gave a lecture on "The Relations between Gardeners and their Employers." (See p. 86.)

GENERAL MEETING.

SEPTEMBER 11, 1894.

Dr. MAXWELL T. MASTERS, F.R.S., in the Chair.

Fellows elected (5).—A. Pettigrew, A. D. Hall, E. Crump, E. J. Wickenden, Sir F. W. Carden, Bart.

An interesting lecture on "Lord Bute's Vineyards" was given by Mr. A. Pettigrew. (See p. 95.)

GENERAL MEETING.

OCTOBER 9, 1894.

Mr. JAMES DOUGLAS in the Chair.

Fellows elected (14).—Alexander Basile, Duchess of Bedford, H. C. Daine, F. J. Fletcher, Mr. Gulzow, Percy J. Lancaster, Henry Moor, Stephen Spooner, W. Stopher, E. T. Tuck, Mrs. White, W. R. Wilbraham, Miss Wilkinson, Henry C. Board.

Society affiliated (1).—Warlingham Cottage Garden Society.

A lecture was given by Mr. E. H. Woodall on "How to Popularise Orchid-growing." (See p. 104.)

GENERAL MEETING.

OCTOBER 23, 1894.

Mr. GEO. BUNYARD in the Chair.

Fellows elected (11).—James K. Allen, J. Bradshaw, Alfred Clark, M. A. Goldschmidt, Mrs. Goldschmidt, K. Hazeldine, Mrs. Haselgrove, Mrs. O. Neill, Mrs. F. Philipps, J. Trower, Lt.-Col. Arthur P. Vivian, C.B.

Society affiliated (1).—Union of Worcestershire Workmen's Club and Institute.

A lecture on the "Origin of Common Vegetables and their Value as Food" was given by the Rev. Professor G. Henslow, M.A. (See p. 113.)

GENERAL MEETING.

NOVEMBER 13, 1894.

Sir ALEXANDER J. ARBUTHNOT, K.C.S.I., in the Chair.

Fellows elected (14).—Leonard Barron, Henry Berwick, Frank N. Best, W. E. Bisset, Richard Edwards, W. J. Empson, W. Farr, Mrs. W. S. Gilbert, David Ireland, A. Kirk, Mrs. S. Miller, W. J. Stucky, Geo. S. Tebbutt, J. O. Wardley.

Mr. C. E. Shea gave a lecture on Chrysanthemums. (See p. 128.)

GENERAL MEETING.

NOVEMBER 27, 1894.

Mr. CHAS. E. SHEA in the Chair.

Fellows elected (13).—Godfrey Boulton, Mrs. Arthur Fanshawe, James Glass, Arthur Johnson, Chas. E. Legge, R. Gerrard Mann, Miss Alice Margetson, Alex. Mortimer, W. C. Mountain, Chas. E. Orfeur, A. Sammons, R. K. Toogood, F. G. Waterer.

A paper on the "Principles of Judging at Shows" was read by Mr. James Douglas. (See p. 134.)

GENERAL MEETING.

DECEMBER 11, 1894.

SIR ALEXANDER J. ARBUTHNOT, K.C.S.I., in the Chair.

Fellows elected (13).—Chas. S. Brayne, Rev. E. Dean, Lt.-Gen. Stanley de B. Edwards, Geo. McIntosh Fleming, F. S. Fowler, Mrs. Rose Johnson, Richard Lye, Harold E. Moore, F.S.I., Earl of Morley, J. Cavendish Orred, H. W. Potts, Chas. W. Richardson.

SCIENTIFIC COMMITTEE.

JULY 10, 1894.

Dr. D. MORRIS, C.M.G., in the Chair, and six members present.

Calochortus vars.—Mr. Wilson exhibited specimens remarkable for their fine growth and varieties of colouring. They were *C. venustus purpurascens*, *C. v. roseus*, and a pure white form. References to descriptions and figures of *C. venustus*, *Benth.*, a native of California, will be found in Baker's "Revision of the Genera and Species of Tulipeæ," Journ. Lin. Soc. xiv. p. 302. Mr. Wilson observed that this species was drawn by Mrs. Duffield about twenty-five years ago, and reproduced in the *Garden*. It is also figured in Trans. Hort. Soc. ii. (1) [1835], t. 15, fig. 3. Mr. Baker places *Calochortus* as the sixth and last genus of the tribe Tulipeæ, enumerating twenty-one species from Mexico and Western North America.

Sugar Cane diseased.—Mr. Blandford reported on specimens received from Barbadoes. They were badly diseased with the fungus *Trichosphæria sacchari*, and in some cases bored by the beetle *Sphenophorus*. This disease is as yet only known to occur in Mauritius, Java, and Barbadoes. Dr. Morris observed that it first appeared in Barbadoes and was called the "rind" disease; it then occurred in the roots in Java, being thought to be distinct from the former; but the two forms will probably prove to be one and the same. A summary of the nature of the disease is contained in a letter to the Colonial Office, *Kew Bulletin*, June 1894, pp. 175, 176.

Photos of Malta.—Mr. Henslow exhibited some photographs illustrative of different features of Malta, including cultivated areas, uncultivated hill-tops, &c., and ancient river valleys known as “wieds.” The only trees in cultivation in the fields are Carobs, Figs, and *Opuntia Ficus indica*, of which last there are four varieties—the “blood,” the “white,” the “seedless,” and the “yellow.”

Oxalis cernua, Thunb.—He also showed specimens of this ubiquitous and so-called by the Maltese “English weed,” introduced by Father Giacinto from the Cape in 1806. It is remarkable for its prolific multiplication by bulbils, as it never sets seed in the northern hemisphere, the “short-styled” form being the only form known. It has elongated slender rhizomes with rod-like aquiferous appendages, by means of which it can climb up among the loose stones of the walls, or descend to great depths among the rubble. A further account of the distribution of this plant throughout the Mediterranean region, having originated in Malta, will be found in the “Proc. Lin. Soc.,” 1893, p. 31.

Centaurea spathulata, Zeraph, 1827 (*C. crassifolia*, Bert, 1829).—Mr. Henslow also brought a living plant in flower of this remarkable plant, which is the only truly indigenous species known to Malta. It has entire spathulate fleshy leaves, and heads of rose-coloured florets. It is found in the valley known as “Wied Babu,” in Malta, and also in Gozo, growing in the cracks of the rocks.

SCIENTIFIC COMMITTEE, JULY 24, 1894.

Dr. M. T. MASTERS in the Chair, and three members present.

Photographs.—Dr. Masters exhibited photos of the “Lily Pond” at Trellissiek, Truro, on the property of C. D. Gilbert, Esq., showing great quantities of *Richardia æthiopica* bordering the pond, together with Nuphar. Large clumps of *Gunnera manicata* and a fringe of tall-growing *Primula japonica* occur on the higher ground. Another view illustrated fine masses of *Benthamia fragifera* in flower.

Carnation Sports.—He also showed several varieties of colours

in Carnations (flaked, self, &c.), the flowers having been all gathered from one and the same seedling plant.

Poppy, Monstrous.—He also showed a drawing by Mr. G. W. Smith of a field Poppy, in which two normal flower-buds had issued from the axils of opposite petals.

Vine diseased.—He also showed a fragment of a bunch which was described as being of an extraordinary size, the flowers of which were aggregated into minute woolly balls. The petals remain closed, but without having any stamens or pistil within them. The hairs (ribbon-like and twisted, resembling cotton hair) grow mainly from the margins of the petals. It has been suggested that it is caused by a phytoptus; but, as no insect or fungus is present, Mr. Henslow observed that it may be the result of atrophy of the essential organs, accompanied by an excess of hair as a compensatory process, according to a theory of M. Mer.

Gentiana acaulis, diseased.—Dr. Morris exhibited a specimen, and observed that if it be sprayed with Condy's fluid at an early period the fungus may be kept in check; but large masses must be burnt if they are badly attacked, as the disease is due to *Puccinia Gentianæ*, and if the plant is not destroyed the resting spores will get into the soil and reproduce the disease in the following year.

Products of the Banana.—Dr. Morris also exhibited a collection of various products obtained from the Banana, exhibited by the "Stanley Syndicate" at the Universal Exhibition at Antwerp, 1894. Mr. Stanley had called attention to the great value of this fruit in his "In Darkest Africa," and the investigation was carried out by Mr. Hartogh, engineer at Amsterdam, to discover for what uses the Banana was available. Its chief value lies in the great quantity of starch (80 per cent. of the dried pulp); hence it proved to be a very good source of spirit, as "the quality of the alcohol may be considered good." It was found to be especially available for the manufacture of glucose, while the meal mixed with one-third ordinary wheat flower makes a very nourishing material for bread, cakes, &c. Among other uses, gruel, puddings, marmalade, syrup, &c., may be mentioned; while the dried peel, and flour of the peel, would be useful for fattening pigs. Lastly, the fibre can be used for paper and string. Persons desiring to have more ample information, or who would like to take part in the proceedings of the Stanley Syndicate, can address themselves to the latter, Avenue Copcs 24, The Hague.

SCIENTIFIC COMMITTEE, OCTOBER 23, 1894.

Dr. M. T. MASTERS in the Chair, and three members present.

Coniferae.—Dr. Masters exhibited a series of cones and branches of various trees received from the late Conference. They included very fine specimens of the cones of *Abies cephalonica*, *A. magnifica*, *Cedrus Deodara*, which rarely fruits in this country, *Abies Nordmanniana*, *Abies Veitchii*, remarkable for developing the bracts under cultivation, *Abies ajanensis*, and *Pinus Pindrow*. There was also a portion of a side branch of a fine plant of *Thuja gigantea*, nearly four inches in diameter, to show the grain of the wood. The tree itself was twenty-five years old, 58 feet high, and measured at 3 feet from the ground 4 feet 6 inches in circumference, or about 18 inches in diameter. It was suggested by Dr. Masters that this tree might form a good substitute for the Larch, which appears to be dying out in many places. The specimens were grown in the gardens of the Marquis of Huntly by Mr. Harding, in those of Viscount Powerscourt by Mr. Crombie, and of Sir P. Murray by Mr. Croucher.

Chionodoxa Bulbs attacked by Aphis.—Mr. McLachlan exhibited some bulbs which had a shrivelled appearance. He observed that he had received specimens from two different sources. On examination there proved to be numerous aphides beneath the outer skin of the bulb. It was named *A. subterranea*, and had not been known before to attack bulbs, though it infests the roots of many plants, to which it does not prove very injurious in this country. It is said to do much harm in France. The aphis, therefore, had probably got to the bulbs from some other fibrous-rooted plant. He regarded the attacks as being serious, because the aphis was protected by the skin of the bulb from insecticides. He suggested the removal of the skin when the bulb was first lifted, and a thorough examination be made. He thought that perhaps if the ground were treated with bisulphide of carbon it might prove effective. It was also suggested that a trial might be made of putting the bulbs under cover, and submitting them to the fumes of tobacco, or where spirits of turpentine could evaporate. Examination should be made to see the bulbs themselves were not injured by the process. Of course, all old skins should be burnt.

Lawns damaged by Fernchafers.—Mr. McLachlan showed the larva of a beetle, *Rhizotrogus solstitialis*, which sometimes does considerable damage to lawns.

Phenological Phenomena.—A communication was received from the Secretary of the Royal Meteorological Society alluding to the appointment of a committee to investigate this subject some twenty years ago, since which period that Society has published records occupying some 350 pages of the Journal, as well as maps and diagrams. It is suggested that the whole subject shall be now reviewed by a fresh conference, in order to consider whether the observations should be continued or otherwise. It was proposed that the Secretary should confer with the Secretary of the Meteorological Society on the matter.

SCIENTIFIC COMMITTEE, NOVEMBER 13, 1894.

A. MICHAEL, Esq., F.L.S., in the Chair, and five members present.

Germinating Black Pepper.—Mr. Henslow exhibited specimens received from Mr. T. Christy. Pepper seeds, being usually collected before they are fully ripened, are often deficient as to their embryos; but the examples shown had germinated well, the large circular cotyledons carrying up the seed into the air. Their tips formed a club-shaped extremity, and were retained within the embryo sac, usually called the amniotic sac. This apparently acts as a “digestive pocket” by secreting a ferment which dissolves the endosperm occupying the greater part of the seed. This is then conveyed into the plant by the included tips of the cotyledons.

Phenological Observations.—The Secretary, having received the reports for 1891, 1892, and 1893 from the Royal Meteorological Society, gave some account of an examination of them. The conclusion arrived at was that the first flowering of plants being noticed by one set of observers, and the meteorological data, temperature, rainfall, and sunshine (hygrometric data wanting) being supplied by other observers elsewhere, any accurate adjustments between the two, in order to trace out local causes and effects, were next to impossible. Again, although “the observers are required under the new regulations [of 1891] to note each year the flowering of the same individual trees and shrubs, and

in the case of herbaceous plants those situated in the same spots" (Report, &c., 1891), yet the observers have not recorded the surrounding conditions respectively to show how far they all agree in any one of the "areas." The problem is thus further complicated, for a plant growing in a warm place may be greatly hastened in flowering as compared with one in a shady and cool place. Again, plant idiosyncrasies vary greatly: thus, of two Horse Chestnuts, one frequently flowers as a regular feature before others growing side by side with it. Hence, without such and other additional data for strict comparisons, the really scientific value of the phenological observations does not seem to be very pronounced. For horticultural purposes their value is practically none. As illustrations of the above remarks there are four stations at Salisbury. In 1891 the Coltsfoot flowered at these places from February 15 to March 7, a range of three weeks; at two places at Clifton the Blackthorn flowered on April 26 and May 5 respectively; but there is no clue whereby one can trace the causes of these and other similar differences.

SCIENTIFIC COMMITTEE, DECEMBER 11, 1894.

Dr. M. T. MASTERS in the Chair, and five members present.

Pines, &c.—Dr. Masters exhibited a series of cones, &c., received from Mr. Herrin, gardener at Dropmore, as follows:—*Pinus Lambertiana*, the Sugar-pine, from California, the cones being 12 inches in length, of which the seeds are edible. *Abies nobilis*, remarkable for the golden-coloured reflexed bracts and the silvery foliage. *Araucaria imbricata*, first and second years' cones. The largest tree at Dropmore was raised (as also the one lately dead at Kew) from seed brought by Mr. Menzies from Chili. *Cupressus Goveniana*, remarkable for its elegant branching with decussating branchlets. *C. macrocarpa*, only growing at Monterey, on the coast of California. It succeeds well on our own coasts, but not inland.

Primula obconica, Cause of Eczema.—Dr. Bonavia described a case of a lady who was three times made seriously ill by handling this plant before it was discovered to be the cause.

It appears to be harmless with most people, but is a serious source of trouble to some persons who touch it.

Nepenthes bicalcarata in Flower.—Dr. Masters showed specimens of the flowers of this plant, which has not been known to blossom in this country before. The inflorescence is an umbel, and not an elongated raceme, as in other species. It was received from the Edinburgh Botanical Gardens.

Tritoma with *Axillary Buds*.—Dr. Masters showed drawings illustrating the unusual occurrence of flower-buds arising near the base of the stem in this plant. It was observed that other plants are occasionally seen to throw out supernumerary flower-buds, as Docks, Nettles, &c., from stems which usually wither and dry up in autumn.

FRUIT COMMITTEE.

JULY 10, 1894.

P. CROWLEY, Esq., in the Chair, and fourteen members present.

Awards Recommended:—

Silver Knightian Medal.

To Mr. O. Thomas, Royal Gardens, Frogmore, for a very large collection of well-grown fruit, consisting of ten varieties of Cherries, fifteen varieties of Strawberries, Walburton Admirable Peaches, one fruit weighing $16\frac{3}{4}$ ozs., and Melons, one named The Duchess having received an Award of Merit on June 6, 1893, under the name of Frogmore Seedling (vol. xvi. p. xxxix).

To Messrs. J. Veitch & Sons, Chelsea, for a collection of 23 varieties of Cherries, grown on small pyramid trees in their nurseries at Langley, the most noticeable varieties being May Duke, Empress Eugénie, Elton, and Black Hawk. Messrs. Veitch also exhibited some very fine Strawberries Gunton Park and Lord Suffield, Raspberry Superlative, Currants, &c.

To Messrs. T. Rivers & Son, Sawbridgeworth, for three large Cherry-trees in pots, laden with magnificent fruit, the varieties being Bigarreau Monstrueuse de Mezel, Noir de Guben, and Bedford Prolific; also several plants of Early Rivers Nectarine, bearing very large fruits.

Other Exhibits.

Messrs. G. Steel & Sons, Ealing, sent a seedling Raspberry named Steel's Victoria, the fruit of good size and quality.

Mr. A. J. Howard, St. Peter's Street, Colchester, sent a large handsome Gooseberry named Red Champion.

Col. Archer Houblon, Newbury (gr. Mr. Ross), sent a fine-looking Melon named Aspirant.

Lord Foley, Esher (gr. Mr. Miller), sent four dishes of Peaches and one of Brown Turkey Figs.

Dr. Emerson, Claringbold, Broadstairs, exhibited Florence Fennel, Carentan Carrot, and other little-known vegetables.

Messrs. Collins & Gabriel, Waterloo Road, S.E., sent a form of Tomato Challenger with variegated foliage.

FRUIT COMMITTEE, AT CHISWICK, JULY 13, 1894.

H. BALDERSON, Esq., in the Chair, and nine members present.

The collection of Tomatos growing in pots were examined.

Highly Commended (× × ×).

Golden Princess, from Messrs. Sutton & Sons.

Comet, from Messrs. Wrench & Sons.

Excelsior, from Mr. J. Corbett, Mulgrave Castle, Whitby.

Early July, from Messrs. Laxton Bros.

Frewer's Incomparable, from Messrs. Nutting.

Laxton's Open Air, from Messrs. Laxton Bros.

Sutton's Dessert, from Messrs. Sutton & Sons.

Golden Nugget, from Messrs. Sutton & Sons.

Commended (× ×).

Sutton's A1, from Messrs. Barr & Sons.

Brooks's Freedom, from Messrs. Barr & Sons.

Tennis Ball, from the R.H.S.

Turner's Prolific, from Mr. C. Turner, Slough.

“Conference” Tomato was considered by the Committee to be still one of the very best, and was again highly commended.

The collection of Peas, numbering eighty-six reputed varieties, was examined.

Highly Commended (× × ×).

The Don, from Mr. Eckford, Wem, Salop.

Critic, from Mr. Eckford, Wem, Salop.

Fertility, from Mr. J. Hughes, Wentworth, Rotherham.
 Maincrop, from Messrs. Veitch & Sons, Chelsea.
 John Howard, from Laxton Bros., Bedford.
 Compacta, from Mr. Maher.

FRUIT COMMITTEE, JULY 24, 1894.

P. CROWLEY, Esq., in the Chair, and thirteen members present.

Awards Recommended:—*Silver Gilt Knightian Medal.*

To Messrs. James Veitch & Sons for a large and very excellent collection of 150 varieties of Gooseberries, several dishes of the earlier Apples and Pears, Currants, &c.

Silver Knightian Medal.

To Messrs. Paul & Son, Waltham Cross, for twelve Apricot-trees in pots, bearing very good crops of fruit.

Silver Banksian Medal.

To Messrs. George Bunyard & Co., Maidstone, for forty-eight dishes of Gooseberries in remarkably fine condition.

To Mr. J. Walker, Thame, Oxon, for a collection of Gooseberries and Walker's Magnum Bonum Currant.

To Messrs. Cannell & Sons, Swanley, for a large collection of Peas and a scarlet-skinned Turnip named Scarlet Six-weeks.

First Class Certificate.

To Pea Maincrop (votes unanimous), a variety which was highly commended at the Chiswick trials, from Messrs. Veitch & Sons, Chelsea, and the Duke of Northumberland, Syon House (gr. Mr. Wythes).

To Strawberry Laxton's Latest of All (votes unanimous), from the Duke of Northumberland, Syon House.

Other Exhibits.

The Duke of Northumberland (gr. Mr. Wythes) sent a new Melon, and Peach Princess of Wales.

Mr. O. Thomas, The Royal Gardens, Frogmore, exhibited three fruits of a handsome white-fleshed Melon, which was unfortunately over-ripe.

Mr. C. F. Millar, Chippenham, sent several sorts of Tomatos.

The Earl of Radnor, Longford Castle (gr. Mr. H. W. Ward), sent Carter's Daisy Pea, a very dwarf and early variety.

Messrs. Sutton & Sons exhibited two very large, handsome Peas named Dwarf Mammoth Marrowfat and Exhibition Marrow.

J. H. Kitson, Esq., Elmet Hall, Leeds (gr. Mr. Bonsall), sent a handsome Tomato named Elmet Favourite.

FRUIT COMMITTEE, AUGUST 14, 1894.

P. CROWLEY, Esq., in the Chair, and fourteen members present.

Awards Recommended:—

Silver Knightian Medal.

To Messrs. Veitch & Sons, Chelsea, for a large and representative collection of fruit, viz. twenty-four dishes of early Apples, six of Pears, ten of Plums, with Gooseberries, Currants, &c.

To Messrs. George Bunyard & Co., Maidstone, for a large collection of fruit, including thirty varieties of Apples, conspicuous amongst them being Lady Sudeley and Bietesheimer, the latter large, of a uniform rosy pink hue; also Pears Précoce de Trévouf and Aspasia Ancourt, early varieties of promise.

Silver Banksian Medal.

To Lord Foley, Ruxley Lodge, Esher (gr. Mr. Miller), for a collection of fruit—Apricots, Peaches, Nectarines, Cherries, Gooseberries, &c.

Silver Banksian Medal.

To Earl Cowper for twelve very fine Queen Pineapples.

First Class Certificate.

To Sutton's Dessert and Sutton's Golden Nugget Tomatos (votes unanimous), varieties which had been highly commended at the Chiswick trials.

Cultural Commendation.

To James Thorpe, Esq., Coddington Hall, Newark (gr. Mr. Crawford), for a beautiful and well-grown collection of fruit—

Figs Negro Largo and Brown Turkey, Peach Hale's Early, and Currant La Versaillaise being especially noteworthy.

To Mr. J. Fulford, Bickley Hall, Kent, for some remarkably fine Noble Strawberries gathered from plants forced in early spring and planted out in May.

To Mr. O. Thomas, Royal Gardens, Frogmore, for large and fine examples of Tomato Frogmore Selected.

Other Exhibits.

Mr. Thomas sent several fine Melons named Royal George, Frogmore Orange, and The Duchess, which it was requested might be seen again.

Messrs. R. Veitch & Sons, Exeter, exhibited Veitch's new climbing French Bean, which was greatly admired, the pods being long, straight, and borne very freely. It was recommended to be tried at Chiswick in comparison with Tender and True, which it greatly resembled. A sample of this Bean was also sent from the Society's Gardens. Messrs. Veitch also exhibited Tomato Flying Dutchman and a French Bean named Wonder of the World.

Messrs. Johnson & Son, Boston, sent a Pea named Johnson's Unrivalled.

Messrs. Cannell & Sons, Swanley, sent some very large Tomatos named The King.

Mr. Jones, Hither Green, Lewisham, sent another very large variety of Tomato.

The Duke of Northumberland, Syon House (gr. Mr. Wythes), sent a Kidney Bean, a selection from Ne Plus Ultra.

From Sir Trevor Lawrence, Bart., came examples of a Lettuce named The Giant, which was considered rather coarse.

Some very fine Hale's Early Peaches, grown on the open wall, came from Mr. Nicholas, The Gardens, Upleatham, York.

C. F. Holden, Esq., Rhyl, North Wales, sent a basket of Lord Suffield Apples, also some Plums, in order to show the excellent crop they are bearing in one of the bleakest parts of North Wales.

Mr. C. House, Chalvey, Bucks, sent three varieties of seedling Plums.

The Duke of Wellington, Strathfieldsaye (gr. Mr. McHattie), sent examples of the French Crab Apple, which finds favour with some on account of its good keeping properties.

FRUIT COMMITTEE, AUGUST 28, 1894.

P. CROWLEY, Esq., in the Chair, and twelve members present.

Awards Recommended:—

Silver Knightian Medal.

To Messrs. Spooner & Son, Hounslow, for a collection of thirty-one varieties of Apples and ten of Plums.

Silver Banksian Medal.

To Messrs. Veitch & Sons, Chelsea, for a large collection of fruit—twenty-four dishes of Apples, forty-two dishes of Plums, six of Pears, and one of Figs.

Award of Merit.

To Melon Fairlawn Empress of India (votes unanimous), from E. Hart, Esq., Totteridge. Fruit of medium size, roundish ovate, pale yellow; flesh very pale green, melting, and of excellent quality.

Cultural Commendation.

To the Earl of Shrewsbury, Ingestre Hall, Stafford (gr. Mr. Gilman), for very fine Barrington Peaches.

Other Exhibits.

A. Pears, Esq., Spring Grove, Isleworth (gr. Mr. Farr), sent examples of a handsome Tomato named Farr's Commander.

W. H. Evans, Esq., Forde Abbey, Chard (gr. Mr. Crook), exhibited some very fine Moorpark Apricots.

George Neville, Esq., also sent very good Apricots and Morello Cherries.

Sir R. A. Cunliffe, Bart., Acton Park, Wrexham (gr. Mr. Weir), sent a bunch of a new Grape named Chilwell Muscat, which greatly resembled the Muscat Hambro. The Committee asked to see it another year.

Melons in variety were exhibited by J. Hawthorn Kitson, Esq., Elmet Hall, Leeds (gr. Mr. T. Bonsall); G. Neville, Esq., Stubton Hall, Claypole, Newark (gr. Mr. Geo. Dyke); J. Rylands, Esq., Longford House Gardens, Haven Street, Isle of Wight (gr. Mr. James Barkham); the Earl of Shrewsbury, Ingestre Hall, Stafford (gr. Mr. Gilman); and the Duke of Northumberland, Syon House (gr. Mr. Wythes), all of which were somewhat deficient in flavour and quality.

Messrs. Watkins & Simpson, Exeter Street, Strand, submitted a new Raspberry.

From Lord Foley, Esher (gr. Mr. J. Miller), came a collection of Melons, Peaches, and Tomatos.

Messrs. Hurst & Sons, Houndsditch, sent examples of Hurst's Black-spine Cucumber, a very long variety with prominent black spines.

Mr. Owen, Maidenhead, sent a very large Tomato named Owen's Perfection.

FRUIT COMMITTEE, SEPTEMBER 11, 1894.

T. F. RIVERS, Esq., in the Chair, and sixteen members present.

Awards Recommended:—

Silver Banksian Medal.

To Messrs. John Laing & Sons for a collection of fifty dishes of Apples.

Bronze Banksian Medal.

To Mrs. M. Jones, Greenford Place, Sudbury, Harrow (gr. Mr. G. Jones), for a collection of fruits and vegetables.

Cultural Commendation.

To Mr. G. Featherby, Gillingham, Kent, for several large baskets of Gros Maroc and Canon Hall Muscat Grapes of good appearance and quality.

Other Exhibits.

Mr. Owen Thomas, The Royal Gardens, Frogmore, sent a seedling Black Grape, which has been grown at Frogmore for many years. Fruit large, round, jet-black, but somewhat wanting in flavour.

Messrs. T. Rivers & Son, Sawbridgeworth, exhibited a white Grape named Gradisha, resembling White Nice.

Mr. E. Crump, Manor House, Whitenash, Leamington, sent another seedling Grape named Royal Leamington, similar in appearance to Madresfield Court.

E. Hart, Esq., Totteridge (gr. Mr. J. Smith), again sent examples of a seedling Melon named Fairlawn Empress of India, which had received an Award of Merit at a previous meeting.

Melons were also shown by Mr. S. Mortimer, Farnham;

G. Neville, Esq., Newark; Mr. Owen Thomas, Frogmore; Mr. C. Cutte, Stanton House, Wandsworth; and Sir John Johnstone, St. Osyth Priory, Colchester (gr. Mr. W. Kent).

Messrs. Kimberley & Son, Hertford Street, Coventry, sent an Apple named Autumn Rouge, very similar to Doonside.

Col. Archer Houlton, Welford Park, Newbury, sent fruits of a handsome seedling Pear named The Popham, raised from Grosse Calebasse, which it somewhat resembled.

A beautiful dish of large Blackberries, *Rubus laciniatus*, came from Messrs. J. Veitch & Sons.

Earl Nelson, Trafalgar, Salisbury (gr. Mr. G. Talford), sent excellent examples of Warburton Admirable Peaches, Brunswick Figs, and Humboldt Nectarines.

Sir T. F. Buxton, Warlies, Waltham Abbey (gr. Mr. Clarke), sent a seedling Peach resembling Bellegarde, and an Apple named Clarke's Fancy.

Sir C. Pigott, Bart., Wrexham Park, Slough (gr. Mr. Capp), sent a brace of Telegraph Cucumbers.

The Hon. G. M. Fortescue, Dropmore (gr. Mr. Herrin), sent a fruit of the white Cucumber.

C. Cutte, Esq., Wandsworth Common, sent two varieties of Tomatos.

Mr. Palmer, Junction Road, Andover, sent a handsome Tomato named Palmer's Triumph.

Messrs. Carter & Co., Holborn, exhibited twelve plants of Tomato Duke of York.

Mrs. Whitbourn, Great Gearies, Ilford (gr. Mr. Douglas), sent Veitch's Runner Bean.

From Sir John Johnstone, Colchester, came some fine Onions named Priory Globe, which were referred to Chiswick for trial.

FRUIT COMMITTEE, AT CHISWICK, SEPTEMBER 25, 1894.

P. CROWLEY, Esq., in the Chair, and nineteen members present.

Awards Recommended:—

Silver Knightian Medal.

To the Borough of Richmond Allotments Committee for a large collection of fine vegetables and fruit grown by the allotment holders. A very creditable display.

Bronze Banksian Medal.

To Lord Foley, Esher (gr. Mr. Miller), for a collection of fruit—twenty-five varieties of Pears, with Peaches, Nectarines, Melons, Figs, Apples, &c.

First Class Certificate.

To Veitch's Climbing French Bean (votes unanimous), a selection from Canadian Wonder, from Messrs. R. Veitch & Sons, Exeter.

To Cucumber Blendworth Perfection (votes unanimous), a very handsome variety of a deep green colour, from Mrs. Long, Blendworth Lodge, Horndean (gr. Mr. Busby).

To Plum Monarch (votes unanimous), from Messrs. Lane & Son, Berkhamstead, a variety of great merit raised by Messrs. T. F. Rivers & Son, Sawbridgeworth.

To Potato Hillside Superb (votes unanimous), from Mr. J. Stokes, Hilperston Marsh, Trowbridge.

To Potato Poor Man's Friend (votes unanimous), from Mr. J. S. Eaton, 4 Highhurst Street, New Radford, Nottingham.

To Potato Boston Bountiful (votes unanimous), from Messrs. Johnson & Sons, Boston.

To Potato The Field King (votes unanimous), from Mr. C. W. Howard, Bridge, Canterbury.

To Potato Daniels' Special (votes unanimous), from Messrs. Daniels Bros., Norwich.

Award of Merit.

To Peach Late Devonian (votes unanimous), a cross between Belle de Vitry and Late Admirable, from Messrs. R. Veitch & Sons, Exeter.

Other Exhibits.

Mr. George Jones, Greenford Place, Sudbury, sent a collection of fruit and vegetables.

Mr. W. Parish, Magdalen Street, Chesterton Road, Cambridge, sent a nice-looking Plum named Parish's Meridian.

General Sir R. T. Farren, K.C.B., Bealings House, Great Bealings, Woodbridge, sent an Apple named Bealings Pippin, which the Committee suggested might be submitted again, with more particulars as to the age of the tree, its habit, growth, &c.

The Rev. A. Terrace, St. George's College, Woburn Park,

Weybridge (gr. Mr. Basill), sent a Gourd weighing 196 lbs., and a collection of other vegetables.

Mr. C. Turner, Slough, sent Turner's Prolific Tomato, a medium-sized, free-fruited variety; and A. F. Barron Apple.

From the Hon. G. M. Fortescue, Dropmore (gr. Mr. Herrin), came a new seedling Melon.

Some very large Onions came from Mr. E. Renfold, Leigh Park.

Frogmore Selected Tomato was shown in fine condition by Mr. Thomas, Royal Gardens, Frogmore.

Mr. Bannister, Cote House, Westbury-on-Trym, sent a few small fruits of Standard-bearer Apple; and Mr. Smith, of Mentmore, kindly brought some of Cobham for comparison. The Committee considered the two Apples to be quite distinct.

GREAT SHOW OF BRITISH-GROWN FRUIT AT THE CRYSTAL PALACE, SEPTEMBER 29 AND OCTOBER 1 AND 2, 1894.
(See "Journal," Vol. XVIII.)

FRUIT COMMITTEE, OCTOBER 9, 1894.

P. CROWLEY, Esq., in the Chair, and twenty members present.

Awards Recommended:—

Silver Gilt Knightian Medal.

To his Grace the Duke of Northumberland, Syon House, (gr. Mr. Wythes), for 120 dishes and baskets of Apples and Pears.

Silver Knightian Medal.

To Mr. H. Berwick, Sidmouth, Devon, for 150 dishes of Apples. Fruit large and well coloured.

To A. H. Smee, Esq., Carshalton (gr. Mr. Cummins), for 120 dishes of Pears.

To Messrs. Cannell & Sons, Swanley, for a large collection of Onions, representing most of the leading varieties, Carrots, Leeks, &c.

Silver Banksian Medal.

To Messrs. J. Peed & Sons, Norwood Road, S.E., for 100 dishes of Apples and Pears.

To the Dowager Lady Freake, Fulwell Park, Twickenham (gr. Mr. Rickwood), for 100 dishes of fruit—60 of Apples and 40 of Pears.

To Mrs. Wingfield, Ampthill House, Ampthill, Beds (gr. Mr. Empson), for some remarkably well-grown Carrots.

To Messrs. Veitch & Sons, Chelsea, for a large collection of Winter Cabbages and Savoys.

Cultural Commendation.

To Messrs. Rivers & Son for very large and handsome fruits of Doyenné du Comice Pear, grown in pots; also for fruits of the Late Golden Transparent Plum of excellent quality.

To A. Pears, Esq., Spring Grove, Isleworth (gr. Mr. Farr), for fruiting plants of Tomato All the Year Round, a variety greatly resembling Chiswick Red.

Other Exhibits.

Mrs. Wingfield, Ampthill, again exhibited fruit of the new Grape named Mrs. Wingfield, which is in appearance like Black Morocco. The Committee requested that it might be sent again later in the season.

Mr. Appleby, Dorking, sent some fruit of the Diamond Plum, being the second crop the tree had produced this year.

Mr. T. Tewston, Stockton-on-Tees, sent an Apple named Richard Cobden.

The Plum October Yellow was shown in good condition by Messrs. Laxton; also some excellent specimens of Onion Sandy Prize.

Melons were exhibited by the Duke of Northumberland (gr. Mr. Wythes), and by J. T. Dydale, Esq., Moreton-in-the-Marsh (gr. Mr. Beale), which were requested to be sent again.

FRUIT COMMITTEE, OCTOBER 23, 1894.

P. CROWLEY, Esq., in the Chair, and twenty-one members present.

Awards Recommended:—

Gold Medal.

To Messrs. J. Laing & Sons, Forest Hill, for a large and remarkably fine collection of Apples, 250 dishes in 140 varieties, the produce of quite young trees.

To his Grace the Duke of Northumberland, Syon House (gr. Mr. Wythes), for a large and representative collection of vegetables, many of the kinds being very fine, and displaying grand cultivation.

Silver Gilt Knightian Medal.

To Messrs. Veitch & Sons, Chelsea, for 150 dishes of Apples and Pears.

To Messrs. Cheal & Sons, nurserymen, Crawley, for 113 dishes of Apples and Pears.

Silver Banksian Medal.

To Mr. J. Watkins, Pomona Farm, Hereford, for fifty dishes of Apples and fifty of Pears, conspicuous for their very high colouring.

To C. Lee Campbell, Esq., Glewston Court, Hereford (gr. Mr. S. T. Wright), for six large and very fine bunches of Gros Colmar Grapes, the berries of large size and magnificent colour.

To the Earl of Carnarvon, High Clere Castle, Newbury (gr. Mr. Pope), for a collection of eighty varieties of Potatos.

Bronze Banksian Medal.

To the Rev. A. Terrace, Woburn Park, Weybridge (gr. Mr. Basill), for a collection of vegetables.

Award of Merit.

To Plum Rivers' Late (votes unanimous), from the Society's Garden. Fruit of medium size, round, purple, with a fine brisk flavour. A valuable late variety.

To Melon The Earl's Favourite (votes unanimous), from the Earl of Radnor, Longford Castle, Salisbury (gr. Mr. Ward). A green-fleshed variety of excellent quality.

Other Exhibits.

The Marquis of Huntly, Orton Longueville, Peterborough (gr. Mr. Harding), sent specimens of a large, handsome, highly coloured Apple named Orton Favourite, of considerable merit as an early kitchen variety; and some fine specimens of the old Orange Bergamot Pear.

Col. Archer Houblon, Welford Park (gr. Mr. Ross), brought an Apple named Lady Alice Eyre; also a very handsome Pear named The Popham.

The Hon. G. M. Fortescue, Dropmore (gr. Mr. Herrin), exhibited the Dutch Mignonne Apple.

From the Society's Garden came Belle Julie Pear.

From Mr. Robt. Fenn, Sulhamstead, Reading, came an interesting collection of Potatos of his own raising.

The Duke of Northumberland (gr. Mr. Wythes) submitted Syon Prolific, a seedling Potato of promise; also a pure white selection of the Early Milan Turnip.

Sir Trevor Lawrence, Bart., Burford Lodge, Dorking (gr. Mr. Bain), sent specimens of Chinese (Shan-tung) Cabbage, and various other rare vegetables.

Mrs. D. H. Scott, Old Palace, Richmond, sent a plant of *Oxalis crenata*, *oka*, from the Azores Islands, the tubers of which are eaten by the natives.

Some large and well-grown Onions were shown from the Hants County Council Allotment Grounds.

Mr. T. F. Rivers proposed the following resolution, which was carried:—

“That the Council be requested to consider the advisability of limiting exhibits of fruit to fifty dishes of any kind without duplicates.”

Prizes.

Class 1.—Apples grown in the open, distinct, three dishes of Dessert, four dishes of Cooking, six fruits to a dish. Amateurs. First prize, £1. 10s., to Mr. S. T. Wright, gardener to C. Lee Campbell, Esq., Glewston Court, Hereford. Second prize, £1, to Mr. G. Wythes, gardener to the Duke of Northumberland, Syon House, Brentford.

Class 2.—Pears grown in the open, distinct, five dishes of Dessert, six fruits to a dish. Amateurs. First prize, £1. 10s., to Mr. T. Osman, Ottershaw Park Gardens, Chertsey. Second prize, £1, to Mr. G. Wythes.

Class 3.—Pears grown in the open, distinct, eight dishes of Dessert, six fruits to a dish. Open. First prize, £2, to Mr. T. Spencer, gardener to H. C. Moffatt, Esq., Goodrich Court, Hereford. Second prize, £1. 10s., to Mr. T. Osman.

Class 4.—Six bunches of Grapes, not less than three varieties. Amateurs. First prize, £2. 10s., to Mr. W. Howe, gardener to H. Tate, Esq., Park Hill, Streatham Common. Second prize, £2, to Mr. T. Osman.

FRUIT COMMITTEE, NOVEMBER 13, 1894.

T. F. RIVERS, Esq., in the Chair, and fifteen members present.

Awards Recommended :—

Silver Knightian Medal.

To his Grace the Duke of Rutland, Belvoir Castle, Grantham (gr. Mr. W. Divers), for a collection of fifty-two varieties of Pears, mostly from walls.

Bronze Banksian Medal.

To Mr. J. Walker, Thame, Oxon, for a group of Walker's Exhibition Onions, a selection from the White Spanish.

First Class Certificate.

To Apple Brown's South Lincoln Beauty (votes unanimous),

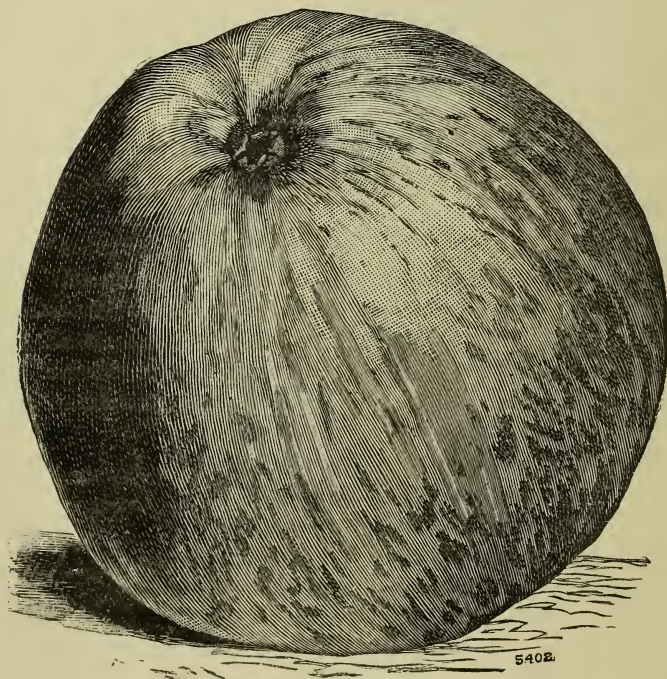


FIG. 20.—APPLE SOUTH LINCOLN BEAUTY.

from Messrs. W. & J. Brown, Stamford. A variety of excellent quality, said to have been raised from Cox's Orange crossed with

King of the Pippins. Fruit of medium size, ovoid, inclining to conical, deep-set eye; stalk slender, about half an inch long, set in a deep funnel-shaped cavity; streaked with red towards the sun. Hardy, robust constitution, and said to be a good bearer (See Fig. 20.)

Award of Merit.

To Pear Beurré Dubuisson (votes unanimous), from Mr. Divers, Belvoir. Fruit large, obovoid; flesh white, melting, very juicy and well-flavoured.

To Pear Le Lectier (votes unanimous), from Messrs. Saltmarsh & Son, Chelmsford.

Cultural Commendation.

To Mrs. Wingfield, Amptill House, for Sutton's Exhibition Carrots. Very fine examples.

Messrs. T. Rivers & Son brought some very large and remarkably fine fruits of Doyenné du Comice Pears and Cox's Orange Pippin Apples.

Other Exhibits.

General Sir R. T. Farren, K.C.B., sent some fruits of an Apple named Bealings Pippin, which was considered to be identical with Fearn's Pippin.

Mr. C. J. Holden, Rhyl, North Wales, sent some very good specimens of Mère de Ménage Apples from established orchard trees.

Mr. J. Hopkins, High Cross, Framfield, Sussex, sent two fruits of *Solanum guatemalense*, which possesses a mixed flavour of the Cucumber and Tomato.

FRUIT COMMITTEE, NOVEMBER 27, 1894.

T. F. RIVERS, Esq., in the Chair, and fifteen members present.

Awards Recommended:—

Silver Banksian Medal.

To Messrs. C. Lee & Son, Ealing, for fifty dishes of Apples.

To Messrs. Cannell & Sons, Swanley for one hundred dishes of Potatos.

Cultural Commendation.

To Messrs. Lane & Son, Berkhamstead, for some excellent specimens of Gros Colmar Grapes.

Other Exhibits.

Messrs. Lane also sent some very interesting Blenheim Orange Apples very highly coloured. They were said by Mr. Lane to have originated in a sport which, being grafted on to Paradise stocks, had been perpetuated, and it was proposed to call it Scarlet Blenheim. Dr. Hogg stated that the origin of the Scarlet Golden Pippin was a sport from Golden Pippin.

Messrs. John Laing & Sons exhibited Pear Président Drouard and Fondante de Fondre, which it was requested might be seen again.

A. Pears, Esq., Spring Grove (gr. Mr. Farr), sent a well-cultivated Tomato named All the Year Round. It greatly resembled the variety known as Chiswick Red.

FRUIT COMMITTEE, DECEMBER 11, 1894.

T. F. RIVERS, Esq., in the Chair, and nineteen members present.

Awards Recommended :—

Silver Gilt Knightian Medal.

To Messrs. G. Bunyard & Co., Maidstone, for one hundred varieties of culinary Apples, the specimens being extremely fine and in remarkably fresh and good condition. Varieties specially to be noted were Gascoigne's Seedling, intensely coloured; Baumann's Red Winter Reinette, Bismarck, Newton Wonder, Annie Elizabeth, Mrs. Barron, Flanders Pippin, Lane's Prince Albert, Golden Noble, and Striped Beefing.

Other Exhibits.

Mrs. Wingfield, Amptill (gr. Mr. Empson), sent bunches of Gros Colmar Grape.

E. A. Hanbury, Esq., Belmont, Eastbourne (gr. Mr. Porteous), sent several Melons of fairly good quality for so very late in the season.

Mr. A. G. Nicholls, of Nuneham Park Gardens, Abingdon, sent a Cucumber of the Telegraph section.

Messrs. B. S. Williams & Son, Holloway, brought a Tomato named New Winter, similar to the Early Red.

Lady Fortescue, Dropmore (gr. Mr. Herrin), sent an Apple named Farmer's Glory, a large well-flavoured fruit.

AWARDS

RECOMMENDED BY THE FRUIT AND VEGETABLE COMMITTEE
TO PLANTS GROWN AT CHISWICK.

I.—CAULIFLOWERS, 1894.

CONSIDERABLE advance has been made with Cauliflowers of late years, first, by the introduction of the Erfurt varieties, which under the same treatment come into use some four or five weeks earlier than any other variety; and, secondly, by the introduction of Veitch's Autumn Giant as a late variety, which comes into use several weeks later. Thus, the Cauliflower season is extended, and by judiciously sowing the following varieties a continuous supply from June to December may easily be obtained:—

Erfurt, syn. Snowball, for the earliest.

Early London, syn. Walcheren, for mid-season.

Veitch's Autumn Giant for the latest.

Cauliflower requires very great care in the saving of the seed; so as to maintain the stock pure. Few vegetables are more given to variation, hence the number of so-called new varieties.

With a view to their classification, a collection of the different varieties now in cultivation was obtained from the following seedsmen, &c. :—

Mr. Benary, Erfurt.

Messrs. Dobbie & Co., Rothesay.

Mr. Gilbert, Burghley House, Stamford.

Messrs. Harrison & Son, Leicester.

„ Hurst & Sons, Houndsditch.

„ Nutting & Sons, London.

„ J. Veitch & Sons, Chelsea.

„ Vilmorin et Cie., Paris.

„ J. Wrench & Sons, London.

The arrangement adopted is that of season, as being the most useful, commencing with—

1. *Erfurt*.—This was received under the following synonyms: Early Erfurt, Early Short-leaved Erfurt, Dwarf Erfurt, Erfurt Dwarf Small-leaved, Earliest Dwarf Erfurt, Dwarf Erfurt Mammoth, Snowball, Early Snowball, Early Taranto Midsummer.

Plant dwarf; leaves small, pale green. Heads of medium size, from six to twelve inches in diameter, frequently larger;

close, pure white, assuming a shade of purple when older. A very pretty and distinct variety of very tender and excellent quality. The earliest variety.

2. *Walcheren*.—Synonyms: Early London, Stadtholder, Large Early, Second Early, Middle Late Dutch.

Plant of medium size; leaves tall, bright green. Heads of medium size, from eight to twelve inches in diameter; of a pure creamy-white; very solid and nicely protected by the young leaves hooding and twisting over the crown. This is the old and most generally cultivated form, varying considerably according to selection &c. Excellent quality. Mid-season.

3. *Asiatic*.—Synonyms: Large White Italian, Emperor, Early Perfection, Late Asiatic.

Plant of medium size; leaves pale green. Heads large; white. Mid-season.

4. *President*.—Synonym: Martin's President.

Heads large, somewhat coarse. Mid-season.

5. *Lenormand*.—Plant of medium size; leaves and stem short. Heads large, eight to twelve inches in diameter; pale yellow; somewhat coarse. Mid-season.

6. *Eclipse*.—Synonyms: Improved Eclipse, Dwarf Italian.

Plant of medium size; heads large; pale yellow. Mid-season.

7. *Pearl*.—Heads of medium size; pale yellow; firm and solid; well protected. Mid-season.

8. *Autumn Giant*.—Synonyms: Veitch's Autumn Giant, Algiers, Ne Plus Ultra, Autumn Mammoth.

Plant large; leaves tall, narrow, of a glaucous green. Heads large, from eight to twelve inches in diameter; of a pale creamy colour; very solid. A fine late sort.

II.—POTATOS, 1894.

A collection of fifty-six varieties of Potatos was grown for trial during the past year at the Society's Gardens. The season being very wet disease was prevalent. Notwithstanding this, the quality of the Potatos was considered very good.

The seed for the trial was presented by—
Messrs. Cannell & Sons, Swanley.

- Messrs. Cooper, Taber, & Co., Witham, Essex.
 Messrs. Daniels Bros. Norwich.
 Mr. Eaton, New Radford, Nottingham.
 Mr. Farquhar, Aberdeen.
 Mr. Foster, Kettering.
 Mr. Gilbert, Burghley Gardens, Stamford.
 Mr. Howard, Bridge.
 Mr. Hughes, Wentworth Woodhouse, Rotherham.
 Messrs. W. W. Johnson & Sons, Boston.
 Mr. Lye, Market Lavington.
 Mr. Mackereth, Ulverston.
 Mr. Miles, Derwent Street, Leicester.
 Messrs. Paul & Son, Cheshunt.
 Mr. Richards, Hucknall Torkard, Notts.
 Mr. Ridgewell, Histon Road, Cambridge.
 Mr. Ross, Welford Park, Newbury.
 Mr. Stokes, Hilperton Marsh, Trowbridge.
 Mr. Sim, Greenmyre, Fyvie.
 Mr. Tait, Dovenby Hall Gardens, Cockermouth.
 Mr. Telford, Holm Hill, Dalston, Carlisle.
 Messrs. Vilmorin et Cie., Paris.
 Mr. Webber, Tonbridge.
 Messrs. J. G. Wheeler & Son, Gloucester.
 Mr. Wiles, Grandpont, Oxford.

The collection was duly examined by the Fruit and Vegetable Committee, and the following varieties, Pride of Oxford, Duchess of York, Pet, Prosperous, Giantess, Wood's Favourite, Rushcliffe Beauty, Boston Bountiful, Daniels' Special, The Field King, Hillside Superb, and the Poor Man's Friend, having been selected as being of good cropping qualities and appearance, were subjected to the test of cooking, and the following awards were then recommended:—

Highly Commended (× × ×).

Boston Bountiful, from Messrs. W. W. Johnson & Son, Boston.

Daniels' Special, from Messrs. Daniels Bros., Norwich.

Hillside Superb, from Mr. Stokes, Hilperton Marsh, Trowbridge.

The Field King, from Mr. Howard, Bridge.

The Poor Man's Friend, from Mr. Eaton, New Radford, Nottingham.

The following is a brief description of the varieties tried, arranged in alphabetical order:—

1. Abingdon Seedling (Perkins). Large, long, tapering; white skin; flesh white. Good cropper. Second early.
2. Autocratic (Foster). Small, oblong; white skin; flesh white; much diseased. Mid-season.
3. Beauty of Oxford (Wiles). Large; white, rough skin; flesh pale yellow; badly diseased. Poor cropper. Late.
4. Belle de Fontenay (Vilmorin). Medium size; white skin; flesh yellow; badly diseased. Poor cropper. Early.
5. Bon-Accord (Farquhar). Long; white skin; deep eyes; flesh white. Poor cropper. Late. Worthless.
6. Boston Bountiful (Johnson). Large, resembling Magnum Bonum; flesh white. Great cropper. Late. F.C.C., September 25, 1894.
7. Come to Stay (Cannell). Large; white, rough skin; flesh white; badly diseased. Mid-season.
8. Crimson King (Lye). Medium size, round; bright red, rough skin; flesh white; much diseased. Late.
9. Daniels' Duke of York (Daniels). Large, oblong; white, rough skin; flesh yellow; slightly diseased. Good cropper. Early.
10. Daniels' King (Daniels). Medium size, oblong; white, smooth skin; flesh white; slightly diseased. Poor cropper. Early.
11. Daniels' Remarkable (Daniels). Similar to Reading Giant. Flesh milk-white; one half diseased. Heavy cropper. Mid-season.
12. Daniels' Special (Daniels). Large, oblong, regular; clear white skin; flesh pale yellow. Good cropper. Mid-season. F.C.C., September 25, 1894.
13. Duchess of York (Wiles). Medium size, long, flattened; white skin; flesh white. Good cropper. Mid-season.
14. Eclipse (Foster). Large, long; white, smooth skin; flesh milk-white. Late.
15. Eiffel (Vilmorin). Large; white skin, coarse; flesh white; badly diseased. Mid-season. Worthless.

16. Eynsford Mammoth (Cannell). Large, oblong; rough skin; flesh white. Good cropper.

17. George Dickson (Mackereth). Large; white, rough skin; flesh white; badly diseased. Poor cropper. Mid-season.

18. Giantess (Ross). Large, round; white skin; flesh white. Fair cropper. Early.

19. Gilbert's Magnific (Gilbert). Large, long; white, smooth skin, bright pink eyes; flesh white; badly diseased. Good cropper.

20. Gilbert's Selected Ashtop (Gilbert). Small, oblong; white smooth skin; flesh yellow; much diseased. Poor cropper.

21. Gilbert's The Topper (Gilbert). Medium size, flattened; white, rough skin; flesh pale yellow; much diseased. Poor cropper.

22. Hallamshire Hero (Hughes). Medium size; white, rough skin; flesh pale yellow. Good cropper. Mid-season.

23. Hillside Superb (Stokes). Medium size, round; white skin; flesh pale yellow. Heavy cropper. Early. F.C.C., September 25, 1894.

24. Hinksey Wonder (Wiles). Small; white. Worthless.

25. Internationale (Vilmorin). Long; white, smooth skin; flesh white; much diseased. Fair cropper. Mid-season.

26. Johnson's First and Best (Johnson). Oblong; white, smooth skin; flesh yellow; badly diseased. Fair cropper. Late.

27. Johnson's Prolific (Johnson). Medium size, round; white, smooth skin; flesh yellow; badly diseased. Good cropper. Early.

28. J. S. Eaton (Eaton). Large, round; white skin; flesh white. Good cropper. Late.

29. King Arthur (Fletcher). Very large; bright red skin; coarse, deep eyes; flesh white. Late.

30. Late Perfection (Ridgewell). Medium size, round; white, smooth skin; flesh white. Late.

31. Lord Wolseley (Howard). Long, flattened; white, rough skin; flesh pale yellow. Good cropper. Mid-season.

32. Lye's Purple (Lye). Medium size, round; dark purple skin; flesh white; one half diseased. Mid-season.

33. Monster Kidney (Lye). Medium size, pebble-shaped; white skin; flesh pale yellow. Early.

34. Mountain Maid (Sim). Medium size, round; white, rough skin; flesh white; much diseased. Good cropper. Early.

35. Our Boy (Cannell). Oblong; white, smooth skin; flesh white. Good cropper.

36. Oxford Perfection (Wiles). Medium size, oblong; white, smooth skin; flesh pale yellow; slightly diseased. Good cropper. Late.

37. Paul's Very Early (Paul). Very small; white, smooth skin; flesh milk-white. Poor cropper. Very early.

38. Pet (Ross). Medium, flattened; white skin, pink eyes; flesh pale yellow; badly diseased. Good cropper. Second early.

39. Pink-eyed Perfection (Wiles). Medium, round; white, rough skin, bright pink eyes; flesh white; slightly diseased. Late.

40. Pride of Oxford (Wiles). Large, long, flattened; white skin; flesh pale yellow. Late.

41. Pride of Tonbridge (Webber). Large, round; white skin, pink eyes; flesh yellow; much diseased. Fair cropper. Late.

42. Prosperous (Ross). Large; white, rough skin; flesh white. Good cropper. Early.

43. Purple Russet (Miles). Small, pebble-shaped; dark purple skin; flesh pale yellow. Fair cropper. Mid-season.

44. Reine des Polders (Vilmorin). Oblong; white, smooth skin; flesh white; badly diseased. Fair cropper. Mid-season.

45. Robust (Ross). Round; white, rough skin; flesh white. Fair cropper. Mid-season.

46. Rushcliffe Beauty (Richards). Large, oblong; white, rough skin; flesh white; slightly diseased. Good cropper. Late.

47. Tait's Seedling No. 4 (Tait). Medium, pebble-shaped; white skin; flesh white; much diseased. Mid-season.

48. Telford's Seedling (Telford). Small; white skin; much diseased. Early. Worthless.

49. The Alderman (Wheeler). Large, round; white, rough skin; flesh white. Very heavy cropper. Late.

50. The Field King (Howard). Large, oblong; white, rough skin; flesh white. Heavy cropper. Late. F.C.C., September 25, 1894.

51. The Gentleman (Cooper & Taber). Large, long, tapering; white skin; flesh pale yellow. Good cropper.

52. The Poor Man's Friend (Eaton). Large, long; white skin, deep eyes; flesh white. Very heavy cropper. Late. F.C.C., September 25, 1894.

53. Trusty (Ross). Medium, pebble-shaped; white, rough skin; flesh pale yellow; badly diseased. Late.

54. Wood's Favourite (Ridgewell). Oblong; white, smooth skin; flesh pale yellow. Fair cropper. Mid-season.

55. Wrangler (Ross). Small; white skin; flesh yellow. Early. Worthless.

III.—NEW TOMATOS, 1894.

A collection of thirty-five named varieties of Tomatos were grown in 12-inch pots under glass. The plants grew well and bore a large crop of good fruit, being entirely free from insects and other maladies. The seeds for this trial were presented by—

Messrs. Barr & Son, 12 King Street, Covent Garden.

Messrs. Benary, Erfurt.

Messrs. Carter & Co.

Mr. J. Corbett.

Messrs. Laxton Brothers, Bedford.

Messrs. Hurst & Son.

Mr. McDougall.

Messrs. Nutting & Son.

Mr. Charles Turner.

Messrs. Sutton & Son.

Mr. Anthony Waterer, Knap Hill.

Messrs. Wrench & Sons.

The Fruit Committee recommended the following awards :—

Highly Commended (× × ×).

Early July, from Messrs. Laxton.

Comet, from Messrs. Wrench.

Excelsior, from Messrs. Corbett.

Frewer's Incomparable, from Messrs. Nutting.

Golden Nugget, from Messrs. Sutton.

Golden Princess, from Messrs. Sutton.

Laxton's Open Air, from Messrs. Laxton.

Sutton's Dessert, from Messrs. Sutton.

Commended (× ×).

Brooks's Freedom, from Messrs. Barr.

Sutton's A 1, from Messrs. Sutton & Sons.

Turner's Prolific, from Messrs. Turner.

Tennis Ball, from R.H.S.

List of varieties tried :—

1. Abbey Craig (McDougall). Greatly resembles Ham Green.

2. Atlantic Prize (Laxton). Same as Early Red.

3. Best of All (Laxton). Round, medium, and even size.

4. Brooks's Freedom × × (Barr). Large, round, smooth. Perfection type.

5. Carter's No. 1 (Carter). Same as Hathaway's Excelsior.

6. Comet × × × (Wrench). Medium size, round. A very good selection of Tennis Ball.

7. Corniton (McDougall). Same as Ham Green.

8. Crimson Emperor (Barr). A somewhat flattened form of Perfection.

9. Dunedin Favourite (Hurst). Similar to Dedham Favourite.

10. Dwarf Bush (Hurst). Same as Champion.

11. Early July × × × (Laxton). Fruits red, large, flattened, rather corrugated. A free cropper.

12. Early Ripener (Laxton). Bright red, medium size, round, somewhat flattened.

13. Empress of India (Barr). Perfection type.

14. Excelsior × × × (Corbett). Fruit red, large, round, smooth. Perfection type.

15. Fitzjames (McDougall). Same as Perfection.

16. Flying Dutchman (Wrench). Fruit red, of medium size, much ribbed.

17. Frewer's Incomparable × × × (Nutting). Fruit pale red, very large, solid; resembling Perfection. Foliage very large, broad.

18. Golden Princess × × × (Sutton). Yellow, medium size, round.

19. Goldfinder (Barr). Same as Trophy.

20. Imperial (Laxton). Red, medium size, somewhat flattened. Foliage very curled; distinct.

21. Jarman's Sunset. Resembling Dedham Favourite.

22. Laxton's Open-air $\times \times \times$ (Laxton). Similar to Old Red.
23. Prince Albert Victor (Barr). Similar to Perfection.
24. Prolific (Laxton). Large, much corrugated. Great cropper. Foliage curled.
25. Purple King (Barr). Of medium size; similar to Dedham Favourite.
26. Ravenna (McDougall). Resembling Hathaway's Excelsior.
27. Rival (Corbett). Flesh-colour, medium size, round, smooth.
28. Scovell's Hybrid (Benary). Similar to Perfection.
29. Snowdon (McDougall). Similar to Ham Green.
30. Sutton's A1 $\times \times$ (Barr). Same as Chemin.
31. Sutton's Dessert $\times \times \times$ (Sutton). Berries bright red, small, round; borne in large clusters.
32. Sutton's Golden Nugget $\times \times \times$ (Sutton). A dessert fruit.
33. Terra-cotta (Benary). Of medium size, roundish, deep. A poor cropper.
34. Turner's Prolific $\times \times$ (Turner). Large, flat, corrugated. An abundant and good cropper.
35. Victor (Laxton). Same as Best of All.
36. Waterer's Seedling (Waterer). Same as Dedham Favourite.

IV.—NEW PEAS, 1894.

A collection of forty-two varieties of new Peas were grown for trial at the Society's Gardens during the past year, several older varieties being grown side by side for the purposes of comparison.

The seed was presented by—

Mr. Bailey, Hucknall Torkard, Notts.

Messrs. Bunyard & Co., Maidstone.

Messrs. Carter & Co., High Holborn.

Messrs. Dicksons, Chester.

Mr. Eckford, Wem, Salop.

Messrs. Harrison & Sons, Leicester.

Mr. Hughes, Wentworth Gardens, Rotherham.

Messrs. Kent & Brydon, Darlington.
 Messrs. Laxton Bros., Bedford.
 Mr. Lye, Market Lavington.
 Mr. Maher, Yattendon Court, Newbury.
 Messrs. Sutton & Sons, Reading.
 Messrs. J. Veitch & Sons, Chelsea.
 Messrs. Vilmorin et Cie., Paris.
 Messrs. J. G. Wheeler & Son, Gloucester.

The collection was examined by the Fruit and Vegetable Committee on two occasions, the following varieties receiving $\times \times \times$, *i.e.* Highly Commended:—

1. Compacta, from Mr. Maher.
2. Critic, from Mr. Eckford.
3. Fertility, from Mr. Hughes.
4. John Howard, from Messrs. Laxton Bros.
5. Veitch's Maincrop, from Messrs. J. Veitch & Sons.
6. The Don, from Mr. Eckford.

The following is a brief description of the varieties tried, arranged according to the colour of the seed:—

CLASS I.

White Round or Frame Peas.

1. Etamps Wonder (Vilmorin et Cie.). A good selection of Early Frame.

2. Lye's Seedling (Lye). Height, 3 feet 6 inches; pods large, curved, deep green, containing nine large Peas of good quality. Fit for use July 11.

3. Sutton's Bountiful (Sutton & Sons). Height, 4 feet 6 inches; pods white, of medium size, containing six to eight Peas. Fit for use July 6.

CLASS II.

Blue Round Peas.

4. Ameer (Harrison & Sons). Height, 4 feet; pods curved, white, containing seven to nine Peas. Fit for use July 7.

5. Blue John (Harrison & Sons). Height, 2 feet 9 inches; pods deep green, well filled, containing five Peas. Fit for use July 7.

6. Carter's Elephant (Carter & Co.). Height, 4 feet; pods pale green, containing six to eight Peas. Fit for use July 9.

CLASS III.

Green Wrinkled Peas.

7. A.C. (Dicksons). Height, 3 feet 6 inches; pods white, containing six to eight Peas of good quality. Fit for use July 7.

8. Armorial (Eckford). Height, 4 feet; pods large, deep green, containing seven to ten Peas. Fit for use July 9.

9. Brydon's Maincrop (Kent & Brydon). Height 3 feet 6 inches; pods curved, of medium size, deep green, containing eight Peas. Fit for use July 15.

10. Brydon's Prolific (Kent & Brydon). Height, 2 feet 6 inches; pods long, narrow, pale green, well filled. Fit for use July 11.

11. Compacta $\times \times \times$ (Maher). Height, 3 feet; pods deep green, containing seven to nine Peas of good quality. Fit for use July 21.

12. Colossus (Eckford). Height, 4 feet; pods very large, containing eight large Peas. Fit for use July 7.

13. Critic $\times \times \times$ (Eckford). Height, 4 feet; pods straight, pale green, containing seven to nine large Peas of good quality. Fit for use July 9. Very prolific.

14. English Wonder (Harrison & Sons). Height, 1 foot; pods small, pale green, containing four to six Peas of good quality. Fit for use July 7.

15. Ex-officio (Eckford). Height, 3 feet; pods long, broad, pale green, irregularly filled. Fit for use July 18.

16. Fertility $\times \times \times$ (Hughes). Height, 2 feet 6 inches; pods narrow, deep green, containing ten large Peas of fine quality. Fit for use July 12.

17. Huntsman (Kent & Brydon). A stock of Ne Plus Ultra.

18. John Howard $\times \times \times$ (Laxton Bros.). Height, 4 feet; pods large, deep green, containing nine large Peas of fine quality. Fit for use July 9. Very prolific.

19. Juno (Eckford). Height, 2 feet 6 inches; pods small, deep green, containing five to seven Peas of fair quality. Fit for use July 16.

20. Man of Kent (G. Bunyard & Co.). Height, 3 feet; pods white, containing seven Peas. Fit for use July 13.

21. Masterpiece (Hughes). Height, 3 feet; pods large, very deep green, containing eight to ten Peas. Fit for use July 11.

22. Monarch (Eckford). Height, 4 feet; pods straight, deep green, containing six to eight Peas of good quality. Fit for use July 15.

23. Monitor (Maher). Height, 4 feet 6 inches; pods short, broad, deep green, containing six to eight Peas. Fit for use July 23.

24. Nonesuch (Hughes). Height, 3 feet 6 inches; pods deep green, irregularly filled. Fit for use July 16.

25. North's Wonder (Harrison & Sons). A stock of Ne Plus Ultra.

26. Pierremont Gem (Kent & Brydon). Height, 1 foot; pods small, broad, deep green, containing five Peas. Fit for use July 9.

27. Positive (Eckford). Height, 4 feet; pods of medium size, deep green, containing seven to nine Peas of fair quality. Fit for use July 11.

28. Potentate (Eckford). Height, 2 feet 6 inches; pods short, deep green, irregularly filled. Fit for use July 15.

29. Reliable (Harrison & Sons). Height, 3 feet; pods narrow, deep green, well filled. Fit for use July 13.

30. Rex (Eckford). Height, 4 feet; pods large and handsome, deep green, containing eight to ten Peas of fair quality. Fit for use July 9.

31. Rushcliffe Marrow (Bailey). Veitch's Perfection type.

32. Standard (Kent & Brydon). Height, 1 foot 6 inches; pods large, deep green, containing eight to ten Peas of fair quality. Fit for use July 11.

33. Superabundant (1, Eckford; and 2, Hughes). Height, 3 feet; pods of irregular size, deep green, containing six to eight Peas of fair quality. Fit for use July 11.

34. Superiority (Eckford). Mixed. A poor stock of White Marrow.

35. The Don $\times \times \times$ (Eckford). Height, 3 feet 6 inches; pods large, containing seven to nine Peas of fine quality. Fit for use July 7.

36. The Harper (Laxton Bros.). Height, 4 feet; pods

curved, deep green, containing seven to nine Peas. Fit for use July 11.

37. The Prince (Laxton Bros.). Similar to Telegraph.

38. Utility (Laxton Bros.). Similar to Telegraph.

39. Vanguard (Laxton Bros.). Ne Plus Ultra section.

40. Veitch's Maincrop $\times \times \times$ (J. Veitch & Sons). Height, 3 feet 6 inches; pods large, deep green, containing eight to ten Peas of first-rate quality. Fit for use July 9.

41. Wheeler's Kingsholm Prolific (J. G. Wheeler & Son). A short Ne Plus Ultra.

42. X.L. (Kent & Brydon). Height, 3 feet; pods pale green, containing large Peas of fine quality. Fit for use July 15.

FLORAL COMMITTEE.

JULY 10, 1894.

W. MARSHALL, Esq., in the Chair, and sixteen members present.

Awards Recommended :—

Silver Gilt Flora Medal.

To Messrs. H. Cannell & Sons, Swanley, for Cacti and Succulent plants—Opuntias, Echinocactus, Cereus, Echeverias, Aloes, Agaves, &c.

Silver Floral Medal.

To G. Pritchard, Esq., West Street, Hackney, for Cactaceous plants—Echinocactus, Euphorbias, Opuntias, Cereus triangularis, Mamillarias, &c.

To Messrs. W. Cutbush & Son, Highgate, for Carnations, Lilies, Palms, and Ferns.

To Messrs. J. Laing & Sons, Forest Hill, for Begonias, specially noticeable being a very fine single-flowered variety named John Roberts, carrying large bright rosy pink flowers; Countess of Dudley (double), Mrs. French (double), creamy white, and Mrs. Lynch (double), a lovely soft salmon colour.



FIG. 21.—LILIUM THUNBERGIANUM HORSMANI. (*Journal of Horticulture.*)

To Messrs. J. Veitch & Sons, Chelsea, for hardy flowers, especially noticeable being the Campanulas, Poppies, Gaillardias, Phloxes, Centaureas, and Delphiniums.

Silver Banksian Medal.

To J. W. Singer, Esq., Frome, Somerset, for Cactaceous plants, amongst which were *Pilocereus amatus*, Euphorbias, and Mamillarias in very fine condition.

To Messrs. W. Cutbush & Son, Highgate, for hardy flowers, including Campanulas, Lilies, Spiræas, Phloxes, *Eryngium speciosum*, Rudbeckias, Delphiniums, &c.

To Mr. H. Eckford, Wem, Salop, for Sweet Peas in great variety.

To Messrs. Wallace & Co., Colchester, for Calochorti and Lilies. Amongst the Calochorti were *venustus roseus* and *splendens atroviolaceus*, flowers purple with red blotches at the base of each petal.

Bronze Banksian Medal.

To W. C. G. Ludford, Esq., Fern Lea, Four Oaks, Sutton Coldfield, near Birmingham, for Cactaceous plants.

To Mr. W. Salmon, Elder Road, West Norwood, for Antirrhinums, Sweet Williams, Sweet Peas, &c.

To Mr. J. Walker, Thame, for Auricula-eyed Sweet Williams.

To Messrs. H. Cannell & Sons, Swanley, for Larkspurs, Sweet Peas, and Stocks.

First Class Certificate.

To *Lilium Thunbergianum Horsmani* (votes, 9 for, 1 against), from Messrs. Wallace & Co., Colchester. A very rare, dwarf, and distinct Japanese variety with exceptionally dark crimson flowers (fig. 21).

To *Rubus japonicus tricolor* (votes unanimous), from Messrs. J. Veitch & Sons, Chelsea. A richly coloured Bramble; foliage green, rose, and silvery white, and stems of a distinct glaucous hue (fig. 22).

Award of Merit.

To *Calochortus venustus Vesta* (votes, 14 for), from G. F. Wilson, Esq., Weybridge. A variety with large creamy-white coloured flowers, blotched and streaked with brownish crimson.

To *Calochortus venustus purpurascens* (votes, 9 for), from

G. F. Wilson, Esq., and Messrs. Wallace & Co., Colchester. A large-flowered white variety, reddish brown at the base of the petals, margined with pink.

To *Bougainvillea glabra*, Coker Court variety (votes, 10 for),



FIG. 22.—*RUBUS JAPONICUS TRICOLOR*. (*Journal of Horticulture*.)

from W. E. Hall, Esq., Coker Court, Yeovil (gr. Mr. S. Kidley).
A free-flowering variety with deep red flower bracts.

To Carnation Winifred (votes unanimous), from Martin R. Smith, Esq., The Warren, Hayes, Kent. Large rich orange-coloured flowers.

To Pentstemon Jean Mace (votes, 14 for), from Sir Trevor Lawrence, Bart., Burford Lodge, Dorking (gr. Mr. Bain). A magnificent variety; colour reddish scarlet, with a light throat shaded with rose.

To Sonerila Mrs. H. Walter (votes, 14 for), from Messrs. F. Sander & Co., St. Albans. A foliage plant of dwarf habit, with ovate-elliptic deep green leaves heavily spotted with grey.

To Clematis Lady Ashcombe (votes unanimous), from Messrs. J. Ivery & Son, Dorking. A distinct blue variety.

To Sweet Pea Salopian (votes, 9 for), from Mr. H. Eckford, Wem. Flowers dark red, spotted and streaked with purple.

To Sweet Pea Countess of Powis (votes unanimous), from Mr. H. Eckford. Flowers of large size; colour bright rosy pink.

To Chrysanthemum maximum Maurice Prichard (votes, 12 for), from Mr. M. Prichard, Christchurch. A very fine large-flowered variety of great substance; petals broad, pure white, with a distinct yellow disc.

To Begonia Lord Dunraven (votes, 6 for), from Messrs. J. Laing & Sons, Forest Hill. Flowers large, double, rich crimson-scarlet.

To Begonia Laing's Fringed White (votes unanimous), from Messrs. J. Laing & Sons. A very large single-flowered variety, in which the broad pure white petals are beautifully fringed.

To double Begonia Neatness (votes, 8 for), from Messrs. J. Laing & Sons. Flowers of medium size, well formed, and of a rich scarlet colour.

Botanical Certificate.

To Saintpaulia ionantha (votes unanimous), from Sir Trevor Lawrence, Bart. (gr. Mr. Bain). A very dwarf plant with roundish deep green leaves covered with small hairs. Its blue flowers are borne on erect pedicels and in great profusion. (See page ccvii.)

To Exacum affine (votes unanimous), from Sir Trevor Lawrence, Bart. A stove plant of dwarf habit bearing lilac flowers.

Other Exhibits.

W. M. Bullivant, Esq., Eden Park, Beckenham, sent a Croton named W. M. Bullivant.

M. P. Rébut, Chazay d'Azergues, Rhône, France, sent some Cactaceous plants.

Martin R. Smith, Esq., Hayes, Kent, exhibited Carnation Horace Trelawney. The Committee asked to see it again.

Mr. Owen Thomas, The Royal Gardens, Windsor, sent specimens of *Nelumbium speciosum*.

Prizes.

Class 2.—Twelve bunches of hardy Herbaceous Perennials, distinct; bulbs admissible. Amateurs. First prize, £2, to Mr. G. H. Sage, Ham House Gardens, Richmond. Second prize, £1. 10s., to Mr. S. Kidley, Coker Court Gardens, Yeovil.

Class 3.—Eight bunches of hardy Herbaceous Perennials, distinct; bulbs admissible. Amateurs. First prize, £1. 10s., to Miss Debenham, St. Albans.

Class 6.—Six varieties of Gaillardias, five blooms of each. Amateurs. Prize, Kelway Silver Medal, to Dr. P. H. Emerson, Broadstairs.

Class 7.—Collection of Cactaceous Plants. Amateurs. Prize, Cannell Medal, to G. Pritchard, Esq., West Street, Hackney.

FLORAL COMMITTEE, JULY 24, 1894.

W. MARSHALL, Esq., in the Chair, and twenty-two members present.

Awards Recommended:—

Silver Gilt Flora Medal.

To Mr. H. J. Jones, Lewisham, for single Begonias. Plants of dwarf habit, bearing flowers of large size in rich and varied shades of colour.

Silver Flora Medal.

To Martin R. Smith, Esq., The Warren, Hayes, Kent (gr. Mr. Blick), for Carnations raised by the exhibitor, noteworthy varieties being Ellen Terry, large white flowers; Audrey Campbell, canary-yellow; Sefton, Bendigo, and Cardinal Wolsey.

To Mr. H. B. May, Edmonton, for Ferns, Selaginellas, and Gymnogrammas.

To Mr. Ladhams, Shirley, Southampton, for hardy flowers—Campanulas, *Scabiosa caucasica*, *Coreopsis lanceolata*, Rudbeckias, single Chrysanthemums, Spiræas, *Michauxia campanuloides*, Pinks, &c.

To M. Louis van Houtte, Ghent, for new *Sonerilas* and *Bertolonias*.

To Messrs. H. Cannell & Sons, Swanley, for Carnations and Picotees, together with some Stocks, dwarf Cannas, and Begonias.

To Messrs. J. Laing & Sons, Forest Hill, for Caladiums. Besides the varieties certificated, the following were noteworthy, viz.: *W. Pfitzer*, red, greenish yellow towards the margins; *Madame Léon Sage*; *Fairy Queen*, white centre, green towards the margins. Also for *Antirrhinums*, *Crotons*, *Tuberous Begonias*, and *Sonerilas*.

To Mr. T. S. Ware (Francis Fell), Tottenham, for Carnations arranged with their own foliage, and several handsome Lilies.

To Messrs. Dobbie & Co., Rothesay, for Violas and Sweet Peas, set up in large bunches. The former included specimens of *Archibald Grant*, purple, and *Sylvia*, creamy white. The Sweet Peas contained many new and beautiful varieties—*Firefly*, scarlet; *Venus*, salmon shaded rosy pink; *Dorothy Tennant*, blue; *Emily Henderson*, pure white; *Primrose*, pale yellow; and *Her Majesty*, very bright rose.

Silver Banksian Medal.

To Messrs. G. Bunyard & Co., Maidstone, for Spiræas, noteworthy being *bumalda*, *callosa*, *crispifolia* (*bullata*), a very dwarf free-blooming variety suitable for rockeries; *Nobleana* and *Lindleyana*.

To Messrs. J. Veitch & Sons, Chelsea, for Carnations, amongst them were exceptionally good blooms of *Mrs. Gifford*, white; *Ruby*, bright rose; *William Robey*, deep crimson; and *Joe Willet*, bright scarlet.

To Mr. W. Rumsey, Waltham Cross, for Roses, including a new variety named *Mrs. Rumsey*, of a lovely blush shade with a pink centre; *A. K. Williams*, *Louis van Houtte*, *Marie Baumann*, &c.

To Messrs. Cutbush & Son, Highgate, for hardy flowers—Lilies, Phloxes, Asters, Carnations, dwarf Cannas, and Achillea The Pearl.

To Mr. J. Walborn, West Kensington, for Carnations loosely arranged amongst Lilies, Palms, Ferns, and dwarf Caladiums.

To Mr. B. R. Davis, Hendford Hill, Yeovil, for single and double Begonias arranged with Ferns.

Bronze Banksian Medal.

To W. H. Myers, Esq., Swanmore Park, Bishops Waltham (gr. Mr. E. Molyneux), for Sweet Peas arranged with sprays of Asparagus.

To Messrs. Wallace & Co., Colchester, for Lilies, including *Lilium longifolium*, *L. giganteum*, *L. Thunbergianum* Van Houttei, and *L. Takesima*, and several forms of *Calochorti* and *Gladioli*.

First Class Certificate.

To *Plumeria alba* (votes, 9 for, 1 against), from F. W. Moore, Esq., Botanic Gardens, Glasnevin. A very rare stove plant bearing clusters of sweet-scented white flowers with yellow centres.

To *Selaginella viridangula* (votes, 16 for), from Messrs. J. Veitch & Sons, Chelsea. A distinct and robust-growing variety with finely cut bright green fronds.

To *Calochortus Plummeræ* (votes, 9 for), from Messrs. Wallace & Co., Colchester. A variety with large mauve-coloured flowers studded with numerous fine golden hairs towards the base of the petals (fig. 23).

To *Tigridia grandiflora lilacea* (votes, 11 for, 2 against), from Messrs. Wallace & Co. Flowers large, bright pink, spotted with crimson at the base on a light ground.

To *Selaginella Lyalli* (votes unanimous), from Mr. H. B. May, Edmonton. A variety of bushy habit, with shining green deeply cut fronds.

Award of Merit.

To Carnation Lady Henry Grosvenor (votes, 8 for, 2 against), from Mr. T. F. Dranfield, Bulwich Park, Wansford. Flowers rosy pink, and very fragrant.

To Carnation Mrs. Eric Hambro (votes, 13 for), from Martin Smith, Esq., Hayes. A large pure white variety.

To Carnation Eudoxia (votes, 8 for, 6 against), from Martin



FIG. 23.—CALOCHORTUS PLUMMERÆ. (*Journal of Horticulture.*)

Smith, Esq., and Mrs. Whitbourn, Ilford (gr. Mr. J. Douglas). Large salmon-pink coloured flowers.

To Carnation Ladas (votes, 7 for, 2 against), from Mrs. Whitbourn (gr. Mr. Douglas). Yellow ground, streaked and margined with red.

To Picotee President Carnot (votes, 10 for), from Mrs. Whitbourn (gr. Mr. Douglas). Yellow ground, edged and deeply streaked with red.

To Picotee Mrs. Douglas (votes, 12 for), from Mrs. Whitbourn (gr. Mr. Douglas). Yellow ground, bright pink edges.

To Carnation The Burn (votes, 14 for), from Mrs. Whitbourn (gr. Mr. Douglas). Flowers of medium size, blush white with soft pink centre.

To Hybrid Sweet Briar Diana Vernon (votes, 11 for), from Lord Penzance, Eashing Park, Godalming. A semi-double variety, with bright rosy pink sweetly scented flowers.

To double Begonia Beauty of Eynsford (votes, 7 for, 5 against), from Messrs. H. Cannell & Sons, Swanley. Flowers large, of good form, and of a soft lemon colour.

To Canna Colibri (votes, 15 for), from Messrs. H. Cannell & Sons. Flowers canary-yellow, lower petals crimson.

To Sonerila Souvenir de Madame van Houtte (votes, 6 for), from Messrs. J. Laing & Sons, Forest Hill. Leaves deep green, heavily spotted with grey.

To Sonerila Duchess de Brabant (votes, 6 for), from M. Louis van Houtte, Ghent. Leaves broad, silvery grey, with distinct green veins.

To Sonerila Madame van Langenhove (votes, 9 for), from M. Louis van Houtte. A pleasing variety with bronzy green leaves and silvery grey spots.

To Bertolonia Triomphe de l'Exposition de Gand (votes unanimous), from M. Louis van Houtte. A very fine variety with deep green leaves freely spotted with rosy pink.

To Bertolonia Comtesse de Kerchove Denterghem (votes unanimous), from M. Louis van Houtte. A handsome form with deep green leaves spotted and veined with bluish pink.

To Bertolonia Margaritacea superba (votes unanimous), from M. Louis van Houtte. A fine variety with bronzy green leaves and large silvery white spots.

To Fuchsia Ballet Girl (votes unanimous), from Messrs. J.

Veitch & Sons, Chelsea. A very fine double-flowered variety with red sepals and creamy white corolla.

To *Caladium* F. W. Moore (votes unanimous), from Messrs. J. Veitch & Sons. A dwarf-growing variety with broad leaves, bright red tinged with purple, deep rose veins.

To *Caladium* Duke of York (votes unanimous), from Messrs. J. Veitch & Sons. A dwarf red-leaved variety with prominent veins.

To *Caladium* Duchess of York (votes unanimous), from Messrs. J. Veitch & Sons. A small and compact-growing variety with rose-coloured leaves, veins and midrib crimson.

To *Caladium* Paquer (votes, 6 for), from Messrs. J. Laing & Sons, Forest Hill. A very large-leaved variety, light ground, carmine veins and deep green blotches, margined red.

To *Caladium* Triomphe de Comte (votes, 5 for), from Messrs. J. Laing & Sons. Leaves large, bright red in the centre, pink towards edges, netted with green, carmine midrib, and distinct green margins.

To *Caladium* Itapoca (votes, 5 for), from Messrs. J. Laing & Sons. A very fine variety with blood-red veins, deep crimson venations, and green margins.

To *Begonia* Lady Tyler (votes unanimous), from Messrs. J. Laing & Sons. A handsome variety with large rich scarlet flowers.

To *Sonerila* François Marchant (votes, 4 for, 3 against), from Messrs. J. Laing & Sons. A variety with deep bronzy green leaves and numerous creamy white spots.

To *Gladiolus* Lemoinei J. H. Krelage (votes, 9 for, 1 against), from Messrs. Wallace & Co., Colchester. Flowers borne on very stout spikes, colour deep red with a silvery white throat.

To *Phlox* Avalanche (votes, 15 for), from Messrs. Collins Bros. & Gabriel, Waterloo Road, S.E. A dwarf white variety with a lemon eye.

To *Carnation* Cantab (votes, 13 for), from Mr. F. Gifford, Tottenham. A clove-scented variety of good form and dark red colour.

To *Retinospora* squarrosa sulphurea (votes unanimous), from Messrs. J. Veitch & Sons, Chelsea. A very pretty Conifer of compact growth, the young shoots tipped with sulphur-yellow.

To *Viola* Iona (votes, 13 for), from Messrs. Dobbie & Co.,

Rothsay. A new and distinct variety, light blue with four broad dark yellow rays running from the yellow eye.

To Rose Madame Pierre Cochet (votes unanimous), from Messrs. Paul & Son, Cheshunt. A lovely Noisette variety with sweetly scented orange-yellow flowers.

Other Exhibits.

G. F. Wilson, Esq., Weybridge, sent *Gladiolus* Alice Wilson.

From Miss Mason, 21 Queen's Mansions, Victoria Street, S.W., came specimens of Christmas Roses, &c.

The Dowager Lady Bowman, Goldwynds, Dorking (gr. Mr. Cornish), staged a group of *Streptocarpus*.

Mr. W. Forrest, Coulter Biggar, Lanarkshire, sent some *Begonia* blossoms.

Mr. R. A. Crowley, Alton, exhibited Carnations.

From Mr. F. Bull, Wormingford, Colchester, came blooms of seven seedling Carnations.

Mr. R. Dean, Ranelagh Road, Ealing, sent *Chrysanthemum lacustre*.

Messrs. Ivery & Son, Reigate, sent a Carnation named Pride of Reigate.

Messrs. Kent & Brydon, Darlington, sent *Amaryllis* × *Vallota*, which the Committee considered to be *Hippeastrum Equestre*.

Mr. J. Douglas, Edenside, Great Bookham, staged some fine Carnations arranged with their own foliage, conspicuous varieties being King Arthur, fine scarlet; Mephisto, deep crimson; Ellen Terry, and Louis Philippe.

Mr. A. Waterer, Knapp Hill, Woking, staged a group of the beautiful new dark crimson *Spiræa bumalda* var. Anthony Waterer.

FLORAL COMMITTEE, AUGUST 14, 1894.

W. MARSHALL, Esq., in the Chair, and nineteen members present.

Awards Recommended :—

Silver Gilt Flora Medal.

To J. P. Morgan, Esq., Dover House, Roehampton (gr. Mr. J. McLeod), for Crotons, including remarkably well-grown and

highly coloured examples of The Countess, Langii, Sunshine, Golden Ring, Etna, and Prince of Wales, arranged with Caladiums, Palms, and Ferns.

Silver Flora Medal.

To Messrs. Kelway & Son, Langport, for Gladioli, Cannas, Delphiniums, Gaillardias, &c.

To Messrs. J. Cheal & Sons, Crawley, for Single, Cactus, and Double Dahlias; also Helianthus, Montbretias, Sweet Peas, Asters, Ceanothus, and sprays of Prunus Pissardi and variegated Acers.

To Mr. H. B. May, Edmonton, for Ferns, including splendid examples of Nephrolepis plumosa, Adiantums, Gleichenias, Gymnogrammes, Platyceriums, and Davallias.

To Messrs. J. Laing & Sons, Forest Hill, for hardy flowers—Hollyhocks, Delphiniums, Asters, Campanulas, Phloxes, Montbretias, &c.

Silver Gilt Banksian Medal.

To the Duke of Northumberland, Syon House, Brentford (gr. Mr. Wythes), for Campanula pyramidalis and C. pyramidalis compacta, which had been grown from seed sown in March 1893. The plants were in pots, and carried enormous branching spikes of beautiful flowers.

Silver Banksian Medal.

To Mr. J. Walker, Thame, for Show and Fancy Dahlias and French Asters.

To Messrs. J. Veitch & Sons, Chelsea, for hardy flowers, amongst which were Phloxes, Delphiniums, Anemones, Sweet Peas, Coreopsis, Pentstemon Norma (flowers scarlet with a white throat), Achillea multifolium rubrum, and Gaillardias.

To Messrs. Paul & Son, Cheshunt, for Phloxes—amongst others Flambeau, large crimson-scarlet flowers; Amazon, white; Baccile, mauve, rosy eye; Eclatante, and Iris were very noticeable.

To Messrs. H. Cannell & Sons, Swanley, for annuals—Dianthus, Marigolds, Godetias, Antirrhinums, and Cockscombs.

To Mr. H. J. Jones, Lewisham, for Tuberous Begonias and hardy flowers.

Bronze Banksian Medal.

To Lady Henry Grosvenor, Bulwich, Wansford (gr. Mr. T. F. Dranfield), for scented-leaved Pelargoniums.

To Sir Trevor Lawrence, Burford Lodge, Dorking (gr. Mr. Bain), for hardy Crinum.

To Lord Gerard, Eastwell Park, Ashford (gr. Mr. H. Walters), for Gloxinias and Streptocarpus.

To Messrs. Dobbie & Co., Rothesay, for Carnations and new Cactus Dahlias.

First Class Certificate.

To Begonia Rajah (votes, 10 for, 2 against), from Messrs. F. Sander & Co., St. Albans. An ornamental-foliaged Begonia with broad bronzy green leaves and light green veins.

To Rubus phœnicolasius (votes, 13 for, 1 against), from Messrs. Kelway & Son, Langport. A very handsome Bramble, bearing large orange-red Strawberry-like berries (fig. 24).

To Adiantum amabile Hemsleyana (votes, 12 for), from Mr. H. B. May, Edmonton. A graceful variety, with very fine pinnae of a bright green colour.

To Pteris biaurita argentea (votes, 8 for), from Mr. H. B. May. A very strong grower with light green fronds; the base of the pinnules silvery grey.

To Pteris serrulata gracilis multiceps (votes, 6 for), from Mr. H. B. May. A variety of bushy habit with beautifully crested deep green fronds.

Award of Merit.

To Carnation Paradox (votes, 12 for), from A. Spurling, Esq., Blackheath Park. Flowers well formed, colour rich scarlet.

To Adiantum amabile plumosum (votes unanimous), from Mr. H. B. May, Edmonton. A decorative Fern with light green fronds and finely cut pinnae.

To Cactus Dahlia Crawley Gem (votes, 12 for), from Messrs. J. Cheal & Sons, Crawley. A fine variety with rich scarlet flowers.

To Carnation Miss Ellen Terry (votes unanimous), from Mr. J. Douglas, Great Bookham. Flowers large, pure white, and sweetly scented.

To Carnation Waterwitch (votes unanimous), from Mr. J. Douglas. Flowers of a beautiful delicate blush.

To Gladiolus Kelwayi Kenneth Kelway (votes, 9 for), from Messrs. Kelway & Son, Langport. A magnificent variety with deep crimson flowers.



FIG. 24.—RUBUS PHENICOLASIUS. (*Journal of Horticulture.*)

To *Gladiolus Kelwayi Vigilant* (votes, 9 for), from Messrs. Kelway & Son. A fine purple self.

To *Gladiolus Lemoinei Xenia* (votes, 4 for), from Messrs. Kelway & Son. Flowers rosy pink.

To *Delphinium Sarah* (votes, 12 for), from Messrs. Kelway & Son. Sky-blue flowers shaded with mauve; white centre.

To *Gladiolus gandavensis Dodo* (votes unanimous), from Messrs. Kelway & Son. Soft pink streaked and shaded with crimson.

To *Gladiolus gandavensis Utopia* (votes unanimous), from Messrs. Kelway & Son. Flowers of a delicate blush, shaded and streaked with rosy pink, the lower segment flushed with sulphur-yellow.

To *Campanula (Platycodon) Mariesi alba* (votes, 7 for, 1 against), from Messrs. R. Veitch & Son, Exeter. A variety with white flowers tinged with blue.

To *Phlox Iris* (votes, 9 for), from Messrs. Paul & Son, Cheshunt. A dwarf variety with blue-purple flowers.

Other Exhibits.

A. Spurling, Esq., Blackheath Park, sent some fine Border Carnations.

From G. F. Wilson, Esq., Weybridge, came some seedling *Gladioli* and a white *Agapanthus*.

Earl Cowley, Panshanger (gr. Mr. Fitt), sent specimens of *Magnolias* and *Zinnias*.

W. H. Myers, Esq., Swanmore Park, Bishops Waltham (gr. Mr. Molyneux), sent a red *Carnation* named Swanmore.

G. Bigers, Esq., Hersham, sent *Carnation Annie Andreae*.

From Mrs. Crawford, Gatton, Reigate (gr. Mr. Slowgrove), came *Lobelia cardinalis* Mrs. Crawford.

Mrs. Dashwood, Crayford (gr. Mr. Gardner), exhibited a *Coleus* named Mrs. Dashwood.

F. Crook, Esq., Streatham Hill, sent *Carnation Mendelssohn*.

Messrs. Webb & Brand, Saffron Walden, sent some fine *Hollyhocks*.

Mr. H. Eckford, Wem, sent Sweet Pea *Blanche Burpee*. The Committee requested that this be tried at Chiswick.

Mr. S. Mortimer, Farnham, sent six varieties of *Coleus*.

Messrs. B. S. Williams & Son, Holloway, sent two *Caladiums* named *Rio de Janeiro* and *Doña Carmen Maceodo*. The Committee asked to see these again.

FLORAL COMMITTEE, AUGUST 28, 1894.

W. MARSHALL, Esq., in the Chair, and nineteen members present.

Awards Recommended:—*Silver Gilt Flora Medal.*

To Messrs. J. Laing & Sons, Forest Hill, for a group of Orchids, Lilies, Begonias, Streptocarpus, Crotons, Dracænas, Alocasias, and rare Exotic Ferns.

Silver Banksian Medal.

To Messrs. Dobbie & Co., Rothesay, for Cactus Dahlias and Phloxes.

To Messrs. H. Cannell & Sons, Swanley, for Gaillardias, Scabiosas, Asters, Chrysanthemums, &c.

Award of Merit.

To Caladium Gurupa (votes, 15 for), from Messrs. J. Laing & Sons, Forest Hill. Leaves of medium size, green, red centre, and distinct green veins.

To Codium (Croton) Madame E. Tournier (votes, 16 for, 1 against), from Messrs. J. Laing & Sons. A broad-leaved variety; green, with a yellow centre and red petioles.

To Anthurium Scherzerianum rotundiflorum sanguineum (votes, 7 for, 5 against), from the Hon. W. F. D. Smith, M.P., Greenlands, Henley-on-Thames (gr. Mr. H. Perkins). Spathe of medium size; colour deep crimson.

Commended.

Strain of Annual Chrysanthemums, exhibited by Messrs. H. Cannell & Sons, Swanley.

Other Exhibits.

Dr. P. H. Emerson, Claringbold, Broadstairs, sent some very interesting seedling Gaillardias.

The Earl of Lonsdale, Lowther Castle, Penrith (gr. Mr. F. Clarke), sent Carnations and Picotees.

C. C. Nichols, Esq., Charlwood House, Lowfield Heath, sent a Cactus Dahlia named Mabel Nichols.

Sir R. G. Musgrave, Bart., Eden Hall, Langwathby (gr. Mr. T. R. Cuckney), exhibited two Carnations named Sir R. Musgrave and Luck of Eden Hall. The Committee requested that they might be tried in the Society's Gardens at Chiswick.

Mr. A. Taylor, Brougham Hall Gardens, Penrith, sent a seedling Carnation named Pride of Brougham. The Committee requested that this also might be tried at Chiswick.

Mr. Herbst, Kew Road, Richmond, exhibited plants of a pretty Marigold, Legion of Honour.

Messrs. F. Sander & Co., St. Albans, sent a very interesting collection of new and little known Sonerilas.

Mr. T. S. Ware (F. Fell), Tottenham, sent Cactus and Pompon Dahlias.

Mr. G. Humphries, Chippenham, sent Dahlias.

Prize.

Class 1.—Twelve Gladioli, distinct. Amateurs. First prize, Silver Flora Medal and £1, to Mr. D. Whitlaw, 22 High Street, Brechin.

FLORAL COMMITTEE, SEPTEMBER 11, 1894.

W. MARSHALL, Esq., in the Chair, and nineteen members present.

Awards Recommended :—

Silver Gilt Flora Medal.

To the Duke of Northumberland, Syon House, Brentford (gr. Mr. Wythes), for a group of plants—Nepenthes, Cissus discolor, Aralias, Crotons, Begonias, Caladiums, and Ferns.

Silver Flora Medal.

To W. Keith, Esq., Cornwallis, Brentwood (gr. Mr. J. T. West), for Show Dahlias.

To Messrs. J. Veitch & Sons, Chelsea, for hardy flowers—Tritomas, Heleniums, Pentstemons, single Chrysanthemums, Anemones, Delphiniums, and Asters.

To Messrs. H. Cannell & Sons, Swanley, for Cactus Dahlias and Asters raised from home-saved seed.

To Messrs. Paul & Son, Cheshunt, for Roses, Phloxes, Gaillardias, Campanulas, Montbretias, and Asters.

To Mr. C. Turner, Slough, for *Hydrangea paniculata grandiflora*.

To Mr. Mortimer, Rowledge, Farnham, for Show and Cactus Dahlias. Noteworthy amongst the Show varieties were John Walker, pure white; Mrs. Kendal, white ground tipped with

purple; and Mr. Harris, crimson-scarlet. The Cactus section included Duke of Clarence, crimson; Delicata, soft pink, lighter centre; St. Catherine, and Bertha Mawley.

To Mr. E. F. Such, Maidenhead, for Cactus and Show Dahlias. Particularly good amongst the Cactus varieties were Apollo, Amphion, and Baron Schröder; and amongst the Show varieties Mrs. Kendal and J. Forbes.

To Messrs. W. Cutbush & Son, Highgate, for hardy flowers—Asters, Dahlias, Carnations, Delphiniums, Hypericums, Lilies, and Helianthus.

Silver Banksian Medal.

To Mrs. Crawford, Gatton, Reigate (gr. Mr. Slowgrove), for two exceptionally well-flowered plants of *Eucharis amazonica*.

To Mr. J. Walker, High Street, Thame, for Show, Fancy, and Cactus Dahlias, and Quilled Asters.

To Mr. W. Salmon, Elder Road, West Norwood, for Dahlias and hardy flowers—Phloxes, Pentstemons, Mignonette, French and African Marigolds, Pansies, and Antirrhinums.

To Messrs. J. Cheal & Sons, Crawley, for Cactus Dahlias—Blushing Bride, white; Sidney H. Hollings, deep crimson; Lancelot, orange, &c.

To Mr. T. S. Ware (Francis Fell), Tottenham, for Cactus Dahlias—Kaiserin, Delicata, John Bragg, Countess of Radnor, &c.

Bronze Banksian Medal.

To Messrs. W. Paul & Son, Waltham Cross, for Roses, including a new China variety named Duke of York.

First Class Certificate.

To *Crococma aurea imperialis* (votes unanimous), from Sir Trevor Lawrence, Bart. A grand variety carrying fine spikes of large orange-coloured flowers.

To *Nepenthes mixta* (votes, 12 for), from Messrs. J. Veitch & Sons, Chelsea. A very fine variety with pitchers 10 inches long, rich crimson, shaded and blotched with red.

Award of Merit.

To Cactus Dahlia Cannell's Velvet (votes, 7 for), from Messrs. H. Cannell & Sons, Swanley. Colour scarlet tinged with blue at the tips.

To Quilled Aster Eynsford Yellow (votes unanimous), from

Messrs. H. Cannell & Sons. A variety with pale lemon-yellow flowers, which may possibly be the progenitor of a true yellow German Aster.

To Decorative Dahlia Mrs. Gordon Shaw (votes unanimous), from Messrs. J. Cheal and Sons, Crawley. A variety with bright crimson-scarlet flowers.

To China Rose Queen Mab (votes unanimous), from Messrs. W. Paul & Son, Waltham Cross. A lovely medium-sized flower of a soft salmon shade flushed with yellow.

To Chrysanthemum Lady Mary Fitzwigram as an early-flowering variety (votes, 15 for), from Mr. H. J. Jones, Lewisham. A very early and free-blooming variety; flowers white, yellow centre.

Other Exhibits.

Mr. H. Wilks, Sandon Hall Gardens, Stone, sent cut flowers of *Stapelia gigantea*.

Messrs. G. & S. Harris, Scad's Hill, Orpington, sent three new Show Dahlias.

Messrs. Hugh Low & Co., Clapton, exhibited a Carnation named H. A. Barnard.

From Mr. H. B. May, Edmonton, came a Tree Carnation named William Robinson.

Messrs. T. Cripps & Son, Tunbridge Wells, sent blossoms of a new Dahlia named Grand Duke Alexis of Russia.

FLORAL COMMITTEE, AT CHISWICK, SEPTEMBER 25, 1894.

W. MARSHALL, Esq., in the Chair, and fourteen members present.

Awards Recommended:—

Gold Medal.

To Messrs. de Rothschild, Gunnersbury House, Acton (gr. Mr. Hudson), for scented-leaved Pelargoniums, about twenty species and varieties being shown. The plants were very large, and remarkably well grown and trained.

Silver Gilt Flora Medal.

To Messrs. Burrell & Co., Howe House, Cambridge, for a

superb collection of Gladioli, with Lilies, Asters, Coreopsis, Gaillardias, Helianthus, &c.

Silver Flora Medal.

To Mr. Mortimer, Farnham, for Dahlias, including Single, Show, and Cactus varieties.

To Mr. Walker, High Street, Thame, for Show and Cactus Dahlias.

Silver Gilt Banksian Medal.

To Mr. T. S. Ware (Francis Fell), Tottenham, for Dahlias, arranged with sprays of Asparagus.

Silver Banksian Medal.

To Mr. Humphries, Kington Langley, Chippenham, for new varieties of Dahlias.

To Messrs. Wallace & Co., Colchester, for Lilies, Montbretias, Calochorti, and Watsonia Meriana.

To Messrs. Keynes, Williams & Co., Salisbury, for Cactus and Show Dahlias.

Bronze Banksian Medal.

To Messrs. de Rothschild, Acton (gr. Mr. Hudson), for fifty varieties of Dahlias, arranged with Asparagus, Ferns, and Grasses.

To Miss Debenham, St. Peters, St. Albans, for hardy flowers, containing very fine specimens of Chrysanthemums, Michaelmas Daisies, and Phloxes.

To Mr. Wells, Earlswood, Redhill, for Chrysanthemums.

First Class Certificate.

To *Zephyranthes carinata* (votes unanimous), from Earl Cowper, Panshanger, Hertford (gr. Mr. Fitt). A Mexican bulbous plant, producing a short scape and large funnel-shaped rose-coloured flowers (fig. 25).

To *Vitis Coignetiae* (votes unanimous), from Messrs. J. Veitch & Sons, Chelsea. A very handsome vine with large leathery leaves, assuming in autumn very rich tints of crimson and scarlet.

To Holly (*Ilex Lawsoniana*) (votes, 6 for) from Messrs. Paul & Son, Cheshunt. A distinct variety with ovate-lanceolate shining green leaves blotched with yellow.

To *Veronica lycopodioides* (votes unanimous), from Messrs.



FIG. 25.—ZEPHYRANTHES CARINATA. (*Journal of Horticulture.*)

Paul & Son. A New Zealand variety of dwarf habit and light green foliage.

To *Veronica cupressoides* (votes, 8 for), from Messrs. Paul & Son. A very dwarf-growing and much-branched variety with light green foliage, resembling a *Cupressus*.

To *Veronica salicornoides* (votes unanimous), from Messrs. Paul & Son. A compact-growing variety with small leaves of a yellowish green shade. A very rare, whipcord, variety.

Award of Merit.

To *Cactus Dahlia Earl of Pembroke* (votes unanimous), from Messrs. Keynes, Williams & Co., Salisbury. A very fine dark purple variety of good form.

To *Cactus Dahlia Harmony* (votes unanimous), from Messrs. Keynes, Williams & Co. Flowers bronzy yellow, fading to light yellow.

To *Cactus Dahlia The Bishop* (votes unanimous), from Messrs. Keynes, Williams & Co. Flowers orange-red.

To *Fancy Dahlia Novelty* (votes unanimous), from Mr. Mortimer, Farnham. Flowers blush, striped and splashed with pink.

To *Eriocnema Sanderæ* (votes unanimous), from Messrs. F. Sander & Co., St. Albans. An ornamental-foliaged plant of dwarf habit, with deep bronzy leaves spotted and striped with silvery grey.

To *Cactus Dahlia Mrs. F. Fell* (votes unanimous), from Mr. T. S. Ware (F. Fell), Tottenham. Flowers white with a yellow centre.

To *Single Dahlia Cissie* (votes unanimous), from Mr. T. S. Ware. Flowers bright pink with a crimson centre.

To *Cactus Dahlia John Welch* (votes unanimous), from Mr. G. Humphries, Kington Langley. Flowers lilac-rose, maroon zone round the disc.

To *Tea Rose Maman Cochet* (votes, 7 for, 1 against), from Messrs. Paul & Son, Cheshunt. Flowers of a pretty delicate pink.

To *Acer purpurascens Nizetti* (votes unanimous), from Messrs. Paul & Son. Leaves green with yellow markings.

To *Gladiolus Cygnet* (votes unanimous), from Messrs. Burrell & Co., Cambridge. Of fine form; colour blush-white, flushed with crimson.

To *Gladiolus Muriel* (votes unanimous), from Messrs. Burrell & Co. Large red flowers with a white throat.

To *Gladiolus Little Dorrit* (votes unanimous), from Messrs. Burrell & Co. Medium size; flowers white, marked with crimson.

To Show *Dahlia Shottisham Hero* (votes unanimous), from Mr. C. Turner, Slough. Flowers blush, edged with rosy pink.

To *Decorative Dahlia Mrs. Turner* (votes unanimous), from Mr. C. Turner. A grand canary-yellow self.

To *Decorative Dahlia Mrs. Horniman* (votes unanimous), from Messrs. J. Cheal & Sons, Crawley. Flowers large, yellow edged with rosy pink.

To *Japanese Chrysanthemum Miss Dorothy Frankland* (votes unanimous), from Mr. W. Wells, Earlswood. A distinct variety, with long narrow petals of a deep golden yellow.

To *Pompon Chrysanthemum Rose Wells* (votes, 6 for), from Mr. Wells. A dwarf rose-coloured early-flowering variety.

Other Exhibits.

Messrs. Paul & Son, Cheshunt, sent *Holly Madame Breon* and *Veronica Kirkii*. The Committee asked to see these again.

From Messrs T. Cripps & Son, Tunbridge Wells, came *Hypericum Moserianum tricolor*. The Committee asked to see plants when in bloom.

FLORAL COMMITTEE, OCTOBER 9, 1894.

W. MARSHALL, Esq., in the Chair, and twenty-two members present.

Awards Recommended :—

Silver Gilt Flora Medal.

To Messrs. Burrell & Co., Cambridge, for *Gladioli*, conspicuous amongst them being *Horace Vernet*, crimson, striped with white; *Matador*; *Caprice*, pink on a white ground; *Rossini*, and *Delila*.

Silver Flora Medal.

To Mr. T. S. Ware (Francis Fell), Tottenham, for *Asters* (*Michaelmas Daisies*) in immense variety; also for *Cactus* and *Single Dahlias*, with some very fine *Nerines*.

To Mr. S. Mortimer, Farnham, for Cactus and Show Dahlias. Amongst the Cactus section, Lady Penzance (yellow), Apollo (scarlet), and Countess of Radnor; and amongst the Show varieties, Duchess of Albany, Mrs. Gladstone, Lord Salisbury, and Novelty were of exceptional merit for so late in the season.

To Messrs. W. Cutbush & Son, Highgate, for Dracænas, Palms, Epacris, the free-flowering Pleione lagenaria, with Pernettyas, Skimmias in fruit, &c.

To Mr. W. J. Godfrey, Exmouth, for Chrysanthemums and Carnations.

Silver Gilt Banksian Medal.

To Messrs. B. S. Williams & Son, Holloway, for Crotons, particularly noticeable being Queen Victoria, superbum, latimaculatum, and Warrenii formosum; also for Cannas and two very fine plants of Miconia magnifica.

Silver Banksian Medal.

To Mr. T. Anstiss, Brill, Bucks, for a splendidly grown plant of Vallota purpurea carrying forty-eight spikes of flowers.

To Mr. W. Wells, Earlswood, for Chrysanthemums, noteworthy varieties being Louise, delicate blush; Miss Amie Hartshorn, white; and W. H. Lincoln, yellow.

To Messrs. J. Veitch & Sons, Chelsea, for hardy flowers—Coreopsis, Tritomas, Gaillardias, Montbretias, &c.

To Messrs. W. Paul & Son, Waltham Cross, for Roses, including splendid examples of Mrs. John Laing, Safrano, Niphotos, and the new bedding variety Duke of York.

Award of Merit.

To Japanese Chrysanthemum Miss E. G. Hill (votes unanimous), from Mr. W. J. Godfrey, Exmouth. Flowers of a delicate soft pink.

To Japanese Chrysanthemum Madame Charles Molin (votes unanimous), from Mr. W. J. Godfrey. A fine creamy-white variety.

To Japanese Chrysanthemum Madame Edward Rey (votes unanimous), from Mr. W. J. Godfrey. A large Incurved variety; rose-pink with light yellow reverse.

To Physalis Franchetii (votes, 11 for), from Messrs. J. Veitch & Sons. A very large and handsome new Winter Cherry from

Japan, having the seed capsules of a bright orange colour (fig. 26).

To *Gladiolus Casilda* (votes unanimous), from Messrs. Burrell & Co., Cambridge. Flowers of a light sulphur-yellow, striped with crimson on the lower petals.

To *Gladiolus Grandis* (votes unanimous), from Messrs. Bur-



FIG. 26.—*PHYSALIS FRANCHETII*.

rell & Co. A rich orange-salmon variety, prominently marked with a white line down the centre of each petal.

To *Gladiolus Leonora* (votes unanimous), from Messrs. Burrell & Co. Flowers of a soft salmon, striped with crimson on the lower petals.

To *Chrysanthemum Frank Wells* (votes unanimous), from Mr. W. Wells, Earlswood. A handsome white-flowered variety with violet lines.

To Chrysanthemum Souvenir de Petite Amie (votes unanimous), from Mr. Wells. A very large form with long narrow white petals.

Other Exhibits.

W. H. Evans, Esq., Forde Abbey, Chard (gr. Mr. J. Crook), sent a group of cut flowers.

Mr. W. J. Godfrey, Exmouth, sent Carnations Lady Gertrude Rolle and Lady Kennaway. The Committee asked to see these again.

FLORAL COMMITTEE, OCTOBER 23, 1894.

W. MARSHALL, Esq., in the Chair, and twenty-one members present.

Awards Recommended:—

Silver Flora Medal.

To H. Tate, Esq., Park Hill, Streatham Common (gr. Mr. Howe), for *Dracenas*, varieties of exceptional merit being *Gladstonei*, deep bronzy green, margined with crimson; *Goldieana*, *Lord Wolseley*, *Mooreana*, and *albo marginata*.

To Messrs. J. Veitch & Sons, Chelsea, for *Chrysanthemums*, amongst which *L'Automne*, *G. C. Schwabe*, *Viviand Morel*, *Charles Davis*, and *Wilfred Marshall* were very conspicuous.

Bronze Banksian Medal.

To W. F. Darnell, Esq., Devonshire House, 99 Stamford Hill (gr. Mr. W. Davis), for *Crotons*, *Dracenas*, *Chrysanthemums*, *Ferns*, and *Grasses*.

To Mr. W. J. Godfrey, Exmouth, for *Chrysanthemums* and *Carnations*.

First Class Certificate.

To *Saintpaulia ionantha* (votes unanimous), from Sir Trevor Lawrence, Bart. (gr. Mr. Bain). (For description see page clxxxv.)

Award of Merit.

To *Begonia margaritacea* (votes, 11 for), from Messrs. J. Veitch & Sons, Chelsea. A dwarf and exceedingly pretty plant; the leaves pale pink with dark venations.

To *Chrysanthemum Louise* (votes, 13 for, 2 against), from

Messrs. J. Veitch & Sons and Mr. W. Wells, Earlswood. A splendid Incurved variety of good form and of a delicate blush shade.

To Japanese Chrysanthemum Mons. C. Molin (votes unanimous), from Mr. W. J. Godfrey, Exmouth. Flowers large, yellow flushed with reddish brown.

To Japanese Chrysanthemum Préfet Probert (votes, 11 for), from Mr. W. J. Godfrey and Mr. Stevens, Putney. A fine massive Incurved variety; colour purple-crimson with light reverse.

To Japanese Chrysanthemum M. Aug. de Lacvievier (votes unanimous), from Messrs. H. Cannell & Sons, Swanley. A variety with brownish red petals margined with golden yellow.

To Chrysanthemum Hairy Wonder (votes unanimous), from Mr. H. J. Jones, Lewisham. Orange-buff coloured petals, covered with short hairs.

Other Exhibits.

Sir Trevor Lawrence, Bart. (gr. Mr. Bain), sent flowers of *Begonia Couronne de Lorraine*, *Salvia Pitcheri*, and *S. splendens grandiflora*. The Committee asked to see a plant of the last named.

From Messrs. de Rothschild, Gunnersbury Park (gr. Mr. Reynolds), came a very fine plant of *Aralia elegantissima* grown in a small pot.

F. W. Moore, Esq., Botanic Gardens, Glasnevin, sent some shoots of *Coprosma lucida* in fruit.

J. Epps, Esq., Beulah Hill, Upper Norwood, exhibited *Poinciana pulcherrima*.

Mr. R. Owen, Maidenhead, sent two Cannas named *Madame Camille Duyas* and *F. Wood*.

Mr. H. J. Jones, Lewisham, sent Chrysanthemums.

Messrs. T. Cripps & Son, Tunbridge Wells, sent *Hypericum Moserianum tricolor*.

From Messrs. J. R. Pearson & Sons, Chilwell, came two promising Chrysanthemums, *M. G. Montigny* and *Sarah Hill*.

Mr. W. Wells, Earlswood, sent Chrysanthemums.

Messrs. B. S. Williams & Son, Upper Holloway, sent Cannas.

FLORAL COMMITTEE, NOVEMBER 13, 1894.

W. MARSHALL, Esq., in the Chair, and eighteen members present.

Awards Recommended:—*Silver Gilt Flora Medal.*

To J. P. Morgan, Esq., Dover House, Roehampton (gr. Mr. McLeod), for Palms, Ferns, Orchids, Bouvardias, and some highly coloured Crotons and Dracænas.

Silver Flora Medal.

To C. E. Shea, Esq., The Elms, Foot's Cray, Kent, for Chrysanthemums, amongst them being excellent specimens of Etoile de Lyon, Dorothy Shea, Niveous, and several new varieties of great merit.

To the St. George's Nursery Co., Hanwell, for very fine Cyclamen.

Silver Gilt Banksian Medal.

To Messrs. H. Cannell & Sons, Swanley, for single and double Zonal Pelargoniums in magnificent condition; also Chrysanthemums and Cannas.

Silver Banksian Medal.

To Mrs. Crawford, Gatton Lodge, Reigate (gr. Mr. Slowgrove), for Chrysanthemums.

To Messrs. Hugh Low & Co., Bush Hill Park, Enfield, for Cyclamen.

Award of Merit.

To *Cosmos bipinnatus grandiflorus* (votes, 6 for, 1 against), from C. B. Simpson, Esq., Worthing. An annual with finely cut light green leaves and pure white flowers.

To *Chrysanthemum Miss Dulcie Schræter* (votes, 8 for), from C. E. Shea, Esq., Foot's Cray. A fine Japanese variety with rich golden yellow flowers.

To *Chrysanthemum Miss Maggie Blenkiron* (votes unanimous), from C. E. Shea, Esq. An Incurved Japanese variety, deep yellow, guard petals flushed with reddish brown.

To *Chrysanthemum Sir Edwin T. Smith* (votes, 10 for), from C. E. Shea, Esq. Flowers large, canary yellow.

To *Chrysanthemum Princess Ena* (votes, 9 for), from Mr. O.

Thomas, Royal Gardens, Frogmore. A sport from Hairy Wonder ; a hirsute variety of a rich rosy pink.

To *Chrysanthemum* Alice Seward (Japanese) (votes, 8 for), from Messrs. H. Cannell & Sons, Swanley. Flowers rich crimson with a silvery reverse.

To *Chrysanthemum* Mrs. R. Filkins (votes, 10 for, 1 against), from Messrs. H. Cannell & Sons. A Decorative Japanese variety with narrow petals of a deep yellow.

To *Chrysanthemum* Mrs. W. J. Godfrey (votes, 10 for), from Mr. W. J. Godfrey, Exmouth. A pure white hirsute variety.

To *Chrysanthemum* Garnet (Japanese) (votes, 5 for, 3 against), from Mr. W. J. Godfrey. Flowers very deep crimson-purple with a pink reverse.

To *Chrysanthemum* Mrs. Dr. Ward (votes, 11 for), from Mr. W. J. Godfrey. A hirsute Japanese variety, reddish brown with a yellow reverse.

To *Pteris cretica cristata* Torrancei (votes, 10 for, 1 against), from Messrs. Stroud Brothers, Green Lanes, Finsbury Park. A very handsome variety with deep green fronds crested at the tips.

To *Chrysanthemum* John Lightfoot (Japanese) (votes, 11 for), from Mr. R. Owen, Maidenhead. Flowers soft pink.

To *Chrysanthemum* J. Bidencope (votes, 7 for, 2 against), from Mr. R. Owen. Flowers purplish red with a lighter reverse.

To *Chrysanthemum* Owen's Perfection (Anemone) (votes, 5 for, 1 against), from Mr. R. Owen. A very handsome variety of a delicate pink colour.

To *Chrysanthemum* Purity (votes, 10 for), from Mr. Wells, Redhill. A very beautiful single variety, with pure white incurved petals and handsome yellow centre.

Other Exhibits.

F. W. Moore, Esq., Botanic Gardens, Glasnevin, sent four varieties of *Kniphofias*.

From Earl Cowley, Panshanger, Hertford (gr. Mr. Fitt), came a new *Chrysanthemum* named Cecil Wray.

C. J. Lucas, Esq., Horsham (gr. Mr. Duncan), exhibited a very fine *Amaryllis* named Mildred. The Committee asked to see it again.

T. B. Haywood, Esq., Woodhatch, Reigate (gr. Mr. C. J. Salter), sent a new *Chrysanthemum* named James Lynch.

Sir Charles Isham, Lamport Hall, Northampton, sent *Purettia flexilis*.

Dr. George Walker, Wimbledon, sent *Chrysanthemum Dolly*.

From A. Kingsmill, Esq., Harrow Weald, came some very well-berried shoots of *Pernettya mucronata* varieties.

Mrs. Jones, Queenford Place, Sudbury, Harrow, sent some single *Chrysanthemums*.

Mr. H. B. May, Edmonton, sent *Dracæna General Roberts* and *Lastrea atrata variegata*.

Mr. W. Seward, Hanwell, exhibited two new *Chrysanthemums*.

From Messrs. J. Veitch & Sons, Chelsea, came *Begonia John Heal*, a very useful winter-flowering variety.

Mr. W. J. Godfrey, Exmouth, sent *Chrysanthemums*.

Mr. R. Owen, Maidenhead, staged a group of *Chrysanthemums*.

Prizes.

Class 1.—*Chrysanthemums*, collection of cut blooms, distinct; each bloom to be shown as cut from the plant, without any dressing, and to stand well above the moss covering the box. Sticks or wires for support admissible. Amateurs. First prize, £2. 10s., to Mr. G. Wythes, gardener to the Duke of Northumberland, Syon House, Brentford. Second prize, £1. 10s., to Mr. J. F. McLeod, gardener to J. P. Morgan, Esq., Dover House, Roehampton.

Class 2.—New *Chrysanthemums*, twelve cut blooms, not less than eight distinct varieties sent out in or since the year 1891. Amateurs. First prize, £2, to Mr. J. F. McLeod.

Class 3.—Group of *Chrysanthemums*, distinct (Pompons and Singles excluded), each plant to carry not less than twenty-four blooms. No artificial training allowed other than simple staking out of the branches to avoid crowding. Pinching or cutting back the plants in a young stage optional. Amateurs. First prize, £4, to Mr. G. Wythes.

FLORAL COMMITTEE, NOVEMBER 27, 1894.

W. MARSHALL, Esq., in the Chair, and twenty-one members present.

Awards Recommended:—

Silver Gilt Flora Medal.

To Mr. H. J. Jones, Lewisham, for an enormous group of Chrysanthemums arranged in large vases with Ferns, long sprays of Smilax and Asparagus, and also with the dyed foliage of Oaks, &c. The Committee entered a unanimous protest against the use of dyed foliage, and intimated that they could not recommend any award if its use was repeated.

Silver Banksian Medal.

To Mr. Wells, Earlswood, Redhill, for Chrysanthemums, amongst which were excellent specimens of Mdlle. Thérèse Rey, Miss Minnie Hartshorn, W. H. Lincoln, and Lord Brooke.

To Mr. W. Salmon, Elder Road, West Norwood, for wreaths, bouquets, &c.

To Messrs. Hugh Low & Co., Clapton, for some beautiful Cyclamen.

Bronze Banksian Medal.

To Mr. A. Waterer, Knap Hill, Woking, for Pernettyas.

First Class Certificate.

To *Primula capitata*, Loxwood var. (subject to its being distinct from *P. capitata major*) (votes unanimous), from C. J. Lucas, Esq., Warnham Court, Horsham (gr. Mr. Duncan). A very fine variety with exceptionally deep blue flowers. [At the time of going to press no evidence has reached us of its being distinct from *P. capitata major*.—EDS.]

Award of Merit.

To *Ruellia macrantha* (votes, 9 for), from Sir Trevor Lawrence, Bart. (gr. Mr. Bain). A pretty plant with pale green lanceolate leaves and rosy pink funnel-shaped flowers.

To *Reinwardtia tetragyna* (votes, 9 for), from Sir Trevor Lawrence, Bart. (gr. Mr. Bain). A useful and free-flowering plant with pale green ovate-lanceolate leaves and deep canary-yellow flowers.

To *Chrysanthemum Owen's Crimson* (votes, 9 for, 3 against), from Mr. R. Owen, Maidenhead. Flowers deep purple-crimson with a lighter reverse.

To *Chrysanthemum Mons Meg* (votes, 8 for, 6 against), from Mr. R. Owen. Flowers brownish red with a yellow reverse.

To *Chrysanthemum Owen's Brilliant* (votes, 9 for), from Mr. R. Owen. Flowers deep red.

To *Chrysanthemum Madame Carnot* (votes, 15 for), from Mr. Wells, Earlswood, and Mr. H. J. Jones, Lewisham. A magnificent variety with long narrow pure white petals.

To *Chrysanthemum Duchess of York* (votes unanimous), from Mr. H. J. Jones. A fine variety with long petals of a rich yellow colour.

To *Begonia Sander's Winter Queen* (votes, 11 for), from Messrs. F. Sander & Co., St. Albans. A cross between *B. Socotrana* and *B. Rex*. Large handsome leaves, deep green in the centre, spotted with grey, bright green towards the margins, and speckled with silvery grey. Flowers pink.

Other Exhibits.

From Captain Torrens, Baston Manor, Hayes Common (gr. Mr. Pascoe), came three new *Chrysanthemums*.

Mr. R. Gilbert, Burghley Gardens, Stamford, sent a *Chrysanthemum* named *W. Cecil*, a sport from *W. H. Lincoln*.

Mr. J. Tucker, Caterham, sent some seedling *Chrysanthemums*.

Mr. T. S. Ware (Francis Fell), Tottenham, sent *Gaultheria procumbens* and *Narcissus monophyllus*.

Mr. J. Smith, St. Leonards Road, Windsor, showed *Chrysanthemum Royal Windsor*.

From Messrs. F. Sander & Co., St. Albans, came some winter-flowering *Begonias*.

Messrs. J. Veitch & Sons, Chelsea, staged a very fine specimen of *Heliamphora nutans*.

FLORAL COMMITTEE, DECEMBER 11, 1894.

W. MARSHALL, Esq., in the Chair, and twenty members present.

Awards Recommended:—

Silver Flora Medal.

To Messrs. J. Laing & Sons, Forest Hill, for *Crotons*,

Dracænas, Cyclamen, Bouvardias, Orchids, Palms, Ferns, and Solanums.

To Mr. Owen, Maidenhead, for Chrysanthemums.

Silver Banksian Medal.

To the Hon. G. M. Fortescue, Dropmore (gr. Mr. Herrin), for beautiful cones of *Cedrus atlantica*, *C. Deodara*, *Cupressus macrocarpa*, *C. Goveniana*, *Picea nobilis*, and *Wellingtonia gigantea*, &c.

Award of Merit.

To *Chrysanthemum King of Plumes* (votes unanimous), from Mr. Owen, Maidenhead. A decorative variety with medium-sized flowers, the deep golden yellow florets being forked at the tips.

To *Chrysanthemum Bellum* (votes, 13 for), from Mr. Owen. Large creamy-white flowers flushed with rose on the lower petals.

Other Exhibits.

F. W. Moore, Esq., Botanic Gardens, Glasnevin, sent specimens of *Nerine Mansellii*, *Bilbergia Windii*, and *Iris stylosa*.

From Col. Halford Thompson, East Cliff, Teignmouth, came a basketful of plants grown in "Jadoo fibre."

Mr. C. Russell, Clayton, West Huddersfield, sent *Adiantum cuneatum* Kayei.

AWARDS

RECOMMENDED BY THE FLORAL COMMITTEE TO VARIOUS PLANTS
GROWN AT CHISWICK.

I.—MISCELLANEOUS PLANTS, 1894.

First Class Certificate.

To *Moræa iridioides* (R.H.S.). Flowers borne on spikes several feet in length. Standards mauve, margined with white; falls white, with a deep golden yellow stripe down the centre. A rare plant.

Highly Commended (× × ×).

To *Phlox Le Destin*, from Mr. Forbes, Hawick, N.B. White shaded purple, rosy eye. Dwarf habit.

To Phlox Matador, from M. V. Lemoine, Nancy. Deep orange-scarlet, dark eye. Medium height.

To Phlox W. Veitch, from Mr. Forbes. White flushed with rose, crimson eye. Medium height.

To Fuchsia *gracilis variegata* (R.H.S.). A beautiful dwarf variety with greyish green leaves and irregular creamy white margins.

To Carnation Duchess of Portland, from Mr. Lamb, Burton Joyce. White beautifully striped with rosy pink.

To Carnation Achilles (R.H.S.). Light ground striped with red.

To Carnation Sunrise, from Mr. Forbes. Scarlet flaked with crimson.

To Carnation Heinrich Angel, from Mr. Forbes. Bluish lilac flaked with scarlet and purple.

To Carnation W. P. Milner (R.H.S.). White ; very fine.

To Carnation Chiswick Red (R.H.S.). Bright red ; very free bloomer.

To Carnation Chiswick Rose (R.H.S.). Very bright rose. A distinct and beautiful variety.

To Carnation Mrs. Walker (R.H.S.). Yellow ground flaked with lilac.

To Pentstemon President Carnot, from M. V. Lemoine. Very large ; crimson and pink, blush throat.

To Pentstemon Jean Mace, from M. V. Lemoine. Large, bright red, light-coloured throat striped with crimson.

To Iris W. Marshall (R.H.S.). Standards bronzy yellow, falls crimson. A beautiful variety.

To Antirrhinum Brilliant (R.H.S.). Very bright crimson-scarlet with a white throat.

To Pelargonium Joseph de Maestres, from M. V. Lemoine. A very free-growing Ivy-leaved variety, carrying immense trusses of rosy magenta flowers shaded with salmon towards the centre.

To Pelargonium Hippolyte Caine, from M. V. Lemoine. White in the centre, rosy carmine towards the edges. A pretty fancy variety.

To Pelargonium Ryecroft Surprise, from Mr. Jones, Lewis-ham. A handsome Ivy-leaved variety carrying large trusses of pretty salmon-pink flowers.

Commended (× ×).

To Carnation Cheshire Favourite, from Mr. Mercer, Higher Bebington. Salmon-pink with fringed margins. Very large and handsome, and a free bloomer.

To Pentstemon Charles Normand, from M. V. Lemoine. Bright pink, blush-coloured throat, with deep pink markings.

II.—MIGNONETTE, 1894.

M. E. Benary, of Erfurt, sent seeds of eleven reputed varieties of Mignonette, which were sown in April in the open ground.

Distinct varieties of Mignonette are not at present very numerous, but by careful selection several markedly distinct ones have been obtained, which are very great improvements on the old or common variety. The variations, it may be noted, are chiefly due to the strength or vigour of the plants, the size of the flower spikes, and the colour of the anthers, which vary from pale greenish white to dull yellow and various shades of almost crimson.

The following is a brief description of the plants raised from M. Benary's seeds:—

1. *Grandiflora ameliorata*, a slender grower of loose straggling habit; pale green foliage; spikes large; anthers pale red.

2. *Grandiflora aurea*, a compact grower of somewhat bushy habit, with rich shining green foliage; spikes of medium size; anthers dull yellow. Very distinct.

3. *Grandiflora Crimson Queen*, of spreading habit; height fifteen inches; foliage light green; spikes large; anthers pale crimson.

4. *Grandiflora spiralis*, a fine variety with bright green foliage, and long spiral spikes with pale red anthers. Very distinct

5. *Grandiflora Victoria*, a robust grower of medium height, with glossy green leaves and stout, erect, beautifully formed spikes; anthers deep red. A grand variety.

6. *Grandiflora multiflora compacta*, a dwarf and compact

variety with rich green foliage and erect spikes; anthers red. A very useful variety.

7. *Grandiflora Gabriel*, similar to grandiflora Victoria.

8. *Gigantea pyramidalis*, similar to grandiflora ameliorata.

9. *Machet*, a sturdy grower, with broad rich green leaves and well-formed spikes; anthers crimson, sweetly scented. One of the best.

10. *Parsons' White*, a very fine variety of straggling habit, with rich shining green foliage and long slender spikes; the greenish white anthers are almost wanting, and consequently very little seed is produced. Very distinct.

11. *Pumila erecta*, similar to grandiflora multiflora compacta.

III.—SWEET PEAS, 1894.

A collection of Sweet Peas, numbering fifty-nine varieties, was grown in the Society's Garden. The seeds were sent by Mr. Eckford, Wem; Messrs. Laxton Bros., Bedford; Messrs. Vilmorin et Cie., Paris; Messrs. Dobbie & Co., Rothesay; and Messrs. J. Wrench & Sons, King William Street, E.C.

The season being favourable, the trial proved very satisfactory.

The Committee examined the collection on July 13, and recommended $\times \times \times$, *i.e.* Highly Commended, to the following varieties:—

Apple Blossom, from Mr. Eckford.

Dorothy Tennant ,, ,,

Empress of India ,, ,,

Gaiety ,, ,,

Indigo King ,, ,,

Lady Penzance ,, ,,

Mrs. Sankey ,, ,,

SHORT DESCRIPTIVE NOTES.

1. Apple Blossom $\times \times \times$ (Eckford). Standards bright rosy pink; wings tinged with blush.

2. Blushing Beauty (Eckford). Standards broad, soft pink.

3. Boreatton (Eckford). Maroon.

4. Captain of the Blues (Eckford). Standards dark purple-blue, with paler wings.

5. Cardinal (Eckford). Clear crimson-scarlet.
6. Carmen Sylva (Laxton Bros.). Standards pink and crimson; wings blue.
7. Countess of Radnor (Eckford). Standards pale mauve; wings lilac.
8. Delight (Eckford). White, with a delicate blush shade.
9. Dorothy Tennant $\times \times \times$ (Eckford). Very handsome reddish mauve self.
10. Duchess of Edinburgh (Eckford). Standards broad, rich rosy carmine; wings rose, shaded violet.
11. Duchess of York (Eckford). Standards and wings large, white flushed with rosy purple.
12. Duke of Clarence (Eckford). Standards rich claret; wings tinged with violet.
13. Duke of York (Eckford). Standards bright rosy pink; wings primrose and white.
14. Eliza Eckford (Eckford). Standards pink, flaked with deep rose on the back; paler wings, tinged with rose.
15. Emily Eckford (Eckford). Standards broad, bluish mauve; wings blue.
16. Emily Henderson (Wrench & Sons and Dobbie & Co.). Standards and wings white, possessing much substance.
17. Empress of India $\times \times \times$ (Eckford). Standards rosy pink; wings white.
18. Etna (Laxton Bros.). Flowers large; the standards red, crimson at base; wings purple.
19. Firefly (Eckford). Bright scarlet self.
20. Gaiety $\times \times \times$ (Eckford). Standards white striped with purple-rose; wings white and lilac.
21. Her Majesty (Eckford). A very handsome variety; colour soft rosy pink.
22. Huntsman (Laxton Bros.). Standards deep red flushed with violet; wings violet.
23. Ignea (Eckford). Standards crimson-scarlet; wings scarlet, shaded purple.
24. Imperial Blue (Eckford). Blue, shaded mauve.
25. Indigo King $\times \times \times$ (Eckford). Standards deep maroon-purple; wings purplish blue.
26. Isa Eckford (Eckford). Standards pale pink; wings creamy white.

27. Lady Beaconsfield (Eckford). Standards salmon-pink ; wings creamy white.

28. Lady Penzance $\times \times \times$ (Eckford). Beautiful soft rose-coloured standards and wings.

29. Lemon Queen (Eckford). Standards very pale pink flushed with lemon ; wings white.

30. Lottie Eckford (Eckford). Standards light mauve, darker on the reverse ; wings white, margined with mauve.

31. Maroon (Eckford). Standards deep maroon ; wings shaded violet.

32. Meteor (Eckford). Standards reddish salmon ; wings rosy pink with purple veins.

33. Blanche Ferry (Vilmorin et Cie.). Standards rosy pink ; wings pale rose.

34. Miss Hunt (Eckford). Standards salmon-red ; wings pale pink.

35. Mrs. Eckford (Eckford). Primrose colour.

36. Mrs. Gladstone (Eckford). Standards broad, pale blush ; wings blush, margined with soft pink.

37. Mrs. Joseph Chamberlain (Eckford). Rosypink and white.

38. Mrs. Sankey $\times \times \times$ (Eckford). A very fine variety, with large white flowers.

39. Monarch (Eckford). Standards broad, of a rich deep claret colour ; wings deep blue.

40. Novelty (Eckford). Standards orange-rose ; wings mauve, shaded rose.

41. Ovid (Eckford). Rosy pink.

42. Peach Blossom (Eckford). Standards salmon-pink ; wings soft pink.

43. Primrose (Eckford). Very like Mrs. Eckford.

44. Princess Mary (Wrench & Sons). A pretty variety ; colour rich heliotrope or lavender.

45. Princess of Wales (Eckford). Light ground, striped and shaded with mauve.

46. Princess Victoria (Eckford). Standards salmon-red ; wings rosy pink, shaded with mauve.

47. Prince of Orange (Eckford). Orange-salmon ; small flowers.

48. Purple Prince (Eckford). Standards rich purple ; wings bluish purple.

49. Queen of England (Eckford). White.
50. Resplendent (Laxton Bros.). Bright scarlet.
51. Rising Sun (Laxton Bros.). Standards orange-red ; wings pale rose.
52. Royal Robe (Eckford). Standards soft pink ; lighter coloured wings.
53. Senator (Eckford). Standards broad, suffused and striped with chocolate on a creamy ground.
54. Splendour (Eckford). Flowers large and of fine form ; colour bright rosy pink, shaded with crimson.
55. Stanley (Eckford). A very fine large-flowered variety ; colour deep maroon. An improvement on Boreatton.
56. The Bride (Eckford). Blush white.
57. The Queen (Eckford). Standards rosy pink ; wings mauve.
58. Venus (Eckford). Standards broad, soft salmon, shaded with rosy pink.
59. Waverley (Eckford). Standards violet-purple ; wings pale blue, shaded with rose.

IV.—CANNAS, 1894.

Specimens of all the varieties were grown in pots under glass, where they did exceedingly well, the plants growing freely and flowering in great profusion.

These new Cannas seem particularly well suited for this mode of culture, and are specially useful for conservatory decoration even as foliage plants. Of the collection planted in the open ground, very few succeeded well or flowered. This was partly owing to the cold wet season of 1894. In a warm season better results would no doubt be obtained.

The Canna requires liberal treatment—good free loamy soil, with plenty of manure and abundance of water when growing freely.

The collection, representing sixty-five reputedly distinct varieties, was presented by—

Messrs. Allen & Son, New York.

Mr. J. Beesley, Denbies, Dorking.

Mr. H. Herbst, Kew Road, Richmond, S.W.

M. V. Lemoine, Nancy.

Messrs. Paul & Son, Cheshunt.

Mr. W. Pfitzer, Stuttgart.

Messrs. J. Veitch & Sons, Chelsea.

Messrs. Vilmorin et Cie., Paris.

They were examined on several occasions by the Committee, who recommended $\times \times \times$, *i.e.* Highly Commended, to the following :—

Alphonse Bouvier, from M. V. Lemoine.

Antoine Barton, from Messrs. Paul & Son.

Capucine, from M. V. Lemoine.

Duchesse de Montmartre, from M. V. Lemoine.

Françoise Crozy, from M. V. Lemoine and Messrs. Paul & Son.

Gloire de Empel, from Messrs. Vilmorin et Cie.

Jules Chrétien, from Messrs. Vilmorin et Cie. and Messrs. J. Veitch & Sons.

J. D. Cabos, from M. V. Lemoine.

Königin Charlotte, from Mr. W. Pfitzer.

Madame Crozy, from Mr. H. Herbst and Messrs. Paul & Son.

Progression, from Messrs. Paul & Son.

Professor David, from M. V. Lemoine and Messrs. J. Veitch & Sons.

Quasimodo, from Messrs. Vilmorin et Cie.

T. W. Turner, from R.H.S.

The following is a brief description of the varieties tried :—

1. Admiral Courbet (Veitch & Sons). Flowers canary-yellow, large, spotted and streaked with brownish red.

2. Admiral Gervais (Paul & Son). Flowers orange-scarlet ; petals narrow, margined with canary-yellow.

3. Alphonse Bouvier $\times \times \times$ (Lemoine). Flowers rich deep crimson. Very handsome.

4. Antoine Chantin (Vilmorin et Cie.). Flowers salmon-red, clear and distinct.

5. Antoine Barton, syn. L. E. Bally $\times \times \times$ (Paul & Son). Flowers yellow, large, heavily spotted and streaked with crimson.

6. Antoine Crozy (Veitch & Sons and Vilmorin et Cie.). Flowers borne in trusses, crimson-scarlet ; dwarf habit.

7. Capitaine de Suzzoni (Lemoine and Vilmorin et Cie.). Flowers canary-yellow, spotted with brown.

8. Capucine × × × (Lemoine). Flowers soft orange-scarlet; dwarf habit.

9. Charles Moore (Paul & Son and Lemoine). Flowers deep yellow; petals broad, splashed with crimson.

10. Comte de Estoile (Paul & Son). Flowers canary-yellow; petals round, spotted with crimson.

11. Comte de Ganay (Paul & Son). Flowers salmon-red, golden edges; medium height.

12. Comte Horace de Choiseul (Vilmorin et Cie.). Flowers large, bright cherry-purple; dwarf habit. A splendid variety.

13. Doyen Jean Sisley (Lemoine). Flowers scarlet; foliage deep purple.

14. Duchesse de Montmartre × × × (Lemoine). Flowers large, yellow, spotted with brown.

15. Eclatante (Lemoine). Flowers brilliant orange-scarlet, blotched with yellow and brown at base; leaves long, dull green.

16. Ehmanni (Beesley and Paul & Son). Flowers rosy crimson. Very distinct.

17. Felix Crousse (Veitch & Sons). Flowers bright scarlet, shaded orange.

18. Flaccida (Paul & Son). Flowers yellow. A clear self. Very fine.

19. Flamboyant (Veitch & Sons). Flowers crimson; petals narrow, lower portion streaked with yellow.

20. Francisque Morel (Lemoine). Flowers rich crimson.

21. Françoise Crozy × × × (Lemoine and Vilmorin et Cie.). Flowers large, orange; petals broad, edged with clear canary-yellow. Very free bloomer; distinct and handsome.

22. Gloire de Empel × × × (Vilmorin et Cie.). Flowers rich crimson-scarlet, and bronzy green foliage.

23. Gloire du Montet (Lemoine). Flowers very bright scarlet, with irregular golden edges. Not unlike Königin Charlotte.

24. Guillaume II. (Lemoine). Flowers rich scarlet.

25. Grandiflora picta (Veitch & Sons). Flowers small, striped and spotted with red. Tall grower.

26. Geoffroy St. Hilaire (Vilmorin et Cie.). Flowers orange-red, foliage very rich dark purple.

27. Henry A. Dreer (Lemoine). Flowers dull crimson, petals narrow; foliage streaked with bronzy green

28. Henri de Vilmorin (Vilmorin et Cie.). Flowers very fine orange-scarlet, shaded salmon; foliage rich bronzy green.

29. Jacqueminot Bonniford (Paul & Son). Flowers large, rich orange; foliage purple and green.

30. Jean Charton (Veitch & Sons). Flowers rich orange-scarlet.

31. J. D. Cabos $\times \times \times$ (Lemoine). Flowers large, rich orange-yellow; foliage bronzy green, dwarf habit. Very handsome.

32. Jules Chrétien $\times \times \times$ (Veitch & Sons and Vilmorin et Cie.). Flowers rich crimson-scarlet; foliage very dark; dwarf habit. Very free-flowering variety.

33. Königin Charlotte $\times \times \times$ (Pfitzer). Flowers large, clear orange-scarlet, with rich golden yellow margins. One of the best.

34. L'Avenir (Veitch & Sons). Flowers of medium size, orange-scarlet, blotched with yellow at base of petals.

35. L. E. Bally, syn. Antoine Barton (Paul & Son).

36. Lohengrin (Lemoine). Flowers soft salmon, shaded orange.

37. Madame Bernard (Veitch & Sons). Flowers scarlet, with narrow canary-yellow margins.

38. Madame Crozy $\times \times \times$ (Herbst and Paul & Son). Flowers brilliant orange-scarlet, with rich golden yellow margins; dwarf habit.

39. Marquis de l'Aigle (Paul & Son). Flowers of medium size, orange, margined yellow.

40. Miss Sarah Hill (Paul & Son). Flowers purplish crimson; dwarf habit. Distinct.

41. Mons. Laforcade (Vilmorin et Cie.). Flowers orange-red; petals large; foliage deep bronzy green; dwarf habit.

42. Mr. Soubeyran (Veitch & Sons). Flowers large, scarlet petals edged with golden yellow.

43. Paul Bruant (Paul & Son). Flowers rich crimson; petals broad. Very fine; dwarf habit.

44. Paul Bert (Herbst). Flowers crimson, dark foliage.

45. Paul Sigrist (Paul). A magnificent variety. Flowers crimson-purple, with golden yellow margins.

46. P. Marquant $\times \times \times$ (Lemoine). Flowers large, brownish yellow, streaked with a darker shade; dark foliage.

47. Pioneer (Paul & Son). Flowers vermilion; petals large, roundish, edged with yellow; dwarf habit. Very handsome.

48. Primrose (Paul & Son). Flowers of medium size, rich clear yellow; dwarf habit.

49. President Carnot (Vilmorin et Cie.). Flowers very large, orange-scarlet, faintly spotted with crimson; rich purple foliage. Very distinct.

50. President Hardy (Paul & Son). Flowers salmon, with a deeper shade, edged with canary-yellow; dwarf habit.

51. Professor David $\times \times \times$ (Lemoine and Veitch & Sons). Flowers orange-scarlet, shaded bronze, with irregular golden edges.

52. Progression $\times \times \times$ (Paul & Son). Flowers large, rich canary-yellow, spotted with crimson. Very fine.

53. Quasimodo $\times \times \times$ (Vilmorin et Cie.). An improvement on Madame Crozy.

54. Senateur Montefiore (Vilmorin et Cie.). Flowers orange-red, edged with golden yellow.

55. Sophie Buchner (Paul & Son). Flowers clear vermilion; dwarf habit. Very free bloomer.

56. Souvenir d'Asa Gray (Lemoine and Paul & Son). Flowers large, orange-scarlet; dwarf habit.

57. Souvenir de F. Gaulin (Paul & Son). Flowers canary-yellow, freely spotted and streaked with crimson. Very pretty.

58. Star of '91 (Allen & Son and Lemoine). Flowers large, clear vermilion; petals roundish, slightly margined with yellow; dwarf habit.

59. The Garden (Vilmorin et Cie.). Flowers deep saffron, spotted and streaked with red.

60. Trocadéro (Vilmorin et Cie.). Flowers orange-scarlet.

61. Thomas S. Ware (Paul & Son). Flowers vermilion; petals roundish, edged with yellow.

62. T. W. Turner $\times \times \times$ (R.H.S.). Flowers rich canary-yellow, streaked and blotched with brown. Very handsome.

63. Ulrich Brunner (Veitch & Sons). Flowers deep orange-scarlet, slightly spotted with crimson.

64. Victor Hugo (Paul & Son). Flowers rich crimson; foliage deep purple.

65. W. Pfitzer (Lemoine). Flowers scarlet, shaded magenta; dwarf habit. Very pretty.

V.—PINKS, 1894.

A somewhat extensive collection of Pinks have been grown in the Society's Gardens, of which the following brief notes have been taken. As hardy border flowers there are few plants more easily cultivated, or more deserving of attention.

They were duly examined by the Floral Committee, who recommended the following awards:—

Highly Commended (× × ×).

Annie Bolton, from Mr. Dean, Ealing.

Beauty (Laced), from Mr. Turner, Slough.

Charmer, from Mr. Dean.

Cowley White, from Mr. Lakin, Oxford.

Empress of India, from Mr. Turner.

Ernest Ladhams, from Mr. Ladhams, Shirley, Southampton.

Juno, from Mr. Dean.

Rosamond, from Mr. Dean.

Rosy Circle, from Mr. Dean.

Rosy Morn, from Mr. Turner.

Souvenir de Sale, from Mr. Dean.

Commended (× ×).

Beauty, from Mr. Dean.

GENERAL COLLECTION.

1. Alba magnifica (Forbes, Hawick, N.B.). A fine variety with large flowers; white, creamy white centre, fimbriated edges.

2. Alfred Stansell (Forbes). White, laced purplish crimson. Very free bloomer.

3. Annie Bolton × × × (Dean). White, very dark centre, fimbriated edges. Very free bloomer.

4. Beauty × × × (Turner). Flowers large; red, laced crimson. Dwarf habit.

5. Beauty × × (Dean). White, red centre.

6. Beauty of Bath (Hooper, Bath). Delicate rose, laced bright pink.

7. Bertram (Turner). Flowers large; rose, laced purple. Free bloomer.

8. Bordeil (Turner). Rose, laced deep red.

9. Charmer $\times \times \times$ (Dean). Delicate blush, centre rosy red, fimbriated edges.

10. Clipper (Forbes). Red, laced crimson.

11. Cowley White $\times \times \times$ (Lakin). A magnificent variety with large pure white flowers.

12. Daniel O'Rourke (Forbes). Flowers of medium size; red, laced purple.

13. Delicata (Dean). White, tinged with red in the centre; cut edges.

14. Delight (Dean). A variety with large soft pink flowers, with darker centres.

15. Emblem (Forbes). Red, laced pink.

16. Emerald (Forbes). Flowers large; crimson-purple, laced bright pink.

17. Empress of India $\times \times \times$ (Turner). Dark purple, laced red. Very showy.

18. Ernest (Forbes). Red, laced crimson. Very fine.

19. Ernest Ladhams $\times \times \times$ (Ladhams, Shirley, Southampton). Flowers very large and handsome; colour soft pink, deep red centre.

20. Eurydice (Turner). Red, laced rosy purple; compact and well-formed flowers.

21. Fascination (Laxton, Bedford). Similar to Empress of India.

22. George White (Turner). Very large flowers; purple, laced red.

23. Henry Hooper (Turner). Flowers large; reddish purple, laced bright pink. Very handsome.

24. Her Majesty (Hooper). Flowers large and full; white, creamy white centre. Very fragrant.

25. Hetty Dean (Dean). Very bright pink. Dwarf habit.

26. Jessica (Turner). Large flowers; deep red, laced pale rose.

27. John Melville (Forbes). Red. Very fine.

28. Juno $\times \times \times$ (Dean). White, red centre. Strong grower.

29. Leah (Forbes). Similar to Rosy Morn.

30. Lena (Forbes). Rosy purple, laced crimson.

31. Lilacina (Dean). Bright rosy pink, fimbriated edges.

32. Luffra (Forbes). Crimson, laced red. Free bloomer.

33. Marchioness of Salisbury (Laxton). Deep red, laced crimson.
34. Masterpiece (Forbes). Red, laced deep maroon.
35. Maude (Forbes). Similar to Empress of India.
36. Minerva (Turner). Similar to Marchioness of Salisbury.
37. Minnie (Veitch, Chelsea). Flowers small ; purple, laced rosy pink.
38. Modesty (Forbes). Flowers large ; reddish purple, laced rosy pink. Very handsome.
39. Mrs. Dark (Dean). Purplish red, laced bright rose. Vigorous grower and free bloomer.
40. Mrs. Lakin (Lakin). Creamy white, with a speck of pink in the centre.
41. Mrs. Sinkins (Forbes). White ; large and handsome ; sweetly scented. Very free bloomer, and of dwarf habit.
42. Mrs. Waite (Turner). An improvement on Bordeil.
43. Princess Aribert (Laxton). White, creamy white centre, fimbriated edges. Dwarf habit. Free bloomer.
44. Rosamond $\times \times \times$ (Dean). Soft pink, centre deep red ; fimbriated edges.
45. Rosy Circle $\times \times \times$ (Dean). Very bright pink, laced red.
46. Rosy Morn $\times \times \times$ (Turner). Flowers large and well formed ; rose, laced rosy pink. Spreading habit.
47. Sir Hugo (Dean). Delicate pink, darker centre.
48. Souvenir de Sale $\times \times \times$ (Dean). Flowers large ; soft rosy pink, fringed at the edges. Strong grower and free bloomer.
49. Stanley (Laxton). White, greenish yellow centre. Very fine.
50. Tom Welsh (Turner). Deep red, laced purple.
51. Tottie (Turner). Pink, laced bright red.
52. Venus (Dean). Flowers of medium size ; white, fringed.
53. Vigilant (Forbes). Red, laced crimson.
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ORCHID COMMITTEE.

JULY 10, 1894.

HARRY J. VEITCH, Esq., in the Chair, and fifteen members present.

Awards Recommended:—

Silver Banksian Medal.

To Messrs. W. L. Lewis & Co., Chase Side, Southgate, for an extensive collection of Orchids.

First Class Certificate.

To *Lælio-Cattleya* × *Timora* (*Lælia pumila* Dayana ♀ × *C. labiata* Luddemanniana ♂) (votes unanimous), from Messrs. Jas. Veitch & Sons, King's Road, Chelsea. The plant exhibited had the habit of growth, and size and colour of flower, of *L. pumila præstans*, but the front of the lip was elongated and enlarged, and of a rich plum-purple, the same colour edging the side lobes.

Award of Merit.

To *Thunia* × *Veitchiana* *superba* (*T.* × *Veitchiana* ♀ × *T. Bensoniæ* ♂) (votes unanimous), from Messrs. J. Veitch & Sons, Chelsea. The plant was the result of again crossing *T.* × *Veitchiana* with *T. Bensoniæ*, and a finer colour and a larger flower was the result.

To *Cattleya labiata* *Gaskelliana* "Nellie" (votes unanimous), from W. Thompson, Esq., Walton Grange, Stone, Staffs (gr. Mr. W. Stevens). A very pretty variety with white flowers, having a light purple blotch on the lip.

Botanical Certificate.

To *Vanda* *Roeblingiana* (votes unanimous), from Messrs. Hugh Low & Co., Clapton. A singular new species with brown flowers, the front of the lip being furnished with two circular fimbriated plates.

To *Ornithocephalus grandiflorus* (votes unanimous), from C. J. Lucas, Esq., Warnham Court, Horsham (gr. Mr. Duncan).

Cultural Commendation.

To the Director, Royal Gardens, Kew, for cut spikes of the Kew hybrid *Disas*.

To Messrs. F. Sander & Co., St. Albans, for a fine plant of *Platyclinis filiformis* with about 120 spikes (votes unanimous).

Other Exhibits.

Messrs. James Veitch & Sons showed *Disa* × *Diores* (*D.* × *Veitchii* ♀ × *D. grandiflora*), which the Committee desired to see again; also *Phalænopsis* × *Artemis*.

R. I. Measures, Esq., Cambridge Lodge, Camberwell (gr. Mr. H. Chapman), sent *Masdevallia Gaskelliana*, *M. corniculata*, *M. muscosa*, *M. demissa*, and *M. trichæte*.

Dr. Davis, Barming Heath, Maidstone, showed *Odontoglossum cristatellum*.

The Right Hon. J. Chamberlain, Highbury, Moor Green, Birmingham (gr. Mr. Burberry), sent cut spikes of *Miltonia vexillaria highburyensis*.

C. L. N. Ingram, Esq., Elstead House, Godalming (gr. Mr. T. W. Bond), showed *Cypripedium* × *T. W. Bond* (*C. Curtisii* ♀ × *C. hirsutissimum* ♂), *Lælio-Cattleya Ingrami*, and cut spikes of *Cattleya labiata Mossiæ* with striped flowers.

C. W. Fincken, Esq., Hoyland Hall, Barnsley (gr. Mr. J. Milburn), showed a fine plant of *Cattleya Rex* with a four-flowered inflorescence.

F. Wigan, Esq., Clare Lawn, East Sheen, sent *Cypripedium* × *Wiganianum* (*C.* × *Ashburtoniæ* ♀ × *C.* × *Harrisianum* ♂), *C.* × *macropterum*, and the rare *Dendrobium Leeaanum atropurpureum*.

J. W. Temple, Esq., Leyswood, Groombridge (gr. Mr. Bristow), showed a fine dark form of *Cattleya Warszewiczii* with four flowers on a spike, also a large light-coloured variety of the same, and varieties of *Cattleya granulosa*.

De B. Crawshay, Esq., Rosefield, Sevenoaks (gr. Mr. S. Cooke), staged several good plants of *Odontoglossum Harryanum*, *Cattleya Gaskelliana* "Mrs. De B. Crawshay," and a fine plant of *Odontoglossum Pescatorei*.

Messrs. F. Sander & Co., St. Albans, staged a group of rare Orchids.

F. W. Moore, Esq., Royal Botanic Gardens, Glasnevin, showed *Phaius Henryii* from the original importation.

Baron Schröder, The Dell, Egham (gr. Mr. H. Ballantine), again exhibited the finely spotted *Odontoglossum crispum Ballantinei*.

Reginald Young, Esq., Linnet Lane, Sefton Park, Liverpool,

showed a good form of *Cattleya Warscewiczii* and one of *Cattleya granulosa*.

Welbore S. Ellis, Esq., of Hazelbourne, Dorking, also showed a good variety of *Cattleya Warscewiczii*.

ORCHID COMMITTEE, JULY 24, 1894.

HARRY J. VEITCH, Esq., in the Chair, and twelve members present.

Awards Recommended:—

Silver Banksian Medal.

To Messrs. W. L. Lewis & Co., Chase Side, Southgate, for a group of Orchids.

First Class Certificate.

To *Cattleya Hardyana* "Tring Park variety" (votes unanimous), from the Right Hon. Lord Rothschild, Tring Park, Tring (gr. Mr. E. Hill). The inflorescence had five very large flowers, which were very rich in colour.

To *Cattleya Hardyana laversinense* (votes unanimous), from the Right Hon. Lord Rothschild (gr. Mr. E. Hill). The sepals and petals were mottled rose and white, the front of the lip dark velvety purple.

To *Sobralia* × *Veitchii* (*S. macrantha* ♀ × *S. xantholeuca* ♂) (votes unanimous), from Messrs. James Veitch & Sons, King's Road, Chelsea. This beautiful hybrid had sepals and petals white with a faint pink tint, the tube of the lip yellow, front pale lilac.

To *Laelio-Cattleya* × *Zephyra* (*C. Mendelii* ♀ × *L. xanthina* ♂) (votes unanimous), from Messrs. James Veitch & Sons. The flowers resembled those of *Cattleya Rex*, except that the crimson colouring of the front lobe of the lip was in an unbroken blotch, instead of in lines.

Award of Merit.

To *Cattleya granulosa superba* (votes, 6 for, 2 against), from Thos. Statter, Esq., Stand Hall, Whitefield, Manchester (gr. Mr. R. Johnson). A fine variety, in which the interior half of the front lobe of the lip is white.

To *Lycaste* × *schönbrunnensis* (votes unanimous), from Messrs. F. Sander & Co., St. Albans. The form of the flower was similar to *L. Skinnerii*. Sepals brownish rose, petals white spotted rose, lip white with crimson blotches at the base.

To *Galeandra lagoënsis* (votes unanimous), from Messrs. F. Sander & Co., St. Albans. A singular species, in growth like an *Eulophia*, and sending up a slender scape with two large flowers. Sepals and petals greenish, lip large and rose-crimson.

To *Cattleya Mendelii* "H. A. Tracy" (votes, 6 for, 4 against), from Mr. H. A. Tracy, Amyand Park Road, Twickenham. A fine form with white sepals and petals, and large carmine-crimson front to the lip.

To *Habenaria carnea* var. *nivosa* (votes unanimous), from Messrs. W. L. Lewis & Co., Chase Side, Southgate. A fine white form of this very pretty species.

To *Odontoglossum citrosmum sulphureum* (votes unanimous), from Messrs. W. L. Lewis & Co., Chase Side, Southgate. A very distinct form with sulphur-yellow sepals and petals, and rose lip with a yellowish shade.

Botanical Certificate.

To *Pleurothallis Kranzlinii* (votes unanimous), from Messrs. F. Sander & Co., St. Albans.

To *Catasetum Christyanum* (votes unanimous), from Messrs. F. Sander & Co., St. Albans.

To *Dendrobium ciliatum* (votes unanimous), from F. W. Moore, Esq., Royal Botanic Gardens, Glasnevin, Dublin.

Cultural Commendation.

To the Right Hon. Lord Rothschild, Tring Park (gr. Mr. E. Hill), for *Cattleya Hardyana* "Tring Park var.," with five large flowers on a spike.

To Major Joicey, Sunningdale Park, Sunningdale, Berks (gr. Mr. F. J. Thorne), for *Cattleya Warscewiczii* with six fine flowers on a spike, and *Anguloa Ruckerii* with ten flowers.

Other Exhibits.

Messrs. James Veitch & Sons, Chelsea, showed a fine specimen of *Dendrobium glomeratum*, and one of *Lælio-Cattleya* × *Pallas* (*L. crispa* ♀ × *C. Dowiana* ♂).

Messrs. F. Sander & Co., St. Albans, staged a group of Orchids, among which were the fine *Cattleya* × *Prince of Wales*

(*C. Wagnerii* ♀ × *C. intermedia* ♂), *Cynoches peruvianum*, *Dendrobium O'Brienianum striatum*, &c.

Messrs. B. S. Williams & Son, Upper Holloway, N., showed *Odontoglossum Schlieperianum*, *O. S. aureum*, and *Oncidium crispum grandiflorum*.

The Right Hon. Lord Llangattock, The Hendre, Monmouth (gr. Mr. T. Coomber), sent *Cypripedium* × The Hendre (*C. Lawrenceanum* ×).

F. Wigan, Esq., Clare Lawn, East Sheen, showed *Cattleya Lindleyana*.

S. G. Lutwyche, Esq., Beckenham, sent *Stanhopea Shuttleworthii*.

C. J. Lucas, Esq., Warnham Court, Horsham (gr. Mr. G. Duncan), showed *Brassia Wrayæ*.

Messrs. Hugh Low & Co., Clapton, staged a small group of Orchids, among which were *Paphinia rugosa*, *Trichopilia Galeottiana*, *Oncidium Lanceanum*, &c.

Pantia Ralli, Esq., Ashted Park, Epsom (gr. Mr. G. Hunt), sent *Anguloa uniflora eburnea* with seven flowers.

A. J. Hollington, Esq., Forty Hill, Enfield (gr. Mr. Ayling), showed two hybrid *Cypripediums* obtained between *C. philippinense* and *C. callosum*, resembling a pale *C. × selligerum*.

F. W. Moore, Esq., Royal Botanic Gardens, Glasnevin, sent cut specimens of several interesting species.

R. Young, Esq., Sefton Park, Liverpool, sent flowers of *Cattleya Eldorado crocata*.

ORCHID COMMITTEE, AUGUST 14, 1894.

Dr. MAXWELL T. MASTERS, F.R.S., in the Chair, and ten members present.

Awards Recommended:—

Silver Flora Medal.

To Messrs. Hugh Low & Co., Upper Clapton, for a group of Orchids, in which were over sixty plants of *Cypripedium Charlesworthii*, the flowers of which displayed great variety, especially in the colouring of the large dorsal sepals, some being nearly

white, while others were rose-purple. There were some fine specimens of *Saccolabium cœleste* in the group.

Silver Banksian Medal.

To Thos. Statter, Esq., Stand Hall, Whitefield, Manchester (gr. Mr. R. Johnson), for a collection of cut Orchids, including six distinct forms of *Lælio-Cattleya* × *elegans*, L.-C. × *Amesiana*, *Cattleya Gaskelliana alba*, *C. Rex*, &c.

First Class Certificate.

To *Lælio-Cattleya* × *broomfieldi* (*Lælia pumila præstans* ♀ × *Cattleya aurea chrysotoxa* ♂) (votes unanimous), from M. Wells, Esq., Broomfield, Sale, Manchester (gr. Mr. Hinds). This fine hybrid had the sepals and petals rose-colour, the broad crimped lip rich violet-purple with darker veining. The interior of the tube was yellow with red-brown markings.

Award of Merit.

To *Cypripedium* × *W. R. Lee* (*C. superbiens* ♀ × *C. Rothschildianum* ♂) (votes unanimous), from W. R. Lee, Esq., Beech Lawn, Audenshaw, Manchester (gr. Mr. Billington). The flower resembled *C. × Morgania*, but the petals were much broader and more horizontally extended, the ground colour being white with dark purple spots; the upper sepal white, green at the base, and with numerous fine purple lines; lip resembling *C. superbiens*, but larger.

To *Cypripedium Godefroyæ leucochilum aureum* (votes unanimous), from R. I. Measures, Esq., Cambridge Lodge, Camberwell (gr. Mr. H. J. Chapman). A yellow-tinted form of the unspotted-lipped variety of *C. Godefroyæ*.

To *Cypripedium Godefroyæ*, Cambridge Lodge var. (votes unanimous), from R. I. Measures, Esq., Camberwell (gr. Mr. H. J. Chapman). A fine form, in which the whole flower has heavy purple markings.

To *Cypripedium* × *Excelsius* (*C. Rothschildianum* ♀ × *C. × Harrisianum* ♂) (votes unanimous), from Thos. Statter, Esq., Stand Hall, Whitefield, Manchester (gr. Mr. R. Johnson). This fine hybrid had a greenish dorsal sepal with chocolate-coloured lines, whitish petals spotted with purple, and lip greenish-white with a bronze face.

To *Cattleya* × *Ashtoni* (*C. Harrisonia* ♀ × *C. Warszewiczii* ♂) (votes unanimous), from Messrs. W. L. Lewis & Co., Chase Side,

Southgate. A very desirable hybrid, with rose-pink flowers; the front of the labellum crimson, the base yellow.

To *Cypripedium* × *tessellatum porphyreum* (votes unanimous), from R. I. Measures, Esq., Cambridge Lodge, Camberwell (gr. Mr. H. J. Chapman).

To *Lælio-Cattleya* × *elegans dulcotensis* (votes, 6 for, 2 against), from Walter Cobb, Esq., Dulcote, Tunbridge Wells (gr. Mr. J. Howe). A dark and richly coloured form of the *L. e. Turneri* section.

To *Lælio-Cattleya* × *elegans præstans* (votes, 8 for, 2 against), from C. L. N. Ingram, Esq., Elstead House, Godalming (gr. Mr. T. W. Bond).

To *Bletia catenulata* (votes unanimous), from Messrs. F. Sander & Co., St. Albans. This species was shown under the erroneous name of *B. Watsoniana*.

Botanical Certificate.

To *Epidendrum fragrans* (votes unanimous), from W. C. Walker, Esq., Percy Lodge, Winchmore Hill (gr. Mr. Geo. Cragg).

To *Epidendrum Brassavolæ* (votes unanimous), from W. C. Walker, Esq.

To *Stanhopea inodora* (votes unanimous), from W. C. Walker, Esq.

To *Arachnanthe moschifera* (votes unanimous), from Messrs. Heath & Son, Cheltenham.

To *Dendrobium mutabile* (*triatenum*) (votes unanimous), from Messrs. B. S. Williams & Son, Upper Holloway.

Cultural Commendation.

To Messrs. Condon & Raphael, Hazelwood, King's Langley, Herts, for a small group of *Dendrobium formosum giganteum*.

Other Exhibits.

The Director of the Royal Gardens, Kew, sent *Disa nervosa* and *D. × kewensis*.

Messrs. F. Sander & Co., St. Albans, showed an extensive group of rare Orchids.

Messrs. W. L. Lewis & Co., Chase Side, Southgate, N., had a group of well-known Orchids.

Messrs. Linden, l'Horticulture Internationale, Parc Leopold, Brussels, showed the fine *Lælio-Cattleya* × *elegans Treyerani*,

L.-C. \times e. lilacina, and *Cypripedium* \times *Denisianum* (*C. superbiens* ♀ \times *C. selligerum* ♂).

Messrs. Jas. Veitch & Sons, King's Road, Chelsea, showed *Cypripedium* \times *Morgania* langleyense, *Lælia* \times *Stella* (*L. elegans Wolstenholmia* ♀ \times *L. crispa* ♂), and *Cattleya* \times *Atlanta* (*C. Leopoldii* ♀ \times *C. Warscewiczii* ♂).

Messrs. B. S. Williams & Son, Holloway, N., showed *Cattleya* \times *blesensis*, *Cypripedium* \times *Adonis*, *Lælia monophylla*, *L. xanthina*, *Oncidium litum*, *Pachystoma Thompsoni*, *Odontoglossum Kramerii*, &c.

W. C. Clark, Esq., Sefton Park, Liverpool (gr. Mr. Jones), showed *Cypripedium* \times *Mabelianum*.

H. Hollis, Esq., Beechcroft, Edgbaston (gr. Mr. R. Swain), showed a fine form of *Cattleya Warscewiczii*.

A. H. Smee, Esq., The Grange, Carshalton (gr. Mr. W. H. Cummins), showed *Oncidium macranthum* and *Stanhopea* sp.

W. M. Appleton, Esq., Tyn-y-Coed, Weston-super-Mare, sent varieties of *Lælia crispa*.

ORCHID COMMITTEE, AUGUST 28, 1894.

Dr. MAXWELL T. MASTERS, F.R.S., in the Chair, and ten members present.

Awards Recommended:—

Silver Flora Medal.

To Messrs. F. Sander and Co., for a select group of Orchids.

To Messrs. Hugh Low & Co., Clapton, for a group of Orchids, principally *Cypripedium Charlesworthii*.

First Class Certificate.

To *Cattleya* \times *Kienastiana* (*C. labiata* *Luddemanniana* ♀ \times *C. aurea* ♂) (votes unanimous), from Messrs. F. Sander & Co., St. Albans. The flower closely resembled a good form of *C. labiata* *Gaskelliana*.

To *Cypripedium* \times *James H. Veitch* (*C. Curtisii* ♀ \times *C. Stonei platytænium* ♂) (votes unanimous), from Messrs. Jas. Veitch & Sons, King's Road, Chelsea. This fine hybrid bore

much resemblance to *C. × Morganiae langleyense*, but was larger in all the parts of its flower (fig. 27).



FIG. 27.—*CYPRIPEDIUM* × JAMES H. VEITCH. (*Journal of Horticulture*.)

To *Habenaria Susannæ* (votes unanimous), from Messrs. F. Sander and Co., St. Albans. A tall large-flowered white species with broad fringed lip (fig. 28).



FIG. 28.—HABENARIA SUSANNÆ. (*Journal of Horticulture.*)

Award of Merit.

To *Cypripedium* × *The Pard* (*C. niveum* ♀ × *C. superbiens* ♂) (votes unanimous), from Sir Trevor Lawrence, Bart., Burford, Dorking (gr. Mr. W. H. White). This pretty hybrid had flowers of a pure white spotted with purple.

To *Lælio-Cattleya* × *elegans nobilis* (votes unanimous), from Messrs. F. Sander and Co., St. Albans. A bright variation of the *Turneri* section, with wholly carmine-crimson flowers, not exhibiting the olive-green tint on the sepals usually seen.

To *Saccolabium cæleste superbum* (votes unanimous), from Messrs. Hugh Low & Co., Clapton. The lip of this variety was of a dark violet colour.

To *Cattleya* × *Hardyana*, *Selwood* var. (votes unanimous), from G. D. Owen, Esq., Sellwood, Rotherham (gr. Mr. Watt). A fine and richly coloured form, the chief distinction being the large chrome-yellow blotches on each side of the lip.

To *Lælio-Cattleya* × *Oweniæ* (votes unanimous), from G. D. Owen, Esq., Selwood, Rotherham (gr. Mr. Watt). A supposed hybrid of *Lælia Perrinii*. The habit is that of *L.-C.* × *elegans*. Flowers bright purplish rose, with a pure white base to the lip.

Botanical Certificate.

To *Stenia fimbriata* (votes unanimous), from Sir Trevor Lawrence, Bart. (gr. Mr. W. H. White). Shown as *Stenia Chestertoni*.

To *Dendrobium album* (*aqueum*) (votes unanimous), from Thos. Statter, Esq., Stand Hall, Whitefield, Manchester (gr. Mr. R. Johnson).

Other Exhibits.

Sir Trevor Lawrence, Bart., showed *Zygopetalum brachypetalum*, *Maxillaria fucata*, and *M. Hübschii*.

Thos. Statter, Esq., Stand Hall, Whitefield, Manchester, showed *Lælia monophylla* with six spikes, *Lælio-Cattleya* × *callistoglossa*, and *L.-C.* × *Nysa*.

G. D. Owen, Esq., Selwood, Rotherham, sent *Cattleya labiata Gaskelliana alba*.

W. Thompson, Esq., Walton Grange, Stone, Staffs (gr. Mr. W. Stevens), showed *Lælio-Cattleya* × *Camenbergiana*, like a

large light rose L.-C. elegans, and *Cattleya labiata* Gaskelliana alba.

Messrs. B. S. Williams & Son, Upper Holloway, showed *Lælio-Cattleya blesensis* (*C. Loddigesii* ♀ × *L. pumila* ♂).

J. S. Moss, Esq., Winter's Hill, Bishops Waltham (gr. Mr. W. Bazeley), showed a fine plant of *Lælio-Cattleya* × *elegans* var.

Mr. Horsman, Colchester, showed a small plant of *Miltonia* × *Bluntii* Lubbersiana.

ORCHID COMMITTEE, SEPTEMBER 11, 1894.

HARRY J. VEITCH, Esq., in the Chair, and twelve members present.

Awards Recommended:—

Silver Banksian Medal.

To Thos. Statter, Esq., Stand Hall, Whitefield, Manchester (gr. Mr. R. Johnson), for a collection of rare Orchids.

To Messrs. W. L. Lewis & Co., Chase Side, Southgate, N., for a group of Orchids.

To R. I. Measures, Esq., Cambridge Lodge, Flodden Road, Camberwell (gr. Mr. H. J. Chapman), for an extensive group of *Cypripediums* and other Orchids.

To Messrs. Hugh Low & Co., Clapton, for a group of *Cypripedium Charlesworthii*, &c.

First Class Certificate.

To *Cattleya Warscewiczii* "Countess of Derby" (votes unanimous), from Thos. Statter, Esq., Stand Hall, Whitefield, Manchester (gr. Mr. R. Johnson). A very beautiful form with clear white sepals and petals, and the usual richly coloured labellum of the type.

To *Cypripedium* × *Chas. Rickman* (*C. barbatum* ♀ × *C. bellatulum* var. ♂) (votes unanimous), from M. Jules Hye-Leyson, Coupure, Ghent. The plant had been shown before on the Continent as *C. × Météore*, but being identical with that for which Mr. Rickman had previously received an Award of

Merit when an imperfect specimen was shown, the Committee made the present award under the proper name (fig. 29).

To *Renanthera coccinea* (votes unanimous), from Mr. J. A. Miller, Bifrons Park, Canterbury. Two magnificent spikes of this fine old reddish-scarlet species was shown.

Award of Merit.

To *Cypripedium* × *Nandi* (*C. callosum* ♀ × *C. × Tautzianum* ♂) (votes unanimous), from R. I. Measures, Esq.,

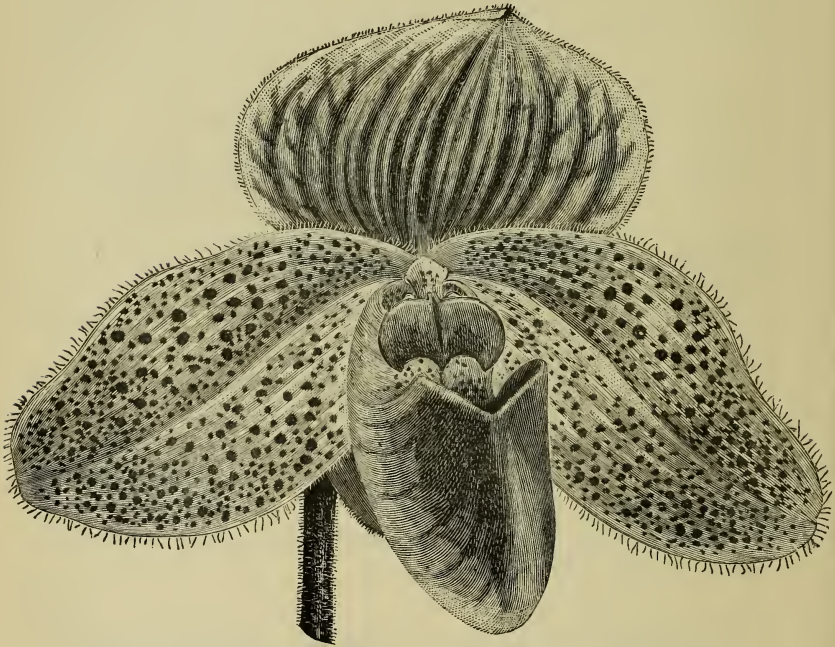


FIG. 29.—*CYPRIPEDIUM* × CHAS. RICKMAN. (*Journal of Horticulture*.)

Cambridge Lodge, Camberwell (gr. Mr. H. J. Chapman). A very pretty hybrid like a large form of *C. × Tautzianum*. Colour white, tinged and spotted with dark bright rose.

To *Lælia pumila* *Dayana delicata* (votes, 7 for, 4 against), from R. I. Measures, Esq., Cambridge Lodge, Camberwell (gr. Mr. H. J. Chapman). The variation consisted in the sides of the labellum being slate-blue, the raised lines purple.

To *Cattleya labiata* Gaskelliana albens odorata (votes unanimous), from Sir Trevor Lawrence, Bart. (gr. Mr. W. H. White). A large bouquet of this fine white and fragrant variety was exhibited.

To *Odontoglossum aspersum* roseum (votes unanimous), from Sir Trevor Lawrence, Bart. A very handsome form with the flowers tinted dark rose.

To *Cattleya* × *Parthenia* (*C.* × *fimbriata* ♀ × *C.* l. *Mossiae*) (votes unanimous), from Thos. Statter Esq., Stand Hall, Whitefield, Manchester (gr. Mr. R. Johnson).

Botanical Certificate.

To *Cœlogyne Meyeriana* (votes unanimous), from Messrs. F. Sander & Co., St. Albans. This species has greenish flowers as in *C. pandurata*, but they are smaller. In growth and other particulars it is intermediate between that species and *C. pel-tastes*.

To *Pleurothallis picta* (votes unanimous), from R. I. Measures, Esq., Cambridge Lodge, Camberwell (gr. Mr. H. J. Chapman).

To *Pleurothallis Lauchiana* (votes, 4 for, 3 against), from Messrs. F. Sander & Co., St. Albans.

To *Spathoglottis pubescens* (votes, 6 for, 1 against), from Messrs. Hugh Low & Co., Clapton.

Other Exhibits.

Messrs. F. Sander & Co. staged an extensive and interesting collection.

Messrs. John Laing & Son, Forest Hill, sent *Stanhopea devoniensis* and *S. tigrina*.

E. J. Wickenden, Esq., Heathfield, New Southgate, showed a fine variety of *Oncidium Forbesii*.

Messrs. Horsman & Co., Colchester, sent *Lælia purpurata* and *L. tenebrosa*.

Walter C. Walker, Esq., Percy Lodge, Winchmore Hill (gr. Mr. G. Cragg), sent two forms of *Cattleya Leopoldii* and *C. guttata phœnicoptera*.

J. Gurney Fowler, Esq., Glebelands, South Woodford (gr. Mr. J. Davis), showed *Cattleya Loddigesii* with over thirty flowers, and a fine form of *Cypripedium Charlesworthii*.

Sir Charles Pigott, Bart., Wexham Park, Slough (gr. Mr. Capp), sent seven varieties of *Cattleya labiata* Gaskelliana.

Messrs. Jas. Veitch & Sons showed *Lælio-Cattleya* × *Nysa* (*C. Warszewiczii* ♀ × *L. crispa* ♂).

C. L. N. Ingram, Esq., Elstead House, Godalming (gr. Mr. T. W. Bond), sent *Lælio-Cattleya* × *elegans* Houtteana.

ORCHID COMMITTEE, CHISWICK, SEPTEMBER 25, 1894.

HARRY J. VEITCH, Esq., in the Chair, and six members present.

Awards Recommended :—

First Class Certificate.

To *Sophro-Cattleya* × *eximea* (*C. Bowringiana* ♀ × *Sophonitis grandiflora* ♂) (votes unanimous), from Messrs. James Veitch & Sons, King's Road, Chelsea. An extraordinary bigeneric hybrid, bearing a close resemblance to *S. grandiflora*, notwithstanding that the seeds were borne by the tall and numerous-flowered *C. Bowringiana*. The sepals and petals were warm rose-purple, the lip yellow at the base, with rose-purple indentations in front of the yellow, the purplish colour being continued over the whole of the front lobe, and showed through as a veining on the outsides of the folded side lobes, which between the veins were yellowish white (fig. 30).

To *Cattleya bicolor cærulea* (votes, 4 for, 1 against), from Thos. Statter, Esq., Stand Hall, Whitefield, Manchester (gr. Mr. R. Johnson). A singular variety, with greenish sepals and petals, and dull blue lip.

To *Cypripedium* × *Arnoldiæ* (*C. bellatulum* ♀ × *C. superciliare* ♂) (votes unanimous), from Messrs. F. Sander & Co., St. Albans. This variety in general appearance resembles some of the section commenced with *C. × Marshallianum*.

Award of Merit.

To *Lælio-Cattleya* × *Wellsiæ* (*C. labiata vera* ♀ × *L. purpurata*) (votes unanimous), from Matthew Wells, Esq., Broomfield, Sale, Manchester (gr. Mr. R. Hinds). This differs mainly from *L.-C. × eximea*, *L.-C. × Arnoldiana*, and others which are hybrids of the same origin, in its lighter colour and later

time of flowering. The plant shown had four fine flowers on a spike.

To *Lælio-Cattleya* × *Nysa superba* (*L. crispa* × *C. Warscewiczii*) (votes unanimous), from Messrs. Jas. Veitch & Sons, King's Road, Chelsea. A grand variety, with the colours of the original hybrid, but much larger flowers.

To *L.-C.* × *Nysa picta* (votes unanimous), from Messrs.

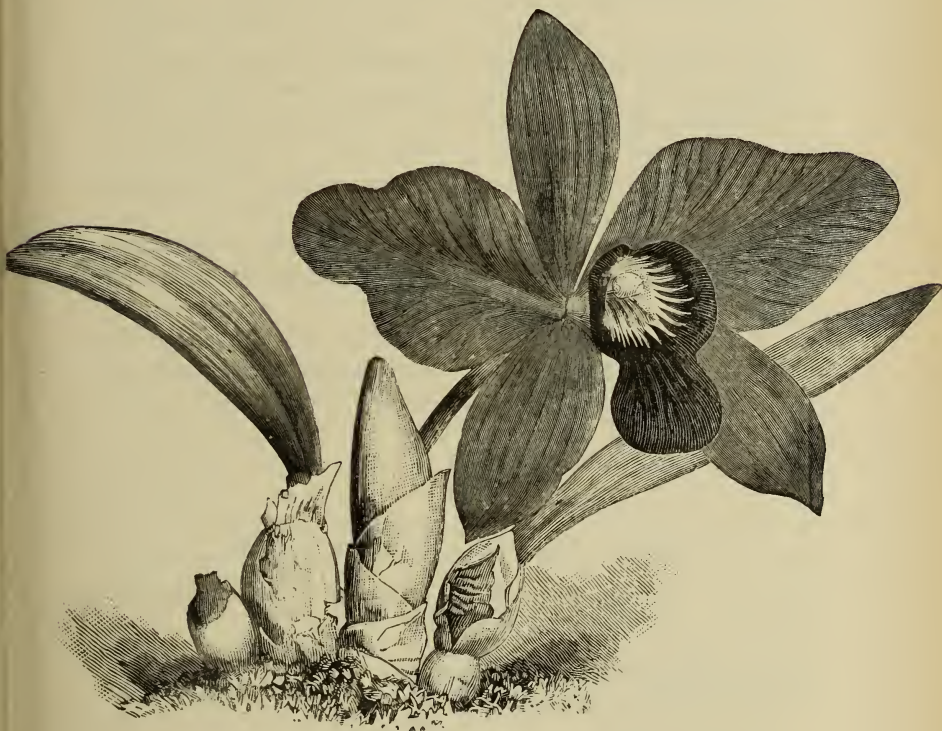


FIG. 30.—*SOPHRO-CATTELEYA* × *EXIMEA*. (*Journal of Horticulture*.)

Jas. Veitch & Sons. In this the yellow in the throat was confined to two small shades, one on each side, and the petals and side lobes of the lip were blotched with purple.

To *L.-C.* × *Nysa purpurea* (votes unanimous), from Messrs. Jas. Veitch & Sons. The form of this more nearly approached *C. Warscewiczii* in the rounded labellum and purplish tint over

the whole flower. The yellow of the original was absent at the base of the lip.

Botanical Certificate.

To *Dendrobium cruentum* (votes unanimous), from Messrs. F. Sander & Co., St. Albans.

Other Exhibits.

Messrs. F. Sander & Co. showed *Lælio-Cattleya* × *albanensis*, *L.-C.* × *a. rosea*, *Lælia* × *Oweniana*, *Cynoches chlorochilon*, a fine form of *Cattleya Walkeriana*, *Aërides Lawrenceæ*, *Cypripedium* × *Batalinii* (*C. purpuratum* ♀ × *C. Argus* ♂), &c.

Thos. Statter, Esq., sent forms of *Cattleya granulosa*, *C. Leopoldii*, and *C. aurea*.

Messrs. Jas. Veitch & Sons, Chelsea, exhibited *Cypripedium* × *Astrea* (*C. Spicerianum* ♀ × *C. philippinense* ♂).

Mr. J. Prewett, Swiss Nursery, Hammersmith, staged a very effective group, composed principally of well-flowered plants of *Dendrobium formosum*.

C. L. N. Ingram, Esq., Elstead House, Godalming (gr. Mr. T. W. Bond), sent a fine form of *Lælio-Cattleya* × *Ingramii*, and a hybrid *Selenipedium* of the *S.* × *Sedeni* section.

ORCHID COMMITTEE, OCTOBER 9, 1894.

HARRY J. VEITCH, Esq., in the Chair, and thirteen members present.

Awards Recommended:—

Silver Banksian Medal.

To Messrs. W. L. Lewis & Co., Chase Side, Southgate, N., for a group of well-grown Orchids.

To Mr. P. McArthur, Maida Vale, W. (votes unanimous), for an extensive group of Orchids.

To Messrs. Charlesworth, Shuttleworth & Co., Heaton, Bradford, for a group consisting chiefly of *Cypripedium Charlesworthii*.

First Class Certificate.

To *Cattleya labiata* "Countess Fitzwilliam" (votes unani-

mous), from G. D. Owen, Esq., Selwood, Rotherham (gr. Mr. Mark Watts). A fine white form, with a very faint pencilling of pink on the front of the labellum.

To *Cattleya labiata* *Foleyana* (votes unanimous), from G. D. Owen, Esq., Selwood, Rotherham. A large and handsome form with white sepals and petals, and white labellum with yellow tinge at the base and soft crimson-coloured blotch in front, the lip in its colouring resembling that of *C. Mendelii* *Morganiaë*.

Award of Merit.

To *Cattleya* × *Brownæ* (*C. Harrisoniaë* ♀ × *C. Bowringiana* ♂) (votes, 6 for, 1 against), from Messrs. F. Sander & Co., St. Albans. The small plant partook much of *C. Bowringiana*, especially in the form and ample sheathing of its pseudo-bulbs. Flowers of medium size, purplish rose, with yellow colouring at the base of the lip, and purplish crimson front. Named after Mrs. Brown, of St. Louis, U.S.A.

To *Cypripedium* × *Bookerii* (*C. ciliolare* ♀ × *C. Spicerianum* ♂) (votes unanimous), from Messrs. W. L. Lewis & Co., Chase Side, Southgate, N. A beautiful hybrid with the general aspect of *C. × œnanthum*, but a much larger flower, the large slightly twisted dorsal sepal being a very distinct feature.

To *Cypripedium* × *Memoria Moensii* (votes unanimous), from Thos. Statter, Esq., Stand Hall, Whitefield, Manchester (gr. Mr. R. Johnson). A showy variety of the *C. × Pitcherianum* class. The upper sepal dark purple at the base, then rosy crimson, the tip and margin pure white; the petals light purple with white margin.

To *Cattleya* × *Wendlandii* (*C. Bowringiana* ♀ × *C. Warszewiczii* ♂) (votes unanimous), from Messrs. Jas. Veitch & Sons, King's Road, Chelsea. A distinct hybrid, with flowers as large as a small *C. labiata*; sepals and petals rosy purple; lip dark crimson in front, yellow at base.

To *Dendrobium Phalænopsis album* (votes unanimous), from Admiral Ralph P. Cator, Hazelwood, King's Langley (gr. Mr. G. E. Day). A pure white variety with pink front to the labellum.

To *Dendrobium palpebræ* (votes unanimous), from Messrs. W. L. Lewis & Co., Chase Side, Southgate.

To *Miltonia Moreliana atropurpurea* (votes unanimous), from Walter Cobb, Esq., Dulcote, Tunbridge Wells (gr. Mr. J. Howe).

Botanical Certificate.

To *Staurosis philippinensis* (votes unanimous), from Admiral Ralph P. Cator, Hazelwood, King's Langley (gr. Mr. G. E. Day).

To *Sarcanthus pugioniformis* (votes unanimous), from C. J. Lucas, Esq., Warnham Court, Horsham (gr. Mr. G. Duncan).

Other Exhibits.

Messrs. F. Sander & Co. staged a group of rare Orchids, in which were *Catasetum Christyanum*, *Dendrobium veratrifolium*, *Pescatorea Dayana*, *Cynoches chlorochilon*, &c.

Thos. Statter, Esq., Stand Hall, Whitefield, Manchester, again showed the fine *Cattleya Warszewiczii* "Countess of Derby"; also *Cypripedium* \times *gloriosum* (*C. insigne* Chantinii ♀ \times *C. Io grande* ♂), and *Cattleya* \times *Minucia*.

Messrs. Jas. Veitch & Sons, Chelsea, showed *Sophro-Cattleya* \times *læta* (*L. pumila* Dayana ♀ \times *S. grandiflora* ♂), with flowers insufficiently developed; *Cattleya* \times *Chloris* (*C. Bowringiana* ♀ \times *C. maxima* ♂), and *Lælio-Cattleya* \times *Nysa superba*.

De B. Crawshay, Esq., Rosefield, Sevenoaks (gr. Mr. S. Cooke), sent *Odontoglossum crispum Bonnyanum*.

R. I. Measures, Esq., Cambridge Lodge, Camberwell, exhibited *Cattleya granulosa superba* and *Cypripedium* \times *lucidum* (*C. Lowii* ♀ \times *C. villosum* ♂).

C. J. Lucas, Esq., Warnham Court, Horsham (gr. Mr. G. Duncan), showed *Cattleya* \times *Hardyana marmorata*, *C. bicolor* *Wrigleyana*, and *Trichopilia fragrans*.

Welbore S. Ellis, Esq., Hazelbourne, Dorking (gr. Mr. Masterton), showed *Odontoglossum crispum guttatum* and a brown and yellow *Oncidium* from Colombia.

Chas. L. N. Ingram, Esq., Elstead House, Godalming (gr. Mr. T. W. Bond), showed *Lælia* \times *amœna* (*L. pumila* ♀ \times *L. anceps* ♂), which the Committee desired to see again.

J. Bradshaw, Esq., The Grange, Southgate, N. (gr. Mr. Wiffen), sent a fine form of *Masdevallia chimæra*.

J. Forster Alcock, Esq., Northchurch, Berkhamstead, sent *Catasetum fimbriatum*.

F. Wheatley, Esq., Ringmore, Teignmouth, sent a light form of *Cattleya Dowiana aurea*.

The Hon. Mrs. Foley, Fordingbridge, Hants, sent *Saccolabium bigibbum*.

G. D. Owen, Esq., Rotherham, showed *Lælia præstans* alba.
Messrs. Hugh Low & Co. showed specimens of *Cattleya labiata* and *Cypripedium Charlesworthii*.

ORCHID COMMITTEE, OCTOBER 23, 1894.

HARRY J. VEITCH, Esq., in the Chair, and eleven members present.

Awards Recommended:—

Silver Flora Medal.

To J. Gurney Fowler, Esq., Glebelands, South Woodford, Essex (gr. Mr. J. Davis), for a large group of *Cattleya labiata*, with plants of *C. Bowringiana*, *C. Schilleriana*, *C. bicolor*, *Calanthe vestita*, &c.

To Mr. R. Hinds, gardener to M. Wells, Esq., Broomfield House, Sale, Cheshire, for a collection of dried flowers of Orchids mounted in picture form, by a new process, said to retain the substance and colour of the flowers.

Silver Banksian Medal.

To R. I. Measures, Esq., Cambridge Lodge, Camberwell (gr. Mr. H. J. Chapman), for a fine group of Orchids containing good specimens of rare *Cypripediums* and some curious botanical species.

To Messrs. F. Sander & Co., St. Albans, for a group of Orchids.

To Messrs. W. L. Lewis & Co., Chase Side, Southgate, N., for a group of *Cattleyas*, *Vanda Sanderiana*, &c.

To Messrs. Hugh Low & Co., Clapton, N., for a group of *Cattleya labiata*, *Miltonia Roezlii*, and other Orchids.

First Class Certificate.

To *Oncidium ornithorhynchum album* (votes unanimous), from R. I. Measures, Esq., Cambridge Lodge, Camberwell (gr. Mr. H. J. Chapman). A magnificent specimen with seventeen spikes of flowers. A Cultural Commendation was also unanimously voted for the specimen, a small portion of which is represented by fig. 31.

To *Miltonia* × *Bleuana rosea* (votes unanimous), from

M. Jules Hye-Leysen, 8 Coupure, Ghent, Belgium. A superb variety with rosy-lilac tinted flowers as large as the finest form of *M. vexillaria*.

Award of Merit.

To *Odontoglossum Wattianum superbum* (votes, 4 for), from Messrs. F. Sander & Co., St. Albans, a variety in which



FIG. 31.—*ONCIDIUM ORNITHORHYNCHUM ALBUM.* (*Journal of Horticulture.*)

the rich purple colouring in the lip (which is formed like that of *O. Harryanum*, but narrower) was conspicuous.

To *Lælio-Cattleya* × *Clonia* (*C. Warscewiczii* ♀ × *L. elegans* ♂) (votes unanimous), from Messrs. Jas. Veitch & Sons, King's Road, Chelsea, S.W. A very pretty hybrid with pale rose sepals and petals and broad lip, in which the colouring of the

front lobe is similar to that in *C. Warscewiczii*; the base of the lip white with red lines, the middle chrome-yellow.

To *Odontoglossum aspersum fulvidum* (votes unanimous), from Walter Cobb, Esq., Dulcote, Tunbridge Wells (gr. Mr. J. Howe). A fine variety in which the whole flower is suffused with nankeen colour.

Botanical Certificate.

To *Masdevallia attenuata* (votes unanimous), from R. I. Measures, Esq., Cambridge Lodge, Camberwell (gr. Mr. H. J. Chapman).

To *Masdevallia Lauchiana* (votes unanimous), from R. I. Measures, Esq.

To *Pleurothallis lepanthiformis* (votes unanimous), from R. I. Measures, Esq.

To *Dendrobium Cœlogyne* (votes unanimous), from Messrs. Hugh Low & Co., Clapton. A curious species of the section formerly included in *Bulbophyllum*. Flowers almost wholly dark purple.

To *Sophranitis cernua* (votes unanimous), from Messrs. Lewis & Co., Southgate.

Other Exhibits.

M. Jules Hye-Leysen, Coupure, Ghent, sent the richly coloured *Miltonia vexillaria Leopoldii*, for which Baron Schröder received a First-class Certificate in 1889; *Cypripedium* × *Albertianum*, which might better be called *C. × Leeantum Albertianum*.

Messrs. Jas. Veitch & Sons showed *Cattleya* × *Wendlandii* (*C. Bowringiana* ♀ × *C. Warscewiczii* ♂) and *Lælio-Cattleya* × *Pallas* (*L. crista* ♀ × *C. Dowiana* ♂).

F. Hardy, Esq., Tyntesfield, Ashton-on-Mersey (gr. Mr. T. Stafford), sent *Cypripedium insigne Hardyanum*, resembling *C. i. Sanderæ*.

C. J. Lucas, Esq., Warnham Court, Horsham (gr. Mr. G. Duncan), sent *Cattleya Alexandræ* and *Odontoglossum Wallisii*.

Reginald Young, Esq., Fringilla, Linnet Lane, Sefton Park, Liverpool (gr. Mr. Poyntz), showed *Cypripedium* × *Hermione* (*C. Spicerianum* ♀ × *C. barbatum Warnerii* ♂) and *Cattleya labiata*, Young's variety.

Thomas Statter, Esq., Stand Hall, Whitefield, Manchester (gr. Mr. R. Johnson), again exhibited *Cypripedium* × *Memoria Moensii*, *C.* × *amabile* (*C. javanico-superbiens* × *C. Hookeræ* ♂), *C.* × *Johnsoni* (*C. Lawrenceanum* ×), *Cattleya Warscewiczii*, and *Cypripedium Charlesworthii*.

Messrs. B. S. Williams & Son, Upper Holloway, sent *Cypripedium* × *Pitcherianum*, Williams' var., *Dendrobium album*, *D. superbiens* and its variety *Goldiei*, and *Lælia Perrinii nivea*.

J. Forster Alcock, Esq., Northchurch, Berkhamstead, showed *Odontoglossum grande* with abnormal flowers, *Lycaste cruenta*, *Pleione Reichenbachiana*, *Cypripedium Schlimii*, and *Brassia Lanceana*.

G. S. Lutwyche, Esq., Beckenham, sent *Miltonia Regnelli purpurea*, *M. candida* var., and a hybrid *Cypripedium* of the *C.* × *Ashburtoniæ* class.

ORCHID COMMITTEE, NOVEMBER 13, 1894.

HARRY J. VEITCH, Esq., in the Chair, and eleven members present.

Awards Recommended :—

Silver Banksian Medal.

To Messrs. Linden, l'Horticulture Internationale, Parc Leopold, Brussels, for a group of varieties of *Catasetum Bungeorhithii* and *C. macrocarpum*.

To Messrs. W. L. Lewis & Co., Chase Side, Southgate, N., for a group of *Cattleyas*, *Cypripediums*, *Sophronitis*, &c.

To Messrs. Hugh Low & Co., Clapton, for a group of Orchids, in which the forms of *Cattleya labiata* were remarkably fine.

To Messrs. Collins & Collins, Cumberland Park, Willesden Junction, for a group composed of a large number of plants of *Cypripedium insigne*, with a few other species, sprays of *Oncidium varicosum* hanging over the whole group.

First Class Certificate.

To *Odontoglossum crispum* "Frantz Masereel" (votes unanimous), from Messrs. Vervaet & Co., Mont St. Amand,

Ghent. A very handsome form, in which about two-thirds of the flower was occupied by dark red blotches of various sizes (fig. 32).

To *Cypripedium* × *Cyris* (*C. Boxalli atratum* ♀ × *C. Argus* ♂) (votes unanimous), from Norman C. Cookson, Esq., Oakwood, Wylam-on-Tyne (gr. Mr. W. Murray). A fine hybrid,



FIG. 32.—*ODONTOGLOSSUM CRISPUM* "FRANTZ MASEREEL." (*Journal of Horticulture*.)

with flowers bearing large chocolate blotches as in *C. Argus Moensii*.

Award of Merit.

To *Epilælia* × *Hardyana* (*L. anceps* ♀ × *E. ciliare* ♂) (votes unanimous), from Messrs. F. Sander & Co., St. Albans. A very singular bigeneric hybrid, in which the habit of the plant closely resembles *Epidendrum ciliare*, which species it also partakes most of in the form of its nearly equal lanceolate sepals and petals, which are of a pale pink colour. The narrow lip, which does not bear any of the fimbriation of *E. ciliare*, is whitish at the base, the tip of the side lobes and the long isthmus and ovate crimped blade of the front lobe being rich purple.

To *Dendrobium Phalænopsis highburyensis* (votes unani-

mous), from the Right Hon. Joseph Chamberlain, M.P., Highbury, Moor Green, Birmingham (gr. Mr. H. Burberry). In this very distinct form the flowers are suffused with cherry-red.

To *Cattleya* × *Fabia* (*C. labiata* ♀ × *C. Dowiana* ♂) (votes unanimous), from Messrs. Jas. Veitch & Sons, King's Road, Chelsea. The flowers were of true *C. labiata* form; the sepals and petals rosy lilac with a slight marbling of yellow; lip rich light crimson with yellowish lines at the base.

To *Cattleya labiata*, R. I. Measures' var. (votes unanimous), from R. I. Measures, Esq., Cambridge Lodge, Camberwell (gr. Mr. H. J. Chapman). The fine four-flowered inflorescence had pure white blooms, the lip having very little of the yellow usually seen in *C. labiata*, and a clearly defined pink veining on the front lobe.

To *Cypripedium insigne Ernestii* (votes unanimous), from R. I. Measures, Esq., Cambridge Lodge, Camberwell. This is a clear yellow form, with pure white tip to the dorsal sepal, and closely resembling *C. i. Sanderæ*.

To *Cymbidium cyperifolium* (votes unanimous), from R. I. Measures, Esq. An old but rare species of the *C. giganteum* section, but with white labellum veined with purple.

To *Cattleya labiata elegans* (votes unanimous), from E. Ashworth, Esq., Harefield Hall, Wilmslow, Cheshire (gr. Mr. H. Holbrook). A fine plant with many flowers. Sepals and petals white faintly tinged with lavender; lip rich purplish crimson.

To *Catasetum Bungerothii aurantiacum* (votes unanimous), from Messrs. Linden, l'Horticulture Internationale, Parc Leopold, Brussels. Flowers large; light orange.

To *Catasetum Bungerothii Lindenii* (votes unanimous), from Messrs. Linden, Brussels. Sepals and petals white, with rose-coloured dotted lines; lip pale yellow.

To *Catasetum O'Brienianum* (votes unanimous), from Messrs. Linden, Brussels. Apparently a natural hybrid between *C. Bungerothii* and *C. macrocarpum*, but with flowers nearest to the former species. Flowers ivory-white, the base of the lip stained with purple, and the sepals and petals thickly spotted with rose-purple.

To *Oncidium Wheatleyanum* (votes unanimous), from F. Wheatley, Esq., Ringmore, Teignmouth. A singular form, which might be a cross between *O. Gardneri* and *O. dasytyle*.

Sepals and petals purple; lip with purple crest like *O. dasytyle*, the blade yellow with a brown band.

Botanical Certificate.

To *Saccolabium bigibbum* (votes unanimous), from H. Grinling, Esq., Harrow Weald House, Stanmore (gr. Mr. Rapley).

To *Dendrobium platycaulon*, from Messrs. F. Sander & Co., St. Albans.

To *Catasetum macrocarpum*, from Messrs. Linden, l'Horticulture Internationale, Parc Leopold, Brussels.

Other Exhibits.

Messrs. F. Sander & Co. showed a group among which were several *Pescatoreas*, *Stenia pallida*, hybrid *Calanthes*, &c.

Earl Cowper, Panshanger, Herts (gr. Mr. J. Fitt), showed a group of varieties of *Cypripedium insigne*, a hybrid *Calanthe*, and hybrid *Lalio-Cattleya*.

Mr. G. Young, St. Albans, showed two yellow forms of *Cypripedium insigne*.

J. W. Temple, Esq., Leyswood, Groombridge (gr. Mr. E. Bristow), sent *Cattleya* × *Miss Williams* (*C. Harrisoniæ* ♀ × *C. Gaskelliana* ♂).

Admiral Cator, Hazelwood, King's Langley (gr. Mr. G. Day), showed *Cypripedium Victoria Marie*, like a greenish form of *C. Chamberlainianum*.

Sir Archibald Buchan-Hepburn, Prestonkirk, N.B., sent forms of *Lælia autumnalis*.

J. Forster Alcock, Esq., Northchurch, Berkhamstead, showed *Odontoglossum Wilckeanum*.

R. G. Fletcher, Esq., Withdean, Brighton, sent *Lycaste macrobulbon*.

Messrs. B. S. Williams & Son, Upper Holloway, exhibited *Phaio-Calanthe* × *Sedeniana rosea*.

W. A. Gillett, Esq., Fair Oak Lodge, Bishopstoke (gr. Mr. E. Carr), showed *Odontoglossum crispum*, Fair Oak variety, a very fine spotted form.

Messrs. J. Veitch & Sons showed *Lælio-Cattleya* × *Statteriana* (*L. Perrinii* ♀ × *C. labiata* ♂) and *Cypripedium* × *Tityus* (*C. Spicerianum* ♀ × *C. ænanthum superbum* ♂).

The Right Hon. Joseph Chamberlain, M.P., showed fine forms of *Dendrobium Phalænopsis Schröderianum*.

F. Wigan, Esq., Clare Lawn, East Sheen (gr. Mr. W. H. Young), showed *Cypripedium* × *Clarence* (*C. Spicerianum* ×), forms of *Cattleya superba*, and *Lælia elegans Cawenbergiana*.

Thos. Statter, Esq., Stand Hall, Whitefield, Manchester (gr. Mr. R. Johnson), sent *Cypripedium* × *Edwardii*, *C.* × *Robertii*, *C.* × *Ariadne*, forms of *Cattleya aurea*, &c.

W. Thompson, Esq., Walton Grange, Stone, Staffs (gr. Mr. W. Stevens), sent fine forms of *Cattleya labiata*.

Mrs. Wingfield, Ampthill House, Ampthill (gr. Mr. J. Empson), showed *Cattleya labiata*.

ORCHID COMMITTEE, NOVEMBER 27, 1894.

HARRY J. VEITCH, Esq., in the Chair, and eleven members present.

Awards Recommended:—

Silver Banksian Medal.

To Messrs. Hugh Low & Co., Clapton, for a group of *Cattleya labiata*, *Angræcum sesquipedale*, and other Orchids.

To Mr. P. McArthur, Maida Vale, W., for a group of Orchids.

First Class Certificate.

To *Phaio-Calanthe* × *Sedeniana* (*Phaius grandifolius* ♀ × *Calanthe* × *Veitchii* ♂) (votes unanimous). A fine hybrid with erect scape of cream-white and rose-coloured flowers, raised by Messrs. Jas. Veitch & Sons some years ago, and now exhibited by Baron Schröder, The Dell, Egham (gr. Mr. H. Ballantine) (fig. 33).

To *Lælio-Cattleya* × *Decia* (*C. Perrinii* ♀ × *C. Dowiana aurea* ♂) (votes unanimous), from Messrs. Jas. Veitch & Sons, King's Road, Chelsea. The plant had the growth of *L. Perrinii*, and a flower equal in size to *C. labiata*. Sepals and petals bright rose-lilac, white at the base; lip formed like *L. Perrinii*, but much larger; the base light purple with white veining, the front bright mauve-purple.

Award of Merit.

To *Cypripedium* × *triumphans* (*C.* × *Sallierii* ♀ × *C.* × *œnanthum superbum* ♂) (votes unanimous), from M. Jules Hye-Leyson, Coupure, Ghent. A fine hybrid near to *C.* × *Polletianum*, but with flowers of a darker tint, and with more of the purple and white of *C.* × *œnanthum* in the upper sepal.



FIG. 33.—*PHAIO-CALANTHE* × *SEDENIANA*. (*Journal of Horticulture*.)

To *Cypripedium* *insigne* *Sanderianum* (votes unanimous), from Baron Schröder, The Dell, Egham (gr. Mr. H. Ballantine). A clear yellow and white form near to *C.* *i.* *Sanderæ*, but with smaller flowers.

To *Cattleya* *labiata*, Peeter's variety (votes, unanimous), from M. A. A. Peeters, St. Gilles, Brussels. A fine form with flowers marbled or variegated with rose-purple on a lighter ground.

To *Cypripedium* × *Lucienianum* (*C.* *Boxallii* ♀ × *C.* *bella-*

tulum ♂?) (votes, 6 for, 1 against), from Thomas Statter, Esq., Stand Hall, Whitefield, Manchester (gr. Mr. Johnson). The flower somewhat resembled *C. × nitens*, but had a mottled band of purple showing front and back beneath the white margin of the dorsal sepal. The use of *C. bellatulum* in obtaining it is extremely doubtful.

To *Odontoglossum Insleyii aureum* (votes unanimous), from C. J. Lucas, Esq., Warnham Court, Horsham (gr. Mr. Duncan). It is of the *O. I. splendens* class, and has brownish yellow unblotched sepals and petals.

To *Calanthe × Harold* (votes unanimous), from Norman C. Cookson, Esq., Oakwood, Wylam-on-Tyne (gr. Mr. Wm. Murray). A variety resembling *C. × Veitchii*, but with broader and brighter coloured flowers.

Botanical Certificate.

To *Serrastylis modesta*, Rolfe, n. genus et sp. (votes unanimous), from Major Joicey, Sunningdale Park, Sunningdale (gr. Mr. Fred J. Thorne). An extraordinary monotypic genus with dense drooping racemes of singular flowers, each about two inches across. Sepals and petals lanceolate, reddish, edged with yellow; lip three-lobed, the side lobes crimped, white with purple streaks, front lobe linear, white with purple line. Column with highly developed wings resembling the side lobes of the labellum. Discovered by F. C. Selimann in Cauca.

To *Pleurothallis strupifolia* (votes unanimous), from Messrs. F. Sander & Co., St. Albans. A rather strong-growing species with the appearance of a small *Epidendrum Parkinsonianum*, and racemes of purple and white flowers.

Other Exhibits.

Messrs. B. S. Williams & Son exhibited a group of Orchids.

Mr. J. F. Wilkinson, The Gardens, Highlands, Minchinhampton, sent a group of fine *Cypripedium insigne*.

Messrs. F. Sander & Co., St. Albans, staged an effective group of rare Orchids, in which were the singular *Epidendrum Laucheanum*, fine forms of *Dendrobium Phalænopsis Schröderianum*, *Lælia præstans*, and various hybrid *Cypripediums*.

Messrs. Jas. Veitch & Sons exhibited *Cypripedium × Milo* (*C. insigne Chantinii* ♀ × *C. × œnanthum superbum* ♂), and *Habenaria carnea nivosa*.

M. Jules Hye-Leysen, Ghent, sent *Cypripedium* × *Marguerite Hye* (*C.* × *Sallierii* ♀ × *C. Spicerianum* ♂), resembling a small form of *C.* × *Leeanum*; also *Odontoglossum macrospilum*, Reichb. f.

Mr. P. Weathers, Silverhall Nursery, Isleworth, showed *Cattleya labiata Weathersiana*, a very fine form with pearly-white sepals and petals and pale pink veining on the lip.

Norman C. Cookson, Esq., Oakwood, Wylam-on-Tyne (gr. Mr. William Murray), sent a small collection of good hybrid *Calanthes*.

W. Thompson, Esq., Walton Grange, Stone, Staffordshire (gr. Mr. W. Stevens), exhibited the true *Cattleya Victoria Regina* and *Odontoglossum præstans*.

Hamar Bass, Esq., Byrkley, Burton-on-Trent, also showed a fine example of *Cattleya Victoria Regina*.

Fred. Hardy, Esq., Tynesfield, Ashton-on-Mersey (gr. Mr. T. Stafford), sent *Cattleya* × *Mastersoniæ*, *Lælio-Cattleya* × *Tydea*, *Odontoglossum Mulus*, and *Lælia anceps Schröderæ*.

R. I. Measures, Esq., Cambridge Lodge, Camberwell (gr. Mr. H. J. Chapman), showed *Cypripedium* × *Zeus* (*C. callosum* ♀ × *C. ciliolare* ♂) and *C. insigne Richardii*, of the *Chantinii* class.

Earl Cowper, Panshanger, Herts (gr. Mr. J. Fitt), sent *Calanthe* × *Exquisite*, a nearly white flower of the *Veitchii* group.

H. Tate, Esq., Liverpool, showed *Cypripedium insigne montanum*.

J. Forster Alcock, Esq., Berkhamstead, staged a fine form of *Oncidium Forbesii*.

H. Grinling, Esq., Harrow Weald (gr. Mr. Rapley), showed *Calanthe vestita luteo-oculata*.

A. H. Smee, Esq., The Grange, Wallington (gr. Mr. G. W. Cummins), showed *Cypripedium* × *Smeeanum* (*C. Argus* ♀ × *C. villosum* ♂) and *C.* × *Dauthierii superbum*.

S. G. Lutwyche, Esq., Beckenham (gr. Mr. Paterson), sent *Cypripedium insigne* of the *Sanderianum* class, *C. tonsum*, and *Lycaste Skinnerii*.

ORCHID COMMITTEE, DECEMBER 11, 1894.

HARRY J. VEITCH, Esq., in the Chair, and eleven members present.

Awards Recommended:—*Award of Merit.*

To *Cattleya guttata* Prinzii "Viscount de Figueiredo" (votes unanimous), from the Right Hon. Lord Rothschild, Tring Park, Tring (gr. Mr. E. Hill). A large and handsome form with creamy yellow ground colour to the flowers, in place of the usual pink tint, and with rich crimson-purple lip.

To *Cypripedium* × William Lloyd (*C. bellatulum* ♀ × *C.* × *Swanianum* ♂) (votes unanimous), from Mr. P. Weathers, Silverhall Nursery, Isleworth. This is a beautiful and distinct hybrid, with the form and bright crimson tint of *C.* × Charles Rickman, but in the differently arranged petals indicating *C. Dayanum*, which was one of the species used in obtaining *C. Swanianum* (fig. 34).

To *Cypripedium* × *Swinburnei magnificum* (*C. Argus Moensii* ♀ × *C. insigne Chantinii* ♂) (votes unanimous), from E. Ashworth, Esq., Harefield Hall, Wilmslow, Cheshire, and T. W. Swinburne, Esq., Corndean Hall, Winchcombe. A much larger form than either of the two previously exhibited, the broad petals being blotched as in *C. Argus Moensii*.

To *Cypripedium* × J. Howe (*C. Sallierii* ♀ × *C. villosum aureum* ♂) (votes unanimous), exhibited by Walter Cobb, Esq., Dulcote, Tunbridge Wells (gr. Mr. J. Howe). This is an improvement on *C.* × *Sallierii Hyeantum*, which it otherwise resembles.

To *Schomburgkia rhinodora Kimballiana* (votes unanimous), from Messrs. Hugh Low & Co., Clapton. This singular variety has a tall erect inflorescence of loosely arranged rose-purple flowers, in colour and size resembling *Cattleya Bowringiana*.

To *Lælia* × *Euterpe* (*L. crispa* ♀ × *L. pumila Dayana* ♂) (votes unanimous), from Thomas Statter, Esq., Stand Hall, Whitefield, Manchester (gr. Mr. R. Johnson). This partakes closely of *L. pumila Dayana* in habit and size of flower, but the lip is larger and more fully developed in front.



FIG. 34.—CYPRIPEDIUM × WILLIAM LLOYD. (*Gardeners' Chronicle*.)

Botanical Certificate.

To *Bulbophyllum mandibulare*, from C. J. Lucas, Esq., Warnham Court, Horsham (gr. Mr. Duncan).

To *Masdevallia Peristeria*, from F. W. Moore, Esq., Royal Botanic Gardens, Glasnevin, Dublin.

Other Exhibits.

Messrs. B. S. Williams & Son, Upper Holloway, N., sent a small group of Orchids, in which hybrid *Cypripediums* were well represented.

Messrs. Hugh Low & Co. contributed a selection comprising a fine lot of *Cypripedium* '*Charlesworthii*, a plant of *C. Argus* × *C. Spicerianum*, × *Leeanum superbum*, *C.* × *Harrisianum superbum*, &c.

His Grace the Duke of Westminster, Eaton Hall, Chester (gr. Mr. Barnes), sent flowers of *Cattleya labiata* "*Princess Adolphus*," a variety with very richly coloured labellum, having cream-white blotches on each side, as in some forms of *C. Warscewiczii*.

Messrs. F. Sander & Co. staged an effective group of Orchids, among which were *Cypripedium* × *Hollidayanum* (*C. concolor* ♀ × *C.* × *almum* ♂) and *C.* × *Albert Truffaut* (*C.* × *Harrisianum vivicans* ♀ × *C. Spicerianum* ♂).

Mr. P. Weathers, Isleworth, showed *Cypripedium* × *Gravesiæ* (*C. niveum* ♀ × *C. Argus* ♂).

Messrs. Heath & Son, Cheltenham, sent *Lælio-Cattleya* × *Tresederiana pallida* (*L. crispa* ♀ × *C. Loddigesii* ♂).

Messrs. James Veitch & Sons, King's Road, Chelsea, showed *Epidendrum* × *Wallisio-ciliare* (*E. ciliare* ♀ × *E. Wallisii* ♂), a pretty hybrid with flowers larger than those of *E. Wallisii*. Sepals and petals yellow, lip white with yellow callus, in front of which were a few purple lines. Also *Cypripedium* × *Zeno* (*C.* × *nitens* ♀ × *C. insigne Chantini* ♂), *C.* × *Sirius* (*C. barbatum Crossii* ♀ × *C. Godefroyæ* ♂), *C.* × *Niobe*, and *C.* × *Minosa* (*C. Arthurianum* ♀ × *C. Spicerianum* ♂).

W. C. Walker, Esq., Winchmore Hill (gr. Mr. G. Cragg), sent *Eulophia megistophylla*.

A. H. Smee, Esq., The Grange, Wallington (gr. Mr. Cummins), sent *Amblostoma tridactylon* and *Cypripedium* × *Ashburtoniæ*.

Thomas Statter, Esq., Stand Hall, Whitefield, Manchester, showed *Lælia* × *Tresederiana*, *Cypripedium* × *Ariadne*, and *C.* × *Leeanum albens*.

S. G. Lutwyche, Esq., Eden Park, Beckenham (gr. Mr. Paterson), staged *Cypripedium insigne* var., *C. Curtisii*, *C. Dayanum*, *Dendrobium Phalænopsis*, and *D.* × *endocharis*.

Donors of Plants, Seeds, &c., to the Society's Gardens at
Chiswick during the year 1894.

- ALBERT, H. & E., 17 Gracechurch Street, London. Albert's Pure Concentrated Horticultural Manure.
- BARR & SON, Covent Garden. Campanulas and Tomatos.
- BAILEY, J., Hucknall Torkard, Notts. Pea Rushcliff Beauty.
- BENARY, E., Erfurt. Vegetable and flower seeds.
- BONAVIA, Dr. Raheemabad Onion.
- BUNYARD & Co., Maidstone. Peas, Carnations, and collection of Plums.
- CANNELL & SONS, H., Swanley. Gloxinias, Potatos, &c.
- CARTER & Co., J., High Holborn. Tomatos, &c.
- CHARRINGTON, Captain, Hyde Park Gardens. Miscellaneous plants from Spitzbergen.
- CLIBRAN & SON, W., Altrincham. Urceocharis Clibrani, Passifloras and Tropæolums.
- COLLIS, J., Bollo Lane, Chiswick. Strawberry Collis's May Queen.
- COOPER, TABER, & Co., Witham. Potato The Gentleman.
- CRADWICK, W., Jamaica. Filmy Ferns.
- CORBETT, J., Whitby. Carnations, &c.
- CROWLEY, PH., Croydon. Alocasias.
- DANIELS BROS., Norwich. Seed Potatos.
- DICKSONS, Chester. Peas.
- DOBBIE & Co., Rothesay. Vegetable and flower seeds.
- EATON, J. S., New Radford, Notts. Seed Potatos.
- ECKFORD, H., Wem. Culinary and Sweet Peas.
- FARQUHAR, R., Aberdeen. Seed Potatos.
- FLETCHER, H., Annesley, Notts. Seed Potatos.
- FORBES, J., Hawick. East Lothian Stocks, &c.
- FOSTER, J., Kettering. Seed Potatos.
- FRASER, J., South Woodford. Plums and Clematis.
- GILBERT, R., Stamford. Seed Potatos.
- GUILDFORD HARDY PLANT NURSERY, Guildford. Collection of Alpine and other plants.
- HARRISON & SONS, Leicester. Peas and Cauliflowers.
- HARVEY, G., Stanton Hall Gardens, Bakewell. Peas.
- HORSFORD, F. H., Charlotte, Vermont, U.S.A. Peas.
- HOWARD, C. W., Bridge. Seed Potatos.
- HUBERT & MAUGER, Guernsey. Tigridias.
- HUGHES, J., Rotherham. Peas and seed Potatos.
- HURST & SON, Houndsditch. Vegetable seeds.
- JENKINS, Mrs., Abergavenny. Apple grafts.
- JOHNSON & SON, W. W., Boston. Seed Potatos.
- JONES, H. J., Lewisham. Dahlias, Begonias, and Pelargoniums.
- KENT & BRYDON, Darlington. Vegetable seeds.
- KEYNES, WILLIAMS, & Co., Salisbury. Cactus Dahlias.
- LAING & SONS, J., Forest Hill. Begonias.
- LADHAMS, B., Shirley, Southampton. Pink Ernest Ladhams and *Heliopsis scabra major*.
- LAMB, J., Burton Joyce, Notts. Carnation Duchess of Portland.
- LANE & SON, H., Berkhamstead. Collection of Plums.
- LAXTON BROS., Bedford. Vegetable and flower seeds.
- LEIGH, P., Elton Bury. Violas.
- LEMOINE, V., Nancy. Pelargoniums, Fuchsias, Cannas, &c.
- LYE, J., Lavington. Seed Potatos.
- MCDUGALL, G., Ravena Cottage, Stirling. Tomato seed.

- MAHER, R., Yattendon Court, Newbury. Peas.
- MARSHALL, W., Bexley. Anthuriums and *Campanula persicifolia* semi duplex.
- MASTERS, Dr., Ealing. Seeds of *Ricinus zanzibariensis*.
- MERCER, H., Higher Bebington. Carnation Cheshire Favourite.
- MILES, E., Leicester. Seed Potatos.
- NUTTING & SONS, 106 Southwark Street, London. Cauliflower and Tomato seeds.
- PAUL & SON, Cheshunt. Cannas, Campanulas, Clematis, seed Potatos, &c.
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INDEX.

- Absorption of vapours by Oranges, xxiii
- Adiantum Clæsiænum*, lxvi
- Aërides* Hughii, cv
- Alocasia Watsoniana*, lix
- Alpinia nutans*, lviii
- Alsophila Marshalliana*, lxvi
- Alstrœmeria pelegrina alba*, lxvi
- American blight, xv
- Angræcum Fournierianum*, cxxv
- " *porrigens*, xci
- Anthurium Scherzerianum atropurpureum*, xlix
- Apple Oaklands Seedling, xxxiv
- " *Roi d'Angleterre*, xxix
- " *South Lincoln Beauty*, clxvi
- Aquilegia Stuarti*, xxv
- Arisæma fimbriata*, lxxxv
- Ash scale, xxii
- Asparagus, 118
- " *plumosus Sanderi*, xlix
- splenium Drueryi*, lxix
- " *incisum*, lxvii
- " *Mayi*, lxvii
- Atragene alpina*, liv
- Banana, products of the, cxlix
- Basal rot in Daffodils, xiv
- Bean, Veitch's French, clxi
- Beans, Haricot, 123
- Beaumontia grandiflora superba*, xlix
- Beetroot, 116
- Begonia platanæfolia illustris*, lxix
- " *Rajah*, cciv
- ifernaria tyrianthina*, cxxii
- Bletia catenulata*, ccxxxiv
- Blue Primroses, xvi
- Borneo, botanical exploration in, 44
- Botanists, British and Irish, cxxxix
- Bougainvillæa glabra*, lviii
- " " *Sanderiana*, lviii
- Broccoli, 119
- Brussels Sprouts, 119
- Bulbophyllum Laysianum*, cxxxiv
- Cabbage, 118
- Cactaceous plants, 71
- Calanthe* × *Baron Schröder*, xc
- " × *Bryan*, lxxxv
- " × *Florence*, lxxxv
- " × *William Murray*, lxxxv
- Calochortus Howelli*, lxxx
- " *Plummeræ*, clxxxviii
- Camaridium Lawrenceanum*, c
- Camellia Exquisite*, xli
- Canna trials*, ccxx
- Carnation John Peter Rugus, xxxviii
- " *Sir H. Calcraft*, xxxviii
- " *Sports*, cxlviii
- Carnations, ccxv
- Carpenteria californica*, 65
- Carrot, 115
- Castle Coch Vineyard, 96
- Catasetum O'Brienianum*, cclii
- Cattleya* × *Brownæ*, ccxlv
- " × *Fabia*, cclii
- " × *Kienastiana*, ccxxxv
- Cauliflower, 119
- " *trials*, clxix
- Ceanothus*, 59
- Cedar of Goa, 1
- Celery, 123
- Centaurea spathulata*, cxlviii
- Cercidophyllum japonicum*, 14
- Chicory, 123
- Chionodoxa bulbs attacked by aphids*, cl
- Chives, 121
- Choisya ternata*, 59
- Christ's Thorn, 59
- Chrysanthemums, raising, 128
- Chysis bractescens*, xcix
- Clematis* × *Countess of Onslow*, lxxi
- Cœlogyne Meyeriana*, ccxli
- " *Mossiæ*, xciv
- " *Swaniana*, cix
- Coffee, substitute for, cxxxv
- Cole Rabi, 119

- Common vegetables, origin, history,
and value of, 113
Common vegetables, nutritive
values of, 126
Commutation of subscriptions, cclxiii
Cornus brachypoda, 19
" *Kousa*, 19, 30
Coryanthes Wolfii, xxv, cxii
Corylopsis pauciflora, 18
" *spicata*, 18
Cotoneasters, 64
Crococoma aurea imperialis, cxcix
Cucumber, 125
" *Blendworth Perfection*,
" *clxi*
" *Progress*, xxxiii
Cyathea Mastersiana, lxvii
" *pygmæa*, lxvi
Cymbidium cyperifolium, cclii
Cypripedium × *Adrastus*, lxxxv
" × *Annie Measures*,
" *cviii*
" × *Arnoldiæ*, cexlii
" *callosum Sanderæ*, xciv
" × *Capt. Lendy*, xci
" × *Chas. Rickman*,
" *ccxxxix*
" × *Cyris*, ccli
" × *Excelsius*, ccxxxiii
" × *Fraseri*, xci
" × *Godseffianum*, xci
" *insigne Ernesti*, cclii
" *Sanderianum*, cclv
" × *James H. Veitch*,
" *ccxxxv*
" × *J. Howe*, cclviii
" × *Leysenianum*, cxxv
" × *Lucienianum*, cclv
" × *macrochilum gigan-*
" *teum*, cx
" × *Mastersianum*, cv
" × *Morganæ langley-*
" *ense*, lxxxiv
" × *Nandi*, ccxl
" × *Sargentianum*, cxxii
" × *The Pard*, ccxxxviii
" *three-lipped*, xxii
" × *William Lloyd*,
" *cclviii*
" × *Winifred Hollington*,
" *cii*
" × *W. R. Lee*, ccxxxiii
Cytisus, 61
Daffodil, what it can do, xx
Datura chlorantha, lxvi
Dendrobium × *Alcippe*, cv
" *atroviolaceum*, lxxxiv
" *Cœlogyne*, cexlix
Dendrobium × *Cybele*, xciv
" × *dellense*, cx
" × *Euryalus*, xcix
" × *Hebe*, lxxxv
" *superbum Huttoni*,
" *xcviii*
" × *Sybil*, xciv
" × *Virginia*, xciv
Deutzia parviflora, 64
Disa × *langleyensis*, cxii
Disanthus cercidifolius, 18
Earwigs, xviii
Edible tubers, xiv
Endive, 122
Epidendrum Ellisi, cv
Epilælia × *Hardyana*, ccli
Eria æridostachya, c
Eriocnema Sanderæ, cciii
Eryngium alpinum, lxxxix
Escallonias, 65
Eulophiella Elisabethæ, cii
Exacum affine, clxxxv
Exfoliated bark in Pears, xvi
Exochordia Alberti, lix
Fagus rotundifolia, lxxv
Fernery, underground, 84
Filmy Ferns, 79
Forsythia intermedia, xlix
Fremontia californica, 59
Galeandra Devoniana, xci
" *lagoensis*, ccxxxi
Gardeners and their employers, 86
Garlic, 121
Gaultheria leaves injured, xxv
Genistas, 61
Gentiana acaulis, diseased, cclix
Gleditschia japonica, 16
Gloxinera × *Brilliant*, lxiv
Habenaria carnea nivosa, ccxxxi
" *Susannæ*, ccxxxvi
Hawthorn, early flowering of, xxii
Heliconia illustris, lxvii
Hemitelia Lindenii, lxvii
Horse Chestnuts, 60
" " *cankered*, xxvi
Hybrid Walnut, 34
Hydrangea arborescens, 30
" *paniculata*, 18
" *radiata*, 30
Hymenophyllum chiloënse, lxxviii
Indigoferas, 61
Iris Helenæ, lii
Jamesia americana, 65
Japanese Hornbeams, 20
" *Oaks*, 20
Judging at shows, 134
" *by points*, 139
Juglans Sieboldiana, 21

- Kerria japonica*, 18
Kolreuteria paniculata, 60
Lælia anceps Ashworthiana, lxxxiv
 ; × *Euterpe*, cclviii
Lælio-Cattleya × *Aylingii*, cxvii
 „ × *broomfieldensis*,
 cxxxxiii
 „ × *Canhamiana alba*,
 cxv
 „ × *Clonia*, cclxviii
 „ × *Decia*, ccliv
 „ × *Frederick Boyle*,
 cxvii
 „ × *The Hon. Mrs.*
Astor, xc
 „ × *Timora*, cxxxviii
 „ × *Tydea*, xci
 „ × *Wellsia*, cclxii
 „ × *Zephyra*, cxxxx
 “Lead Plant,” 61
 Leek, 122
Lespedeza bicolor, 17
 Lettuce, 122
Lilac Madame Lemoine, lxiii
 „ *Souvenir de L. Spath*, lxiv
Lilacs, Chinese and Japanese, 31
Lilium candidum, diseased, xxvi
 „ *Thunbergianum* *Horsmanni*,
 clxxxiii
Lonicera flexuosa, 19
 Lord Bute's vineyards, 95
Loropetalum chinense, xlv
Lycaste × *schonbrunnensis*, cxxxxi
Lygodium dichotomum polydactylon,
 lxxiv
Magnolia parviflora, lxvii
Magnolias, 13, 24, 57
Maranta Massangeana, lxvii
 Marrow, 125
Masdevallia × *Cassiope*, cxxv
 „ *gargantua*, xciv
 „ × *Kimballiana*, cxxvi
Meliosma myriantha, 16
 Melon Centre of England, xxxiv
 „ *Eclipse*, xxxv
 „ *Pride of Ingestre*, xxxiii
 „ *The Earl's Favourite*, clxiv
Miconia vesicaria, lxvii
Mignonette trials, cxvii
Miltonia × *Bleuana rosea*, cclxvii
 „ *flavescens*, cix
Moræa iridioides, cxiv
Myrica asplenifolia, 34
Narcissus, variegation in, xxii
Nepenthes, 48, 49, 50
 „ *bicalcarata* in flower, cliii
 „ *Burbidgæ*, 50
 „ *mixta*, cxcix
Odontoglossum crispum *Baroness*
Schröder, cxxi
 „ „ *Frantz Masereel*
 ccl
 „ „ *Lowianum*, cix
 „ „ *excellens chrysomela-*
num, xciv
 „ „ *Vuystekeanum*, cxvi
Oncidium *Lucasianum*, cv
 „ „ *ornithorhynchum album*,
 cclxvii
 „ „ *Wheatleyanum*, cclii
 Onions, 120
Oranges, *Suntara*, xxi
Orchid-growing, popular, 104
 „ beetle, xv
Osmunda javanica, lxxiv
Oxalis cernua, cclxviii
Parsley, 123
Parsnip, 115
Pavonia intermedia kermesina, xli
Pea Maincrop, clv
Peach Late Devonian, clxi
Pear Beurré Dubuisson, cclxvii
 „ *Le Lectier*, cclxvii
Peas, 124, cliv, cclxxvii
Pelargoniums, cxxv
Pepper, germinating *Black*, cli
Phaio-Calanthe × *Arnoldia*, lxxxv
 „ × *Sedeniana*, ccliv
Phaius Blumei, xcvi
 „ × *Marthæ*, xciv
 „ *Owenia*, cix
 „ × *Owenianus*, cxvi
Phalænopsis Youngiana, xci
 „ × *Vesta*, xcvi
Phlox canadensis, lix
Phloxes, cciv
Physalis Franchetii, ccv
Pink trials, cccxxv
Plagianthus Lyalli, 59
Plants, Natural History of, cxxxviii
Platycarya strobilacea, 21
Pleurothallis Roezli, xci
Plum Monarch, clxi
 „ *Rivers' Late*, cclxv
Plumeria alba, cclxxxviii
Polypodium Schneideri, lxvii
 Potato, 117
Potatos, clxi, cclxx
 „ and sulphate of copper, xv
Primula capitata, cxxii
 „ *obconica*, cause of eczema,
 clii
Prunus alleghanensis,
 „ *americanus*, 29
 „ *Baseyi*, 29
 „ *maritima*, 29

- Prunus* Miqueliana, 29
 „ Mume, 17
 „ pendula, 28
 „ persica magnifica, xli
 „ pumila, 28
Pseudægle sepiaria, 59
Pteris ludens, lxxiv
Pyrus betulifolia, 30
 „ flexuosa, 18, 63
 „ japonica, 18
 „ sinensis, 30
 „ spectabilis magnifica, lix
 Radish, 114
Renanthera coccinea, cexl
Retinospora squarrosa sulphurea, cxc
Rhododendrons at Penllergare, xviii
 „ leaves injured, xxv
 „ multicolor Mrs. Heal,
 xli
 „ Princess Wm. of Wur-
 temburg, lviii
 „ rhombicum, lix
 „ Rosy Bell, lix
 Richmond allotment holders, 140
 Rocambole or Sand Leek, 121
Rubus deliciosus, 63
 „ phœnicolasius, cciv
 „ japonicus tricolor, clxxxiii
Saintpaulia ionantha, clxxxv, ccvii
Sarracenia × Willisi, lxxiv
Satyrion coriifolium, cv
Schizophragma hydrangeoides, 18
Schomburgkia rhinodora Kimballiana,
 celviii
 Sea Kale, 120
Selaginella Lyalli, clxxxviii
 „ viridangula, clxxxviii
Senecio grandiflora, xli
 Shallot, 121
 Skimmias, 59
 Snowdrop tree, American, 19
Sobralia × Veitchii, ccxxx
Solanum Maglia, 117
Sophro-Cattleya × Eximea, ccxlii
 Spinach, 120
 Strawberry Laxton's Latest of All, clv
 „ May Queen, xxxvi
Streptocarpus Wendlandii, xlv
 Stuartias, 58
Styrax japonica, 31
 „ Obassia, 19
 Sugar-cane, diseased, cxlvii
 Sweet Pea trials, ccxvii
Thunbergia Harrisii, lviii
 Tomato, 125
 „ Golden Nugget, clvi
 „ Sutton's Dessert, clvi
 Tomatos, cliv, clxxv
Trifolium subterraneum, xxvi
Tritoma with axillary buds, cliii
 Tulip, abnormal, xviii
Vanda Roeblingiana, ccxxviii
Veronicas, cci
Viburnum plicatum, 19
Vitis Coignetia, 60, cci
 Weir, the late Mr. Jenner, xvii, xx
Wistaria multijuga, lxvii
Xanthoceras sorbifolia, 60
 Zelkova Keaki, 19
Zephyranthes carinata, cci

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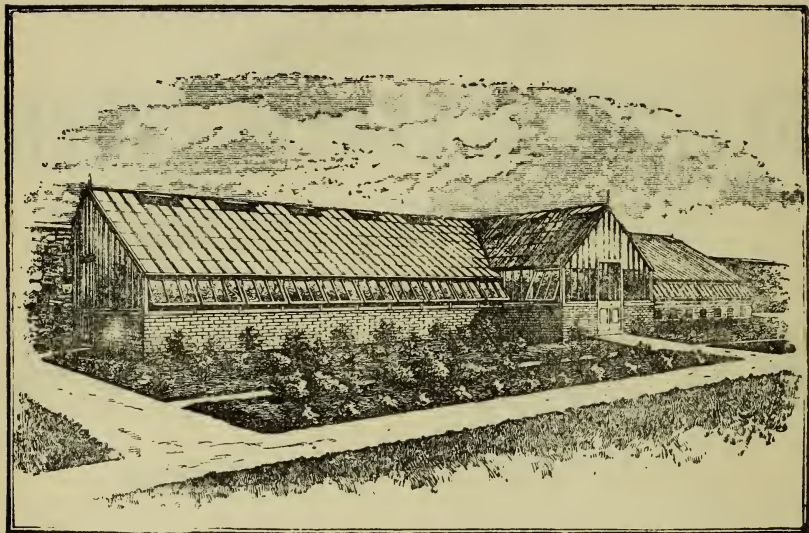
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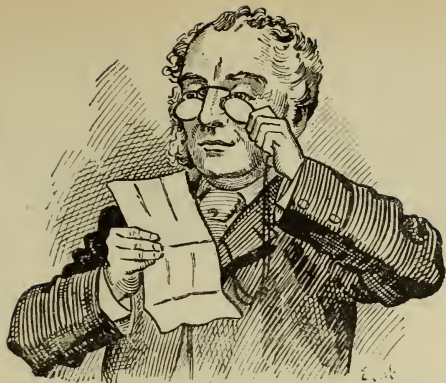
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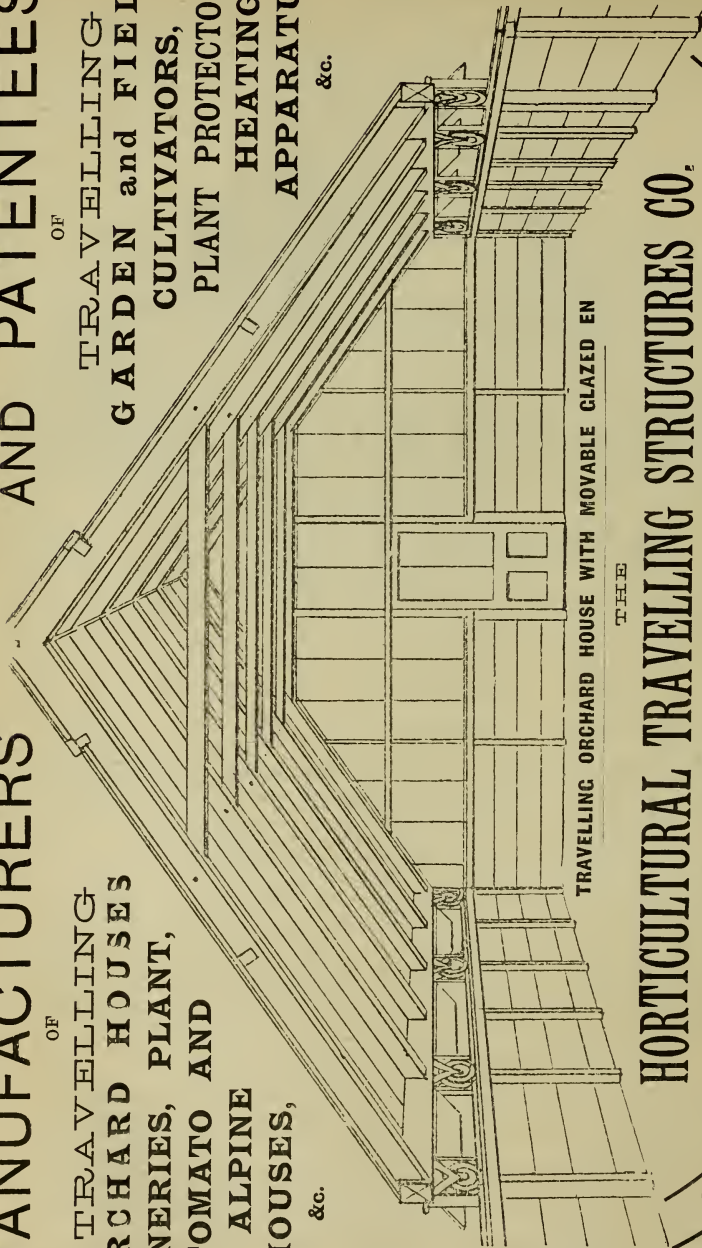
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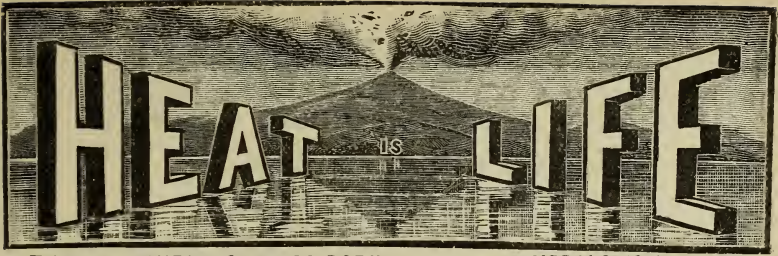
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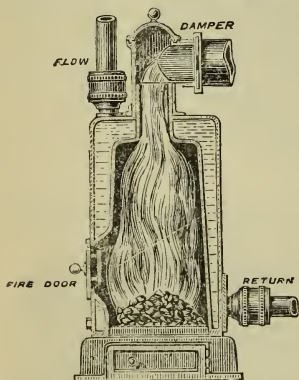
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