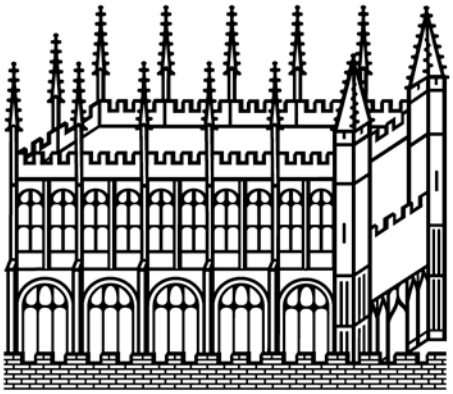

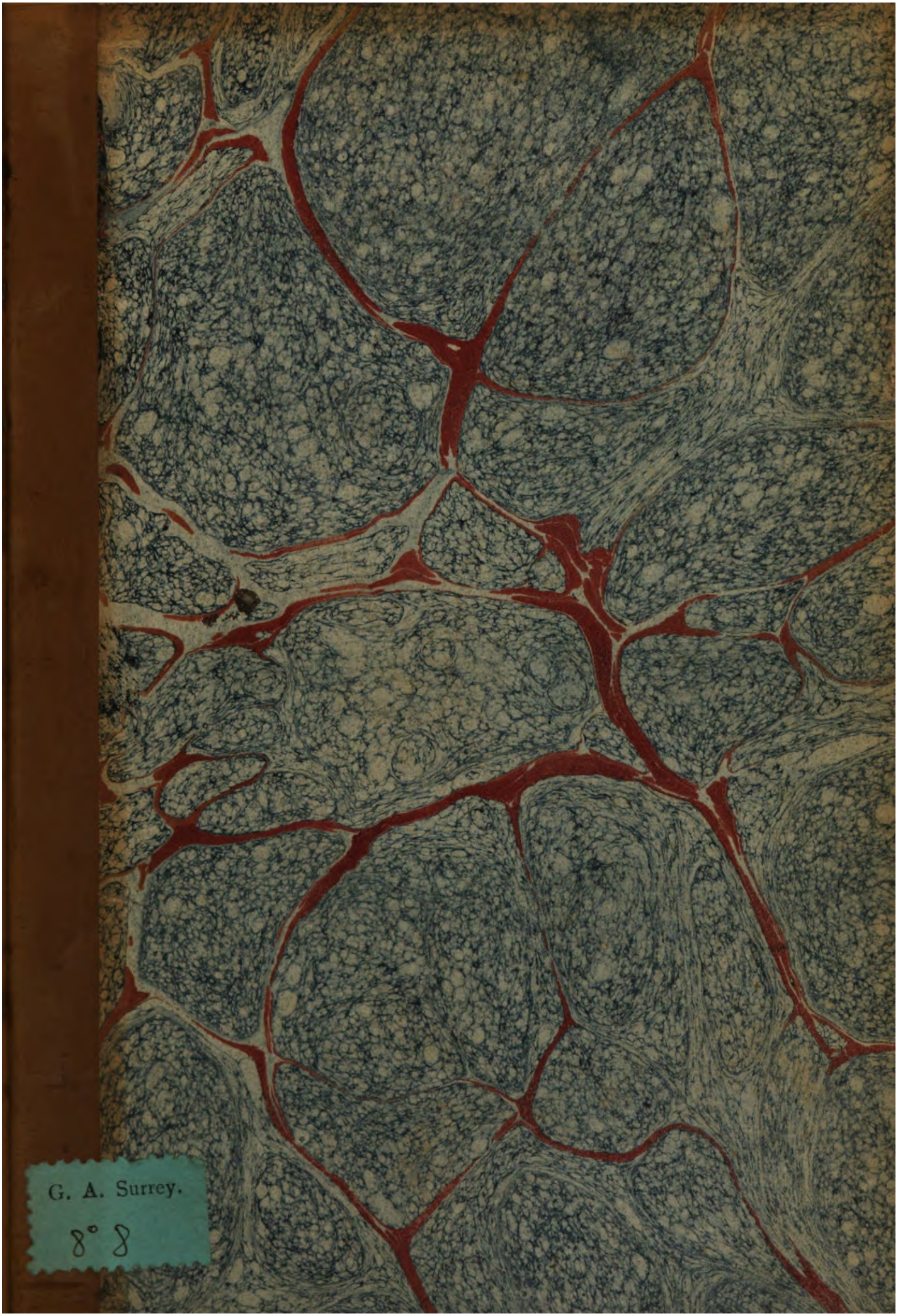

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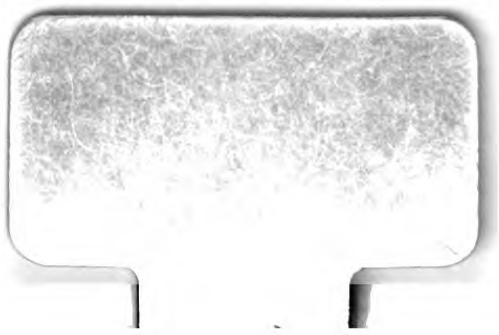
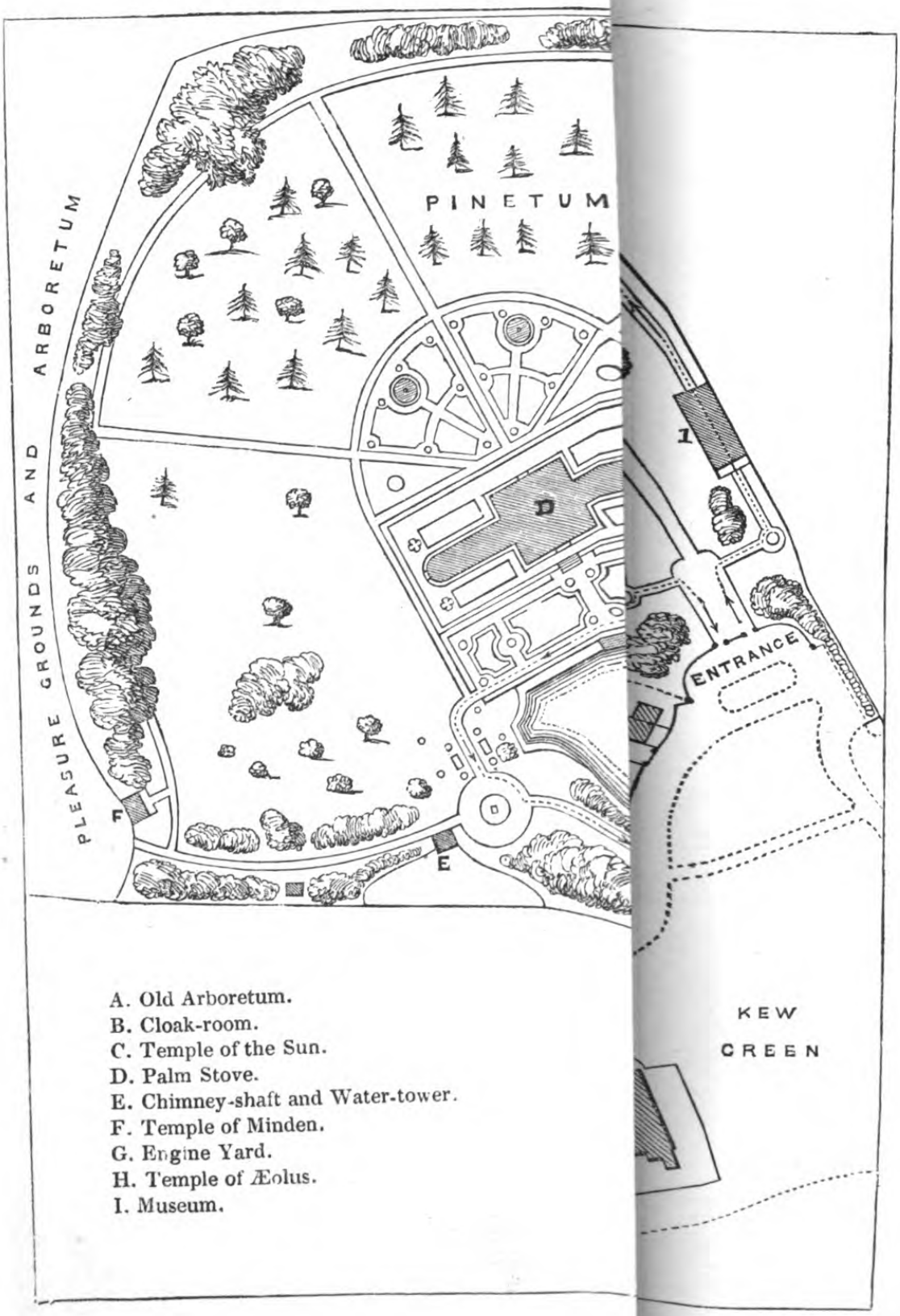


KEW GARDENS.

LONDON:
SPOTTISWOODE and SHAW,
New-street-Square.



A. Old Arboretum.
B. Cloak-room.
C. Temple of the Sun.
D. Palm Stove.
E. Chimney-shaft and Water-tower.
F. Temple of Minden.
G. Engine Yard.
H. Temple of Æolus.
I. Museum.

PLA

KEW GARDENS;

OR

A POPULAR GUIDE

TO THE

ROYAL BOTANIC GARDENS OF KEW;

BY

SIR W. J. HOOKER,

K.H. D.C.L. F.R.A. & L.S.

&c. &c.

Director.

"Soft roll your incense, *Herbs* and *Fruits* and *Flowers*,
In mingled clouds, to Him, whose sun exalts,
Whose breath perfumes you, and whose pencil paints."

LONDON:

PRINTED FOR

LONGMAN, BROWN, GREEN, AND LONGMANS,

PATERNOSTER-ROW.

1847.

PREFACE.

A GUIDE, which should indicate to strangers the more remarkable features in the Royal Botanic Gardens of Kew, and point out some of the many interesting plants cultivated there, has long been a desideratum. Of late, this want has been peculiarly felt, because of the great extent of ground, the number of plant-houses, and the amazing increase of the collection. The very fact, however, of the continued additions to the plants, combined with their rapid growth under good cultivation, render any approach to a *perfect* Guide or Handbook a very difficult, if not an impossible, task. For though it is true that only a reference to the more remarkable objects can be desired, yet the frequent arrival of novelties must, of necessity, cause such a book to become, in a measure, imperfect soon after its publication. This circumstance, along with the constantly increasing bulk, entails the frequent removal of plants from one house to another; thus the individuals that are recorded as occupying one particular greenhouse or stove, may require shifting the very next day. It is eminently needful to warn our readers of this circumstance, because they will thus comprehend how it happens that such a plant stated to exist in Plant-House No. I., for instance, may not at the time of their visit be found there. To a certain extent, and owing to the causes just mentioned, individual specimens cannot be stationary for a great space of time: still we shall endeavour to retain them in the places indicated as long as possible; and if a large plant of peculiar interest be necessarily removed, we shall, as often as we can, replace it with a smaller individual of the same kind. When this cannot be done, and any particular plant is not seen where the Guide Book states it to be, *the Index* will probably refer to the page where it is noticed.

The annexed Plan of the Garden and Plant-Houses will, it is expected, prove useful; and a stranger to the ground and the collection may do well to follow the route, indicated by *dotted lines*, as the most convenient for giving a tolerably complete survey of the whole.

It is particularly requested that visitors will enter the houses by the doors indicated for the purpose; if they do otherwise, and come in by opposite ones indiscriminately, they must meet and pass each other, which the narrowness of the walks renders difficult.

The beauty of these grounds, and of the plants which they contain, combined with the liberal admission granted by Government, attract, as may be supposed, great crowds of visitors; and a few needful regulations, over and above those expressly posted in the grounds, may be here appropriately given.

1. Smoking, or eating and drinking, or the carrying provisions of any kinds into the Garden, is strictly forbidden.

2. No packages or parcels can be admitted within the gates. Ladies who may feel incommoded by their cloaks, umbrellas, reticules, small hand-baskets (and it is very undesirable that the latter be carried about the grounds), &c., can deposit them in the cloak-room, at the head of the first walk, while they make the tour of the Gardens.

3. No person otherwise than respectably attired can be admitted; nor children too young to take care of themselves, especially infants in arms, unless a parent or suitable guardian, besides the servant, be with them: the police have strict orders to remove such, as also persons guilty of any kind of impropriety.

4. It is by no means forbidden to walk upon the lawns; still it is requested that preference be given to the gravel paths, and especially that the lawn edges parallel to the walks be not made a kind of footway, for nothing renders them more unsightly. It might scarcely be thought needful to say, that leaping over the beds, and running, particularly on the mounds, are prohibited; yet the latter has been practised, and so heedlessly, that two very serious accidents have resulted, and grievously scarred faces have been the memento of such folly. The Gardens are intended for agreeable recreation and instruction, not for idle sports.

5. It is requested that visitors will abstain from touching the plants and flowers: a contrary practice can only lead to the suspicion, perhaps unfounded, that their object is to abstract a flower or a cutting, which, when detected, must be followed by disgraceful expulsion.

More might be said on this subject; but the Director, while bearing willing testimony to the excellent conduct of the many thousands who frequent the Gardens, prefers to rely on the good sense and honourable feelings of the visitors, and the value they must attach to the privileges here afforded, rather than multiply restrictions which may not be absolutely required.

In this small volume little is said respecting the Museum: the

reason is, that, at the time of publication, its fittings-up even are not completed; but a few weeks will witness the deposit therein of many curious vegetable productions; and in a short time the Museum will constitute a highly important feature in the Gardens. Among the persons who may come to survey it, as well as the living plants, there will always be travellers or merchants who hold intercourse with various parts of the globe, and who would gladly contribute to this great national collection. Brief instructions, printed expressly for distribution, may be had of the Director, or of the Curator (Mr. John Smith). The Annual Reports, indeed, printed by the House of Commons, and the pages and plates of the "*Botanical Magazine, or Plants of Kew,*" do record the names of various donors to the establishment. Large though our stores assuredly are, there yet remains much to be obtained from almost every distant part of the world. No European garden yet boasts of the famous *Doum Palm* of Egypt, one of the most remarkable of the palm tribe; nor the *Teak*, or *Oak*, as it is indifferently called, *of Africa*, which yields the most valuable of all timber for ship-building. The same may be said of the *Maldive*, or *Double Cocoa-nut* (*Coco de Mer*), the *Camphor Tree of Sumatra*, and a hundred other rarities. Well-ripened seeds of such are always acceptable, and might be collected with little difficulty.

We may here mention, that, in despatching packages and parcels, the quickest mode of transit is always the best. When sent by the Queen's ships or the Royal mail, or the Peninsular and Oriental Company's steamers, the address should be:—

"To the Secretary of the Admiralty,
"For Sir Wm. J. Hooker, "London.
"Royal Gardens, Kew."

If by the East India Company's steamers, address,

"To Dr. Royle,
"East India House,
"For Sir Wm. J. Hooker, "London.
"Royal Gardens, Kew."

If by merchant or other vessels, the direction is simply,

"To Sir Wm. J. Hooker,
"Royal Gardens, Kew,
"London."

The *Botanic Gardens* are open every day (Sundays excepted)

from one to six o'clock, and a bell is rung to announce the latter hour.

N. B. The *Royal Pleasure-Grounds*, sometimes by strangers confounded with the Botanic Gardens, constitute a separate though adjoining portion of ornamental ground, accessible from Midsummer-day to Michaelmas, every Thursday and Sunday, by three gates: two in the road leading from Kew to Richmond, called the *Lion Gate* and the *Pagoda Gate*, and one by the river side, nearly opposite Brentford Ferry, and called the *Brentford Gate*.

W. J. HOOKER,
DIRECTOR.

Royal Gardens, Kew,
July 1. 1847.

" So sits, enthroned in vegetable pride,
Imperial Kew, by Thames's glittering side:
Obedient sails from realms unfurrow'd bring
For her the unnamed progeny of Spring.

" Delighted Thames through tropic umbrage glides,
And flowers antarctic bending o'er his tides,
Drinks the new tints, the sweets unknown inhales,
And calls the sons of science to his vales.
In one bright point admiring Nature eyes
The fruits and foliage of discordant skies,
Twines the gay flow'ret with the fragrant bough,
And binds the wreath round George's regal brow.

" Sometimes, retiring from the public weal,
One tranquil hour the Royal Partners steal,
Through glades exotic pass, with step sublime,
Or mark the growth of Britain's happier clime."

KEW GARDENS.

It is generally known that considerable changes in the Royal Botanic Grounds of Kew were contemplated about the year 1840, when, from being a private garden, belonging to the Royal Family, and maintained by funds from the Board of Green Cloth, it was liberally relinquished by her present Majesty Queen Victoria, and placed under the control of the Commissioners of Her Majesty's Woods and Forests, with the view of rendering it available to the general good. The public, having since been freely admitted to the Gardens, under a few needful regulations, must have observed the many alterations and improvements effected under the sanction of the above-mentioned Commission, and cannot fail to be desirous of some particulars respecting them. It is with a view to satisfy such laudable curiosity, and to increase the interest with which the Gardens are visited, that this Guide is now compiled.

We shall not here enter into the full and early history of the Royal Gardens of Kew: a few statements are, however, necessary, and we have selected them from the best authorities.

About the middle of the seventeenth century, the spot that now forms the Royal Gardens of Kew, together with a residence called *Kew House,* belonged to R. Bennett, Esq., whose daughter and heiress married Lord Capel. This nobleman was much addicted to cultivating plants, and is said to have introduced several new trees and fruits at Kew, which he had brought from France: among them two *Lentisks,* or *Mastic Trees,* for which he paid 40*l.* (a large sum 200 years ago) to one Versprit, and four white-striped and variegated *Hollies,* costing 5*l.* each tree. In Macky's *Tour through England,* published in 1724, mention is made of "the fine seat and excellent gardens, said to produce the best fruit in the kingdom, belonging to that great statesman and gardener, Lord Capel. Kew House and grounds then passed into the hands of Mr. Molyneux, who was secretary to King George II. (when Prince of Wales), and

who married Lady Elizabeth Capel. He was well known as a man of literature and an astronomer. With an instrument of Mr. Molyneux's own construction, and in those very grounds, Dr. Bradley made the valuable discoveries relating to the fixed stars, to commemorate which an inscription was placed by the late King William IV. on the pedestal of a sun-dial, which stands on the identical spot which had been occupied by Dr. Bradley's telescope, upon the lawn, opposite to the present palace.

The Prince of Wales, who was son to George II., and father to George III., admiring the situation of *Kew House,* took a long lease of it from the Capel family about the year 1730, and began the pleasure grounds, containing nearly 170 acres. They were completed by his widow, Augusta, Princess Dowager of Wales, who delighted in superintending the improvements, then carried on upon a most extensive scale. At this time Sir W. Chambers was employed in decorating the gardens at Kew with temples, &c., an account of which he published in a large folio work, with many plates, (dedicated to the Princess Dowager of Wales) under the title of "Plans, Elevations, Sections, and Perspective Views of the Gardens and Buildings at Kew, in Surrey, the Seat of H. R. H. the Princess Dowager of Wales."

The exotic department of this garden was commenced by the same princess, and much favoured by the Earl of Bute, about the middle of the eighteenth century. Many of the finest foreign trees were contributed by Archibald Duke of Argyle (styled by Horace Walpole the Tree-monger), who sent them from his once richly stored garden at Whitton, near Hounslow.

We find that in the year 1759, Mr. W. Aiton, a pupil of the celebrated Philip Miller, of the Chelsea Physic Garden, was placed in charge of the Botanical Garden at Kew,—a gentleman no less distinguished by his private virtues than his knowledge of plants, and great skill in cultivating them. His professional abilities quickly procured him the notice of the late Sir Joseph Banks, and a friendship commenced which subsisted between them for life.

About the year 1789 his Majesty George III. purchased Kew House, which was soon afterwards pulled down, and its furniture removed to an older mansion, since known by the name of *Kew Palace,* and once the property of Sir Hugh Portman, who is mentioned as "the rich gentleman who was knighted by Queen Elizabeth at Kew." This small but picturesque red brick dwelling, which appears to be of the date of King James, or Charles I., was purchased in 1781 for Queen Charlotte, and was long the favourite suburban residence of the Royal Family. Her Majesty evinced much interest in the increase of the collection of plants, and justly does the late

Sir James E. Smith, President of the Linnæan Society, bear testimony to the Queen's love of botany, when he says "that the genus *Strelitzia** (fig. 1.) (so called by Mr. Aiton) stands on the sure basis of botanical knowledge and zeal, few persons having cherished the study of nature more ardently, or cultivated it so deeply, as her Majesty." Under such auspices, and aided by the enlightened patronage of Sir Joseph Banks, it was only to be expected that the garden of Kew should become celebrated all over the world. So early as 1760, the great or old Stove was built by Sir William Chambers: it still exists, and must have been a remarkable structure for that time of day, being 114 feet long: the centre, occupied by the bark stove, is 60 feet long, 20 feet wide, and 20 feet high, exclusive of the tan-pit; while the two ends formed dry stoves, each 20 feet long, 18 feet wide, and of the same height as the middle part.

1

STRELITZIA.

In 1761 the noble Orangery was erected also by Sir William Chambers. It measures 145 feet in length, its width 30 feet, and its height 25 feet. In the same year was added the very elegant Temple of the Sun, as it is called, of the Corinthian order, and some young trees were planted near, which are now grown to be among the most beautiful in the garden, particularly an *Oriental Plane* and a *Turkey Oak*. Such had been the increase of plants, that, in the year 1788, a greenhouse was built for Cape plants, 110 feet long (which still remains); and another for the vegetable productions of New Holland, nearly the same size, was added in 1792. (This has been much improved under the name of the "Australian House.")

A catalogue of the plants in the exotic garden of Kew was published by Dr. Hill in 1768, and a second edition the following year.

* The name was given by Sir Joseph Banks and Mr. Aiton, in compliment to the consort of George III. as princess of the house of Mecklenberg Strelitz. It is a plant worthy to bear so distinguished an appellation, and noble specimens of it may usually be seen in flower in one or other of the stoves during the winter months, especially that species on which the genus was founded, *Strelitzia Regina*, figured at Tab. 119. of the *Botanical Magazine*, and which has been justly described as among the most brilliantly coloured flowers in nature. The *Strelitzia augusta* is a far more stately plant of the genus, with larger, but very differently coloured, petals. By the marriage of Her Royal Highness the Princess Augusta of Cambridge with the hereditary Grand Duke of Mecklenberg Strelitz, this auspicious name is yet preserved in the royal family; and the amiable Princess who now bears it has evinced (we have ample opportunities of knowing) a no less lively interest in the improvements carrying on at Kew than did her royal ancestor in those to which we are alluding.

A far more elaborate and important work appeared in 3 vols. 8vo., accompanied by some admirable plates, the *Hortus Kewensis* of William Aiton, in 1789, giving an account of the several foreign plants which had been introduced into the English gardens at different times, amounting to 5,600 in number; and so much was it esteemed that the whole impression was sold off within two years. Mr. Aiton did not long survive this publication, for he died in 1793, in the sixty-third year of his age, and lies buried in the churchyard at Kew, near the graves of his distinguished friends, Zoffany, Meyer, and Gainsborough. He was succeeded by his son, W. Townsend Aiton, Esq., who was no less esteemed by King George III. than his father had been, and who, besides conducting the botanical department, and taking charge of the extensive pleasure grounds, was also employed in the improvement of the other royal gardens, in all which he displayed great skill and judgment, and an intimate acquaintance with his profession.

The Voyage of Captain Cook and Sir Joseph Banks round the world, those of Captain Flinders and Mr. Robert Brown (*Botanicorum Princeps*) and of Mr. Allan Cunningham to Australia; the expeditions of Bowie and Masson respectively to Brazil and the Cape of Good Hope—all these enriched the gardens of Kew with the vegetable productions of the southern hemisphere, to an extent unparalleled before or since: besides which, other collectors were employed abroad during a long period of years in various countries; and the produce of their researches was deposited at Kew. On various occasions, especially during the life of King George III., other houses, stoves, and pits were erected, as occasion required; but it must be confessed that, on the demise of that revered monarch and of Sir Joseph Banks, whom his Majesty so much delighted to honour, and who died shortly after the king, the establishment languished and suffered from want of royal and scientific encouragement. During the reigns of George IV. and William IV., with the exception of a few plants being transmitted by occasionally employed collectors, and one hothouse being erected by the last-mentioned sovereign (and it is but right to add that this conservatory is eminently handsome and ornamental), the Botanic Garden retrograded rather than flourished; and matters must have been much worse, but for the truly parental affection cherished towards it by Mr. Aiton, and the able exertions of his foreman (now the curator), Mr. John Smith. Throughout the country an opinion existed, which soon began to be loudly expressed, that either the Gardens should be entirely abolished or placed upon a very different footing, and rendered available, as a great scientific establishment, for the advantage of the public.

Government was, happily, ready to respond to this latter feeling;

and in 1838, the Lords of her Majesty's Treasury appointed a committee to inquire into the management, condition, &c. of the Royal Botanic Gardens. The result was, that in May, 1840, a return was made to the House of Commons, in the shape of a report by Dr. Lindley, who, at the desire of the committee, had surveyed the Gardens, in conjunction with two well-known practical gardeners.

Strangers, or persons not well acquainted with the vicinity of Kew, often entertain very incorrect notions of this establishment; nor can such be wondered at, seeing for how long a time it was the private garden of the royal family, and taking also into account its extensive and highly varied nature. It may be interesting, especially as exhibiting most forcibly the change that has since taken place, to describe in few words the extent and condition of the grounds at the time of this investigation, namely, in 1840. They then consisted of,—

1. *The Grounds immediately about the existing Palace of Kew,* which were of small circuit, lying near the river, and consisting mainly of the site of the great edifice or Palace, begun by Mr. Wyatt in the reign of his Majesty King George III., and soon afterwards pulled down. The boundary is the river on the north side, the Pleasure Grounds on the south and west, and the Botanic Garden on the east.

2. *The Botanic Garden proper,* which contained at the time in question about eleven acres, or thereabouts, of very irregular outline, bounded on the north partly by the gardens of the residences, mainly Crown property, which stand on the south side of Kew Green, in part by the Green itself, from which it was separated by a handsome railing, and in part by the gardens of His Majesty the King of Hanover; westward, by the grounds of the palace above-mentioned; eastward, by what were then the Royal Kitchen and Forcing Gardens; and south by the Pleasure Ground.

3. *The Royal Kitchen and Forcing Gardens,* situated between the Botanic Garden and the Richmond road, comprising about fourteen acres. (This portion is recently added to the Botanic Garden.)

4. *The Pleasure Ground,* comprising 170 acres of wood and lawn, lying to the south of the Botanic Garden, and bounded by the Richmond road and the river. For some years this extensive and beautiful area has been thrown open twice a week during the summer: the public are admitted at three different entrances, and it is very much frequented.

5. South of this, and stretching between the Richmond road and the Thames, almost into the lower part of the town, lies *Richmond Old Park,* or the *Old Deer Park,* as it is sometimes called; a noble

extent of pasture, comprising about 400 acres, interspersed with many fine trees, and distinguished by the observatory erected by George III., now liberally granted to the use of the British Association, and where that scientific body is carrying on an interesting series of experiments on terrestrial magnetism.

The report of Dr. Lindley, mentioned above, has reference only to the second of these divisions, namely, the *Royal Botanic Gardens*, which are stated to "include many fine exotic trees and shrubs, a small collection of herbaceous plants, and numerous specimens of grasses." Ten different stoves and greenhouses then existed, most of which have been either condemned and pulled down as unworthy of the Gardens, or so greatly altered as to be no longer recognisable under Dr. Lindley's description. He stated them, and correctly, to be "crowded together without plan or arrangement, all heated by separate fires, producing a quantity of soot and liable to many inconveniences." They, however, even then, "contained a great variety of rare and valuable tropical plants in good preservation." The orangery, situated in the Pleasure Grounds, and the conservatory, or "architectural greenhouse" already mentioned, and erected by King William IV., are not included in the ten stoves and houses which Dr. Lindley condemns.

It resulted from this investigation, that the whole of the Gardens, Pleasure Grounds, and Park, was transferred to the department of the Commissioners of Her Majesty's Woods and Forests. Mr. Aiton, on the eve of the fiftieth anniversary of his holding office, retired from the charge of the Botanic Garden; and the present Director received instructions from the Board to enter upon his important duties in the spring of the year 1841, and to prepare, as speedily as possible, a Report of those alterations which were deemed essential for rendering the Gardens useful to the public at home and to our colonies abroad. Many useful suggestions on these heads were offered by Dr. Lindley in the before-mentioned document, especially the following:—"A national garden ought to be the centre, round which all minor establishments of the same nature should be arranged: they should be all under the control of the chief of that garden, acting in concert with him, and through him with one another, reporting constantly their proceedings, explaining their wants, receiving their supplies, and aiding the mother country in every thing that is useful in the vegetable kingdom. Medicine, commerce, agriculture, horticulture, and many valuable branches of manufacture, would derive much benefit from the adoption of such a system. From a garden of this kind, government would be able to obtain authentic and official information on points connected with the founding of new colonies: it would afford the plants there required, without its

being necessary, as now, to apply to the officers of private establishments for advice and assistance."

Other alterations of a highly important character could not fail in suggesting themselves to the director, on his becoming intimately acquainted with the minutiæ of the establishment, many of which it were tedious to narrate in this place.

One of the first was to open the Botanic Gardens for the admittance of the public on every week-day, from the hours of one to six o'clock, and even to admit any respectable individuals, who, coming from a distance, in ignorance of this regulation, should arrive at an earlier hour. Not only the grounds but the plant-houses are open to visitors; the number of whom, it is needless to say, is very considerable; yet, what is peculiarly gratifying, and contrary to the anticipation of many persons, this privilege has been rarely abused. In the few cases of an opposite line of conduct, the consequent detection (which must be expected where trustworthy men are necessarily dispersed through the gardens at their various occupations) has proved its own punishment.

Next to the facility and consequent pleasure and instruction to the public, the enlargement of the ground was an important object. The limit of the Garden was not, indeed, exactly defined where it met the precincts of the residence of his Majesty the King of Hanover; but permission was soon obtained to include within the Botanic Garden all the ground immediately about the Conservatory and Orangery, which greatly enhanced the beauty of the view, and added between three and four acres. This augmentation to the limits, however, was, from its small extent, rather to be considered ornamental than useful. Application was made by the Chief Commissioner of Woods and Forests to the Queen, for a grant of land from the contiguous Pleasure Ground, which might afford the means of forming a *Pinetum* (or a collection of plants of the Pine tribe) suited to such an establishment, and also of erecting a palm stove, or tropical house, equally worthy of the place and the nation. Her Majesty was graciously pleased to assent to this request, and a portion of the Pleasure Ground, comprising about forty-seven acres and including a piece of water, was surveyed, and permitted to be enclosed within a light wire fence, which still gives to view the rest of the Pleasure Ground, and adds to the beauty of the Botanic Garden, which, thus augmented, contained sixty acres.

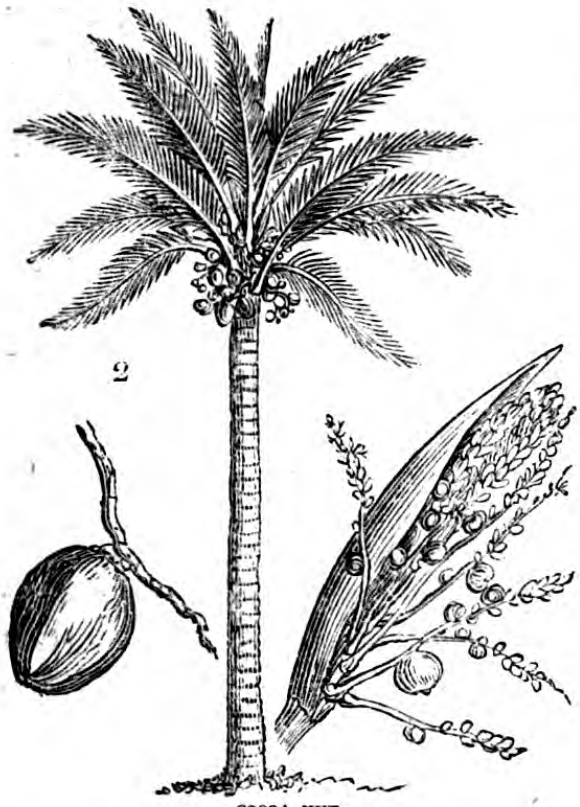
While we are preparing this for the press, viz. in the winter of 1846-7, orders have been received for abolishing the Royal Kitchen and Forcing Gardens of Kew and adding them to the Botanic Ground, which has already been partially done, thus adding fifteen more acres to the scientific portion of the grounds.

But changes now come to be noticed that have been effected within the precincts of the old ground, or *original Botanic Garden;* for, in the same ratio that hardy plants required more space, so did the tender plants need increased accommodation; and plans were accordingly given in for those improvements, by which such a transformation is effected in the aspect of the place, that persons who have not visited Kew Gardens for a few years can scarcely recognise the localities. We shall describe, with all possible brevity, the present condition of the Royal Botanic Gardens, and then proceed to indicate the objects most worth the attention of a stranger, both in the open ground and the several plant-houses.

On approaching the Botanic Garden by the new entrance at the head of Kew Green, the visitor cannot fail to be struck with the beauty of the richly ornamented gateway, erected in 1845-6, from a design of Decimus Burton, Esq. Passing through it, the main walk takes a westerly course, and, besides catching a distant view of Kew Palace, attention will be attracted on the left by the old Arboretum, a collection of hardy exotic trees and shrubs, and on the right by his Majesty the King of Hanover's grounds, only separated by a neat wire fence, and the *Stove*,—

No. 1. A handsome stone building, of classical design, commonly called the CONSERVATORY, or sometimes the ARCHITECTURAL GREENHOUSE, but which is now filled with an excellent collection of tender plants, more especially of *Palms* (the Princes of the vegetable Kingdom), and other monocotyledonous tribes. This fine structure was removed hither, by order of King William IV., from Buckingham Palace in 1836: it is one of three* that had been erected in the grounds there, and is heated by innumerable coils of small pipes, fixed by Mr. Perkins. Among the *Palms*, which are numerous in the collection, though many are young, of recent introduction, and the larger ones are cramped in comparatively small tubs, to keep them more within certain limits, till the Palm Stove, hereafter to be noticed, shall be completed, we may particularly mention the *Date Palm* (*Phœnix dactylifera*), producing the Dates of commerce and of Scripture, and which, together with the *Dwarf Palm* (*Chamærops humilis*), is the most northern of all Palms (the majority being tropical), extending even into the south of Europe; the *Palmyra Palm* (*Borassus flabelliformis*); the *Guinea Oil Palm* (*Elais Guineensis*), which produces the African *Palm Oil;* the well-known *Cocoa Nut* (*Cocos nucifera*) (fig. 2.), of which the various uses, of fruit,

* The second is still a Conservatory at Buckingham Palace, and the third has been converted into the Royal Chapel.



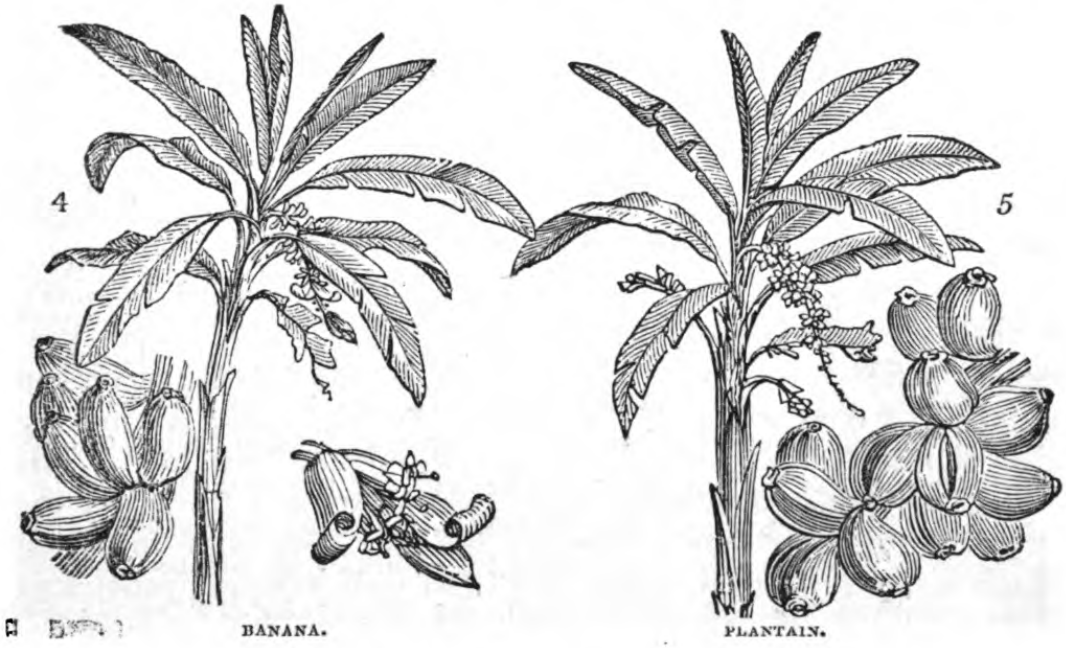
COCOA NUT.

milk, wood, fibre, &c., are said to be as numerous as the days in the year; *Cocos coronata*, distinguished by its height and gracefulness, perhaps the most rapid growing palm in cultivation; the *Cabbage Palm* (*Oreodoxa oleracea*), which yields the esculent substance, so called, from the crown of the stem; *Caryota urens*, remarkable for the singular form of the leaflets of its pinnated leaves, which are obliquely wedge-shaped and much cut at the end: *Seaforthia elegans* and *Livistonia australis* are from New Holland, and *L. Chinensis* from the Chinese dominions; *Zalacca Assamica* of Dr. Wallich, of which the singularly spiny stem (the spines being digitate, or united together like the fingers of the hand) and luxuriant foliage can hardly fail to attract the attention of the passer-by; its leaves are, when full grown, of vast length, and pinnated like the vane of a feather, so long, indeed, that they seem to need support, and nature has provided them with the means, for the rachis, or main stalk of the leaf, at the end, extends into a lengthened slender tail, and the leaflets become deflexed hooks, by means of which, while running up among the stems and branches of other trees, the foliage is supported. Of Arecas are the well-known *Areca Catechu* and *Areca sapida*; *Arenga saccharifera*: *Phœnix sylvestris* is the *Wild Date* of India, which yields Palm Wine and Sugar; and, lastly, we shall, of the Palms, only mention the highly interesting *Ivory Palm Nut* (*Phytelephas macrocarpa*), an inhabitant of the Magdalena, New Grenada, of which the seeds constitute a substance so exactly like ivory, that they have become a

CEROXYLON ANDICOLA.

considerable article of commerce, and are used for turning a vast variety of trinkets and other articles resembling ivory; and the *Wax Palm* (*Ceroxylon andicola*) (fig. 3.), of the Andes of New Grenada, discovered by Humboldt, of which the stem is covered with a waxy substance having the same properties as bees' wax.

Some or other of the *Bananas* or *Plantains* may always be seen in this house, in a more or less advanced state of flower or fruit through the whole year, their ample and delicately green foliage overtopping most of the other plants. The clusters of blossoms form a long pendent spike. The inflorescence is of two kinds, those flowers which are situated at the base of the spike being destined to become the cucumber-like fruit, while the others form a slender tail at the extremity, and are covered with concave purple scales, which gradually drop off, and permit the escape of the pollen or fertilizing dust, which, being conveyed by the wind or by insects to the other blossoms, renders them perfect. The *Banana* (fig. 4.) only differs from the *Plantain* (fig. 5.) in the form of the fruit: they are, indeed,



BANANA. PLANTAIN.

considered by Humboldt as mere varieties. Both are of inestimable value to the inhabitants of tropical countries in the Old and New World. A single cluster of fruit often weighs seventy or eighty pounds, even when produced in the stoves of this country. Besides being eaten fresh in their native land, Bananas are dried as figs, or reduced to a kind of flour or meal by rasping. One kind, the *Plantain*, is called *Musa Paradisiaca;* the *Banana*, *Musa sapientum*. The tender and succulent stems are eaten by various domestic animals: the fibre makes excellent cordage and clothing; and the leaves serve for covering houses.

The tall naked-stemmed plants in this stove, whose crown of aloe-like leaves reaches almost to the glass of the roof, are the *Gum Dragon Tree* (*Dracæna Draco*) (fig. 6.), which yields an astringent resin (*Dragon's Blood*), formerly used in medicine, and now chiefly employed by painters as a red varnish. Lofty as these specimens are, they are pigmies compared with the stature the tree attains in its native island, Teneriffe. "The gigantic tree of Orotava," says the enlightened traveller Humboldt, "measures forty-five feet in circumference, a little above the ground." Tradition relates that this particular *Dracæna* was venerated by the Guanchos (the aborigines of Teneriffe), as the *Elm of Ephesus* was by the Greeks, and that in A. D. 1400 it was as large and hollow as it is now. Its growth being extremely slow, we may be sure the *Orotava Tree* is of incalculable age: doubtless it and the *Baobab* are the oldest inhabitants of our planet.

6

DRAGONS' BLOOD TREE.

Among the *Bromeliaceæ* *, or *Pine-Apple Tribe* (called *Ananas*), more than one species may be observed, whose leaves seem pre-eminently adapted to the purpose which the plant serves in Mexico, and the warm parts of South America, that of making fences. Each leaf, long and sword-shaped, may be seen to have its edges armed with exceedingly sharp-hooked spines; those on the upper half of the leaf curve towards the intruder, as if to forbid approach in that direction; while, if he has unfortunately penetrated some way, in spite of these innumerable and formidable opponents, the downward curves (towards the centre of the plant) of the remainder of the spines will prevent his egress, except at the sacrifice of the skin and flesh, by these strong hooks. The kind which yields the well-known esculent fruit is the *Bromelia Ananas*;

> "Its luscious fruit *Anana* rears,
> Amid a coronet of spears."

The *Papyrus of the Ancients* (fig. 7.), is easily recognisable here by its tall reed-like triangular stem, arising from the water of the tank. It is crowned with the copious clustered flower-stalks.

* While writing the above, the *Bromeliaceæ* have been removed to House No. 20.

THE PAPYRUS.

The stoutest individuals were selected by the ancients, and from the white pith which fills the interior their paper was prepared in the following manner. The epidermis being removed, the spongy part was cut into thin slices, which were steeped in the waters of the Nile, or in water slightly imbued with gum; after which, two layers were placed one above another, carefully arranged in contrary directions, that is, alternately breadthwise and lengthwise, many layers being required to make one sheet of paper. Then the article was dried and subjected to strong pressure, and finally smoothed and brought to a surface, fit for receiving writing, by being rubbed with a tooth or piece of polished ivory. On this kind of paper it is said that most of the old manuscripts are inscribed, especially those which have been brought to light by the excavations at Herculaneum and Pompeii.

The *Sugar Cane* (fig. 8.), which happily can be no longer denounced, with regard to this country, as

> "The cane whose luscious juice supplies
> Europe's blood-purchased luxuries,"

distinguishes itself by its very large yet grassy character, long and pale green foliage, and closely jointed stout stem, which latter, contrary to the character of most grasses, is solid (not hollow), and contains the saccharine juice, which is extracted by pressure between heavy rolling cylinders. The waste stems, thus squeezed dry, are generally used for fuel to boil the juice, and are found to be so impregnated with a siliceous or flinty substance, that masses of glassy slag are, in the course of a short time, deposited in the furnaces and require to be removed.

THE SUGAR CANE.

The *Bamboo* (fig. 9.), when fully grown, is infinitely more gigantic than its ally the Sugar Cane, attaining during one season in its native wilds a height exceeding 100 feet: its immense hollow stalks are applied

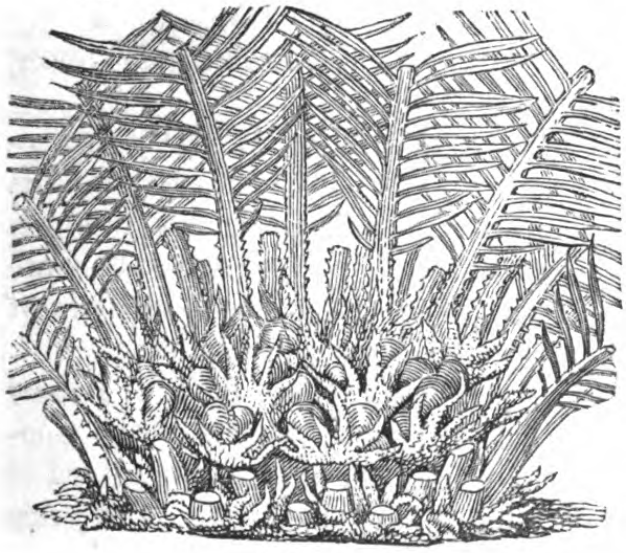
9

THE BAMBOO.

to an infinity of domestic and useful purposes.

The *Zamias, Cycases,* and *Encephalartus,* at the west end of this stove, are worthy of attention. They are inhabitants of hot countries, chiefly in the southern hemisphere; and assuredly, within our days at least, nothing like them has ever been seen growing in temperate climates; but similar plants are found fossilised in the oolite formation of England, as at Portland Island, proving that in former ages these strange forms were denizens of this country. Little though they resemble the Pine or Fir tribe in general aspect, a considerable affinity exists between them as to internal structure, and still more in regard to their inflorescence, the male flowers being produced in cones, sometimes three to four feet long. Their pinnated leaves are peculiarly harsh and rigid. The *Cycases* (fig. 10.) yield a kind of *Sago* in the East Indies.

10



CYCAS REVOLUTA.

The *Agaves* have an aloe-like character, and, coming from the warm parts of the New World, they are commonly called *American Aloes* (*true Aloes* are natives of South Africa). The *Agave Americana* is one of them, and is familiar to most frequenters of gardens: being less tender in its constitution than some others, it is kept with us in a cooler house than that now under review. It blossoms, not, as the story goes, only once in a hundred years, but more frequently than other kinds, and throws up a flower-stem twenty to twenty-four feet high. The plant-house we are now surveying contains one very large unknown species of *Agave,* with huge sword-shaped, thick and fleshy leaves (marked "*Agave, Mexico*"): each of these leaves averages twelve pounds in weight. Two ancient specimens of another and not smaller sort, but which, we regret to say, can now only be seen in an infant state, blossomed here so late as 1844, and attracted much attention: we mean the *Agave vivipara* of Linnæus, *Four-*

*croya gigantea** of modern authors. The two plants in question had been in the Royal Gardens, first of Hampton Court and then of Kew, probably from the earliest introduction of the species into Europe, upwards of a century ago (in 1731). On one and the same day, in the summer of 1844, each was seen to produce a flowering stem, which resembled a gigantic head of asparagus, and grew at first at the astonishing rate of two feet in the twenty-four hours. So precisely did the twin plants keep pace with each other, that at the very time it was found necessary to make an aperture in the glass roof of the house for the emission of one panicle (twenty-six feet from the ground), a similar release was needed by the other. The rate of growth then most sensibly diminished: still, in two months, the flower-stalks had attained a height of thirty-six feet! The flowers were innumerable on the great panicles: they produced no seed, but were succeeded by thousands of young plants, springing from the topmost branches (whence the Linnæan name of *vivipara*); and these continued growing while attached to the stem for a long while after the death of the parent plants, both of which perished, apparently from exhaustion. Our collection now, therefore, contains only young individuals of this particular *Agave*.

The *Calathea* (formerly called *Maranta*) *zebrina* is easily recognised by its large beautifully striped copious foliage: each leaf is banded with shades of velvetty green of different hues, and lined, as it were, with purple. It is only by putting a little on one side some of the leaves, that the clusters of purple flowers can be seen.

PAPAW.

A good plant of the *Papaw* (fig. 11.) and another of the *Chocolate Tree* are generally placed in this Tropical House. The juice of the former is employed in the East and West Indies for rendering tough meat tender; and, having this property, it is, of course, much prized by good housewives in climates where it is necessary to cook all animal food on the day when it is killed. From the seeds of the Chocolate Tree, as may be inferred from its name, is produced that "drink of the Gods" called (*Theobroma*); and also *Cocoa* (a very different thing from the Cocoa Nut Palm, and a corruption of the Indian

* This name was given in compliment to the French chemist, *Fourcroy*.

CHOCOLATE TREE.

name Cacao, hence the botanical name, *Theobroma Cacao*) (fig. 12.).

Of *Euphorbias* and *Cactuses* only a few of the latter kinds are placed in this house, which are too large to be accommodated in the stoves more peculiarly devoted to succulent plants. *Euphorbia splendens* and *E. Bojeri* are conspicuous for their scarlet flowers and thorny stems, *E. grandidens* for its lofty stout trunk, ten or twelve feet high, and sending out spreading whorled branches like a candelabrum. The slightest incision in the bark causes a great quantity of milky juice to flow, which, being of a highly acrid and venomous nature, is employed by the native Africans for poisoning their arrows and assagays. The juice of other allied species is used in various countries for intoxicating fish: a destructive mode of procuring the finny tribe practised in Ireland by poachers in the Shannon. The efficacy of *E. helioscopia* (*Wart-wort*) in removing warts is well known in England.

Among the Dicotyledonous plants in this house may be noticed

BREAD FRUIT TREE.

MANGO TREE.

many climbers, especially of the genus *Convolvulus*, and some singular *Aristolochias*, trained in pots upon cylindrical or balloon trellises: the famous *Teak Tree* of India (*Tectona grandis*), extensively used in ship-building: the *Bread Fruit* (fig. 13.) (*Artocarpus incisa*),—

" That tree which in unfailing stores,
The staff of life spontaneous pours,
And to those southern islands yields
The produce of our labour'd fields:"—

the *Mango Tree* (fig. 14.) (*Mangifera Indica*), the *Silk Cotton Tree* (*Bombax pentandra*), and the *Litchi* (*Euphoria Litchi*).

We are supposed to have entered this house by the eastern door: on quitting it at the west end, the walk leads towards the Palace, with a vista in front; of which the view extends past the front of the Palace to the grounds of Syon House, the mansion of his Grace the Duke of Northumberland. The main alley soon takes a southerly direction, a little before coming to the cloaking-room; where ladies will always find a place of rest or shelter in wet weather, and where their umbrellas or cloaks can be deposited by those who contemplate a long walk, under the care of an obliging female attendant. Here, on turning to the left, the visitor enters upon the grand and favourite promenade of the Garden: at the point where the principal entrance meets it, there may generally be seen placed, during the summer months, the two noble *Norfolk Island Pines* (*Araucaria excelsa*), remarkable for their beautifully drooping and graceful branches, which almost resemble large ostrich plumes. Proceeding, the attention is drawn on the left by a large edifice facing the south, which we shall call by its original name,

No. 2., the ORANGERY, which is used to shelter, in the winter, numerous large and half-hardy trees and shrubs, especially tender *Pines*, many of which are of great rarity and value. The house was erected by Sir William Chambers in 1761 *, and it bears on the front, in two shields, the initials of Augusta, Princess Dowager of Wales, who, as already mentioned, took a great interest in the Gardens of Kew, and to whom Sir William Chambers dedicated, in 1763, his "Designs of Her Royal Highness's magnificent Villa at Kew." The two ends of this edifice were altered and furnished with large windows in 1842, and they bear the royal arms and that date accordingly. The building is 142 feet long, 30 feet wide, and 25 feet high. In the back shed are two furnaces for heating flues laid under the pavement. It was originally destined for and filled with orange trees, till 1841, when they were removed to Kensington Palace (with the exception of a few), and their places supplied by a very miscellaneous collection of trees and shrubs, which had become too large for the other greenhouses. The tenderer *Pines* (*Coniferæ*) constitute, perhaps, the most prominent feature in this house, when it has received its inmates for the autumn and winter. Here, at

* Not 1751, as incorrectly inscribed on the shields on the façade.

that season, may be seen the noblest specimens in Europe of the *Norfolk Island Pine*, already mentioned as standing abroad during summer, the *Moreton Bay Pine* (*Araucaria Cunninghami*), the *Brazilian Pine* (*A. Braziliana*), the *Bidwill Pine*, named after its discoverer, Mr. Bidwill (the cones of this species are as large as a child's head), the *China broad-leaved Pine* (fig. 15.) (*Cunninghamia lanceolata*), the graceful *long-leaved Pine* from the Himalaya Mountains, and several others, equally rare, from Mexico and elsewhere, all of which need protection during the winter. In this house is a stately *Rhododendron arboreum*, from the mountains of Ceylon, and equally finely grown *Camellias*. The *Gum Trees* of Australia (*Eucalyptus*) are here, and easily recognisable: one of them, in particular, is distinguished by a summit reaching to the ceiling, and therefore unfortunately, but necessarily, despoiled of its crown. This species is probably the rapidly growing *Gum Tree* described by Mr. Backhouse, when he says, " It is the most gigantic tree of Van Diemen's Land, and there called *Stringy Bark*. Some of the specimens exceed 200 feet, rising almost to the height of the Monument in London before branching: their trunks also will bear comparison with that stately column both for circumference and straightness. One of them was found to measure $55\frac{1}{2}$ feet round its trunk at 5 feet from the ground; its height was computed at 250 feet, and its circumference was 70 feet at the base! My companions spoke to one another and called to me when on the opposite side of the tree, and their voices sounded so distant that I concluded they had inadvertently quitted me in search of some other object: I accordingly called to them, and they in answer remarked the distant sound of my voice, and inquired if I possibly were behind the tree. At the time when the road was forming through the forest, a man, who had only about 200 yards to go from one company of people to another, lost his way: he shouted and was repeatedly answered; but getting farther astray among the prodigious trunks, his voice became inaudible and he perished." " A prostrate tree of this kind was measured 213 feet long: we ascended the trunk on an inclined plane formed by one of its huge limbs, and walked, four of us abreast, with ease upon the trunk. In its fall it had hurled down another, 168 feet long, which had brought up with its roots a wall of earth 20 feet across. The prostrate forms of these sylvan giants, in various stages of decay, added greatly to the interest of the scenery. Some of them present singular ruins of broken limbs and shattered

15

CUNNINGHAMIA LANCEOLATA.

boughs; while others, that seem to have been in a state of decomposition for ages, have become overgrown with various ferns and shrubs." (See Backhouse's Australian Travels.)

In this house may be seen the *Camphor Tree* (fig. 16.) of Japan (*Laurus Camphora*); but so miscellaneous is the collection here, and so variable, in consequence of the plants and shrubs being moved in summer to different parts of the lawns and walks, that it is unnecessary to enumerate any more of the species.

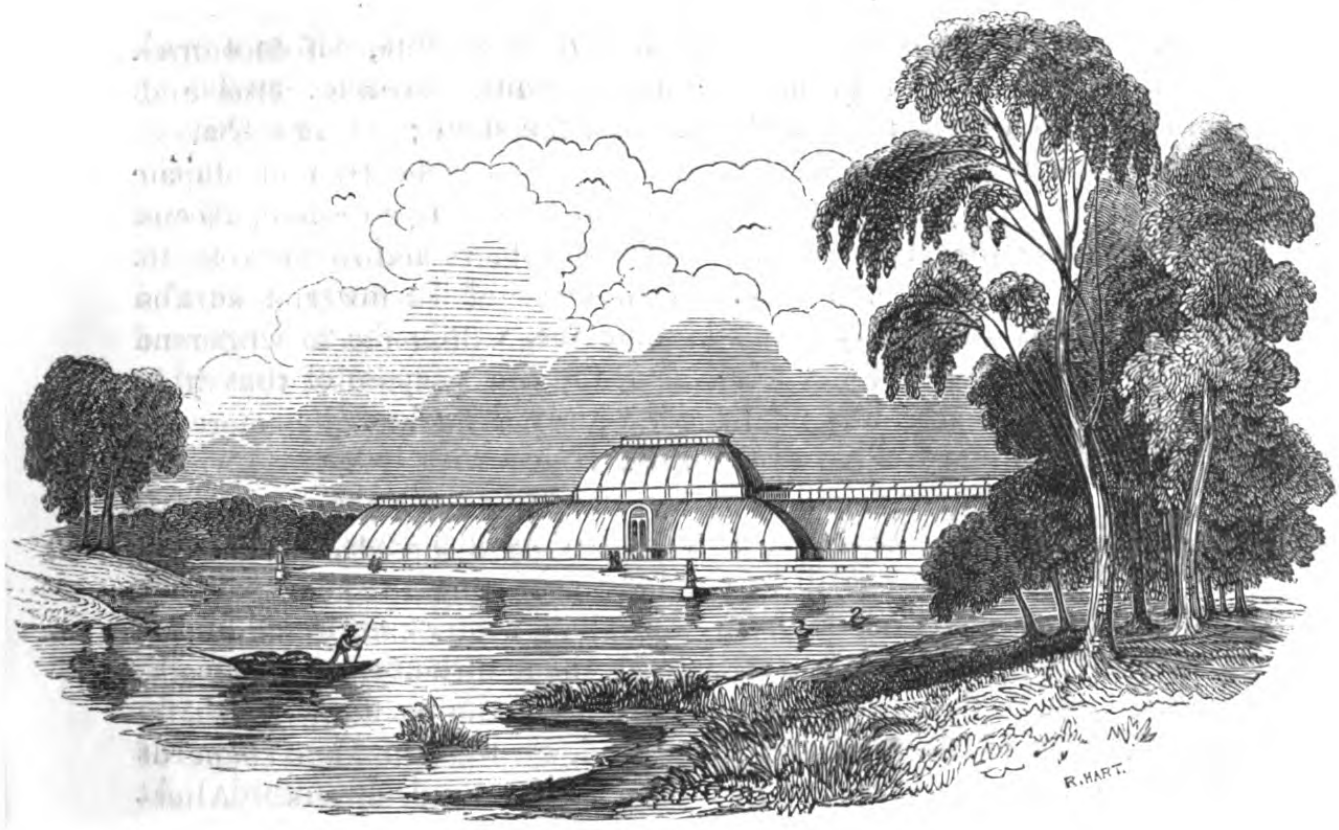
16

CAMPHOR TREE.

The visitor, on quitting the Orangery, will probably be disposed to return to the main path leading to the new Palm house; and he can hardly fail to be struck with the beauty of this noble walk, and with the judgment shown by Mr. Nesfield in the disposition and shape of the beds of shrubs and flowers. Alternating with the large beds, are planted two lines of *Deodars*, designed eventually to form an avenue of this stately and graceful tree. Secondary lines are composed of Junipers, Cypresses, and other allied plants. The Deodar line is in one place interrupted by a beautiful *Turkey Oak*, too fine a specimen to be sacrificed, even for the sake of completing the avenue: the blank on the other (west) side of the walk will probably be occupied by a stone-edged tank, serviceable for watering the numerous flower-beds that decorate this promenade. Further westward on the lawn may be seen a fine group of *Elms*, known by the name of "the Seven Sisters," so called in allusion to the daughters of His Majesty George III.

The walk now terminates on the north by a marshy piece of ground and water, fringed with weeping willows and other trees: a spot which is to be made more ornamental; and then the great alley will be carried on to, and beyond, the new Palm House. A piece of rough ground intervenes at this time (May, 1847), between the present indifferent piece of water and the yet unfinished

Palm Stove (fig. 17.), a *plant-house*, which, when completed, will be the glory of these Gardens. It is built from the design of Decimus Burton, Esq.; and the iron work is executed by Mr. Turner, of the Hammersmith Works, Dublin, the brick and stone work by Messrs. Grissell and Peto, and the heating by Messrs. Burbridge and Healy: all working in concert with the director and



PALM STOVE.

curator of the establishment, who are responsible for the successful cultivation of the plants. As the public will soon have the opportunity of inspecting this noble stove in a finished state, we shall content ourselves at this time with remarking, that already the shell or external frame is completed, consisting of a centre and two wings, occupying an area 362 feet in length; the centre is 100 feet wide and 66 feet in height to the summit of the lanthorn, the wings 50 feet wide and 30 feet high. The whole is of iron, stone, brick, and sheet glass, the latter slightly tinged with green at the suggestion of R. Hunt, Esq., of the Geological Survey, in order to temper the too powerful rays of light. The ribs are inserted in enormous blocks of Cornish granite, placed on the most solid concrete. The central portion of the building (138 feet long and 100 feet wide) has a substantial gallery all round at the height of 30 feet from the floor, ascended by a light spiral staircase, so as to give the opportunity of seeing the plants from above as well as below, by bringing the spectator on a level with the summits of many of the loftiest, and also the means of watering the plants from above. The whole interior is heated by hot-water pipes and tanks*, judiciously distributed above and beneath the level of the floor. To avoid the unsight-

* The hot-water pipes, 4½ inches in diameter, are estimated to extend 24,000 feet in length, and the hot-water tanks 1000 feet.

liness of a chimney attached to, or even placed near, so noble a structure, the smoke is conveyed by an underground flue, within a brick tunnel six feet high (from the underground furnaces, twelve in number), to a distance of 479 feet from the stove; where a shaft or ornamental tower (a smoke-consumer), with a large reservoir on the top for the supply of water to the stove, is about to be erected, 60 feet in height, so situated and of such a form as to be an architectural object when seen from the main walk. At the base of the tower, concealed by shrubs, is the coal-yard; and here too, within the underground tunnel above alluded to, is a railroad, for the purpose of conveying coals to the furnaces, and for bringing away the ashes.

The immediate vicinity of the Palm House with its terrace will be laid out in a manner suited to such a structure. To the westward is a considerable area, or lawn, of some twenty-five acres, destined to form a *Pinetum*, where will be planted all the *coniferous plants* which bear the open air; while from the great western entrance of the Palm Stove three vistas will radiate at equal distances, commanding views through the pleasure grounds; one, inclining to the south, in the direction of the Pagoda; the second, or western vista, towards the river and woods of Syon; and the third towards Brentford. At the moment of writing no further walks are carried out in this direction; but during the approaching summer, so rapidly are the improvements going on, there will be no difficulty in rounding the piece of water, even before its enlargement, and gaining the walk on the east side of it, where the water enters the pond from the engine-premises. Here, between the Temple (of Æolus) hill and the water, have been planted two young trees of great rarity and interest, and which both withstood the severe winter of 1846 and 1847: one is from California, the rare and, when full grown, lofty *Taxodium sempervirens;* the other, the still more rare *Evergreen Beech* (*Fagus betuloides*) of Tierra del Fuego, discovered by Sir Joseph Banks in Captain Cook's first voyage, and recently sent to the Royal Gardens by Captain Sir James C. Ross, during his Antarctic voyage. If the former is remarkable for its great height and sombreness, the latter is no less so for its beauty and small evergreen foliage, scarcely larger than that of the broad-leaved myrtle, and for its being the most southern tree in the world; indeed, there exists but little vegetation of any kind beyond it. Its size and form, however, in its native region, depend on the place of growth. In sheltered valleys it attains a considerable size, with a trunk seven feet in diameter, so that Captain Philip King made large boats from one trunk; while on the exposed heights of Hermite Island the trees are so dwarfish and stunted, and the branches so densely compacted, that the traveller is able literally to walk upon the tops of them!

From this spot the visitor is recommended to direct his steps north, and he will soon catch sight of a portion of ground, lately the Kitchen Garden, but now forming a part of the Botanic Ground, recently laid out for the *hardy herbaceous collection*, and containing a building now fitting up as a *museum*, and several old-fashioned stoves and greenhouses, hereafter to be briefly noticed. This ground can be passed through, and the principal cluster of plant-houses (Nos. 10. 11, &c.) approached; or if the visitor has not ample time at command, he may pass by the herbaceous ground, leaving it on the right, and taking the next turn to the right he will come to a plot of ground, very interesting to the lover of native plants, constituting the *British Garden*, wholly occupied by indigenous species, named and arranged according to the natural orders. Just beyond is a group of low plant-houses; the first we come to is

18

CAPE HEATHS.

No. 3., *a small greenhouse*, in the winter generally occupied with *Cape Heaths* (fig. 18.), South Africa alone producing above 300 species, and a very mixed collection of other things, varying much too, according to the season of the year, the winter collection being removed into the open air in summer, and the summer plants being removed and replaced by others as the flowering season passes.

No. 4. is a low *double Propagating House* on an admirable construction, and containing a large and very varied and valuable collection of small plants, seedlings, cuttings, forced specimens, sickly ones, or such as have suffered from the effects of a long voyage. As the majority of these require peculiar care and attention, and are of little or no interest to the public generally, this house is, according to circumstances, open or (more frequently) kept locked. At its north-west angle is

No. 5., a small and recently erected low *Stove*, exhibiting a miscellaneous but a very choice selection of tropical plants. We can only specify a few; again warning our readers that those we do

mention may also be found in other houses, or may, even very soon after the name is penned on this page, according to circumstances, be removed to other houses. Here is the *Nutmeg* (fig. 19.) (*Myristica officinalis*), which yields both Nutmeg and Mace, spices, of which

19

NUTMEG.

20

CLOVE.

the consumption is so great, that, according to Stavorinus, of the former 250,000 lbs., and of the latter (Mace) 90,000 lbs., were sold annually in Europe alone: here, too, grows the *Clove* (fig. 20.) (*Caryophyllus aromaticus*), which valued spice is the flower-bud, in shape resembling a nail; whence the Spaniards, who discovered the tree, called it Clava, the French Clou, the English Clove.

21

PITCHER PLANT.

At the time we write may be found there the beautiful and rare Australian *Pitcher Plant* (fig. 21.) (*Cephalotus follicularis* of Brown), brought home from King George's Sound, and presented to the Royal Gardens, with many other rarities, by Captain Sir Everard Home, Bart.: the *Torenia Asiatica*, raised from seed imported from India by W. Strahan, Esq., of Twickenham; it is one of the most lovely of our recently introduced plants: the *Upas* or *Poison Tree of Java* (*Antiaris Toxicodendron*), to whose well-authenticated virulence it has been the pleasure of poets and

travellers to add many a horrifying imaginary incident*: the famous *Cow Tree*, or Palo de Vaca (*Galactodendron utile* of Humboldt), native of the Caraccas, abounding in a milky juice, which is drawn into gourds by tapping, and is given to children as we give them cow's milk; the *Xanthochymus pictorius* of Roxburgh, of which the fruits, which ripen with us, yield, on puncturing, the juice which concretes into one kind of *Gamboge*, the most powerful of drastic medicines, and affording the brightest and best known of colours; the rare *Napoleonea imperialis*, and the very beautiful *Gardenia Stanleyana* from Sierra Leone; the singular *Lace Bark Tree* (*Lagetta lintearia*) from Jamaica, whose layers of inner bark (there are as many as the portion of the tree yielding it is years old) resemble, without any artificial preparation, an exquisite lace; the *Mahogany Tree* (fig. 22.) (*Swietenia Mahogoni*), a native of Honduras and Jamaica, and other interesting objects.

22

MAHOGANY TREE.

Fronting No. 5. s

No. 6., a *low stove*, formerly the Orchideous House, now filled with a collection of different kinds; so heterogeneous, and so liable to be exchanged for others, that we hardly think it would convey valuable information to specify them: the more remarkable bear their names on the labels. I shall merely mention that *Sarracenias*, exotic *Pinguiculas*, *Droseras*, and *Dionæas* are generally seen in the proper season in this house. The former (*Sarracenias*, (fig. 23.) or *Side-saddle flowers*), so called from the curious form of the stigma, have tubular leaves containing a fluid, and inverted hairs at the mouth of the tube. Insects, in their native country especially, and not a few with us, are attracted by the fluid: the inverted hairs hasten the descent of the insect, and it falls into the fluid without chance of escape and perishes. The still more singular *Dionæa muscipula* (or *American fly-trap*) (fig. 24.), has, as its name implies, a veritable living

23

SARRACENIA.

* In addition to the injurious property of this plant, it is known to grow in low valleys of the island, rendered unwholesome by an excess of carbonic acid gas, which escapes from crevices in the ground. In this atmosphere man and beast who unwarily enter, and birds that attempt to fly over (for the gas is said to reach a height of eighteen feet from the ground), fall down dead, and the bottoms of such situations are often strewed with the carcases of various animals which have perished thus, and not from the effects of the Upas.

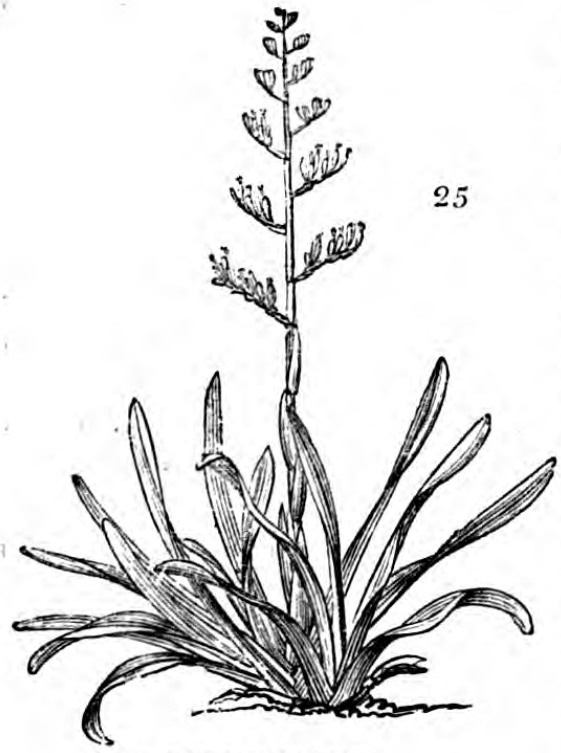
AMERICAN FLY-TRAP.

trap at the end of the leaves, consisting of two broad fleshy lobes, jointed in the middle, fringed with long spines, and with two or three hairs on the disk of the lobes. The moment an insect (or any extraneous body) touches the hairs on the disk, the two lobes close firmly, and press the luckless intruder to death: the struggles of the victim, indeed, only occasion the lobes to shut the more firmly, and its destruction is thereby hastened. The *Droseras*, or *Sundews*, both in our own and other countries, are insect-catchers, though by a different process from that of the plants now mentioned: the glutinous glands at the extremity of the beautiful, generally red, hairs of their leaves and leaf-stalks, detain their winged prey. If we leave this house by the west end, a gravel-path will soon conduct us into a cross walk, and we can turn to the right, which leads us to the main cluster of plant-houses; or it may be found more convenient to bear to the left, as it were towards the new Palm stove, indicated in the plan, and thus very soon entering another cross walk, hold on to the right, till, rounding a hill or mound of trees and shrubs (an ice-house), we direct our faces northward, having *Lawn* on each side. Here, on our left, is a noble specimen of a Japanese Tree, as large as an ordinary oak, late in summer loaded with its white clusters of papilionaceous flowers, the *Sophora Japonica*. On the right is a number of concentrically arranged borders with brick edgings, containing a considerable collection of *Exotic Grasses*. On the north side of this is a very large *Hop Hornbeam* (*Ostrya vulgaris*) grafted on the *common Hornbeam* (*Carpinus Betulus*); and, aged though this tree is, the place where the graft was effected is distinctly visible on the trunk. North of the Grass collection is a harsh rigid-looking *Pine*, which cannot fail to attract the attention of the visitor: it is the famous *Chili* or *Banksian Pine* (*Araucaria imbricata*), which was brought to England in the year 1792, by Mr. Menzies, the surgeon in Captain Vancouver's voyage. It is, perhaps, not generally known, that the seeds of this tree are eaten for dessert in Chili, as are those of the Stone Pine (*Pinus Pinea*) in Italy, and almonds with us. The commander of this voyage and some of his officers were dining with the governor of Chili, when a dish of these kernels was served. The surgeon and naturalist of the expedition, Mr. Menzies, requested permission to plant, instead of eating, his portion, which was accordingly granted; and five of the seeds having germinated on board ship, they were deposited in the Royal Gardens of Kew on the return of the

expedition, and were the first ever brought alive to Europe. The tree in question is one of them, and has already produced its remarkably large, almost globular, yet infertile cones. Though the tree is in perfect health, it does not assume that striking pyramidal form which distinguishes it on its native mountains; but a cutting taken from it and planted at Dropmore, the seat of Lady Grenville, a spot peculiarly favourable to the growth of the Pine tribe, is now become a much handsomer specimen than its parent, and grows in the manner peculiar to the species. Westward of the *Araucaria*, upon the same piece of lawn, and forming a striking contrast by its gracefulness, stands a splendid tree of the *Weeping Birch* of Scotland. From this spot we shall find it convenient to enter the Plant-house

No. 7. A *large greenhouse*, containing a miscellaneous collection of plants of temperate climates: a very great proportion, especially those at the eastern extremity, consists of plants, chiefly trees and shrubs, from New Zealand. Here are unquestionably the finest specimens in Europe of the famous *New Zealand* or *Cowdie* (sometimes called *Cowrie*, or *Kauri*) *Pine* (*Dammara australis*), the gift (with many other rarities) of Captain Sir William Symonds, R. N.; than whom no person is more competent to judge of its value for spars for the British navy. Ship-loads are annually imported to supply the Royal Dock-yards: it affords also copiously a valuable gum-resin. Other beautiful trees of that singular country are seen here: the *Dacrydium cupressinum*, whose feathery boughs perhaps exceed in delicacy and grace those of all other forest-trees; the *Celery-leaved Pine* (*Phyllocladus trichomanoides*); the *Mai* or *Metai* (*Podocarpus spicata*), and the *Miro* or *Mairi* (*P. ferruginea*); together with the singular *Aralia crassifolia*, a kind of ivy, bearing long leaves, of a texture almost resembling whalebone. Here, too, is the *Pepper of New Zealand* (*Piper australe*); the *Myrtus bullata*, with its blistery leaf; the charming *Metrosideros robusta**, which climbs over other trees, as the ivy does with us, and adorns their otherwise bare trunks with its large glossy foliage and brilliant scarlet flowers; the *New Zealand Beech* (*Fagus fusca*); and lastly, of the plants of this distant group of islands, I shall only mention the *New Zealand Flax* (*Phormium tenax*) (fig. 25.). Its leaves are like those of our *Iris*, or flag, and abound in strong

* It is beneath this, or some closely allied *Metrosideros*, that the large and curious *Vegetable Caterpillars*, as they are called, are so frequently found. Their nature is not generally known to those who bring them home. An insect, a large caterpillar, buries itself in the ground, there to undergo its transformation. It would appear that many perish before transformation, and are attacked by the seeds of a *Fungus* (*Sphæria Robertsii*), which, when perfected, rises some inches above the ground; while its roots penetrate every part of the body of the caterpillar, and render it a perfect mummy. In this state the insect with its vegetable parasite is brought to England from New Zealand, as a great curiosity.



NEW ZEALAND FLAX.

fibre, which recommends it for an immense variety of purposes where hemp or flax would be used in Europe. Indeed, vast quantities both of the raw and manufactured material have been of late years imported into Europe, and that and the Cowdie Pine have been hitherto the chief articles of trade of the New Zealanders.

Entering further into this house, we come to a young Pine, with something of the habit of the Chili Pine; but it is, in Europe at least, an unique and perfectly new species of *Araucaria*, from the high lands in the interior of Moreton Bay, N. E. Australia. Having been presented to the Gardens by its discoverer, T. Bidwill, Esq., it justly bears that gentleman's name, *Araucaria Bidwilli*. Full-grown cones are as large as a child's head; and, as the seeds of the Chili Pine are eaten in South America, so the seeds of this are eagerly sought for, as an article of food, by the aborigines of Australia, who at the proper season migrate to these pine-woods for the sole purpose of collecting them. The *Assam Tea* may here be seen (*Thea Assamica* of Dr. Royle), showing by its larger and pointed leaf that it is a distinct species from the Chinese Teas. Here, too, grow the two rare *Beeches* of Tierra del Fuego, one of which is already mentioned as planted near the pond; the *Evergreen* (*Fagus betuloides*), and the *Deciduous* (*Fagus Antarctica*) *Beeches*. They will probably both be removed to the open air, when we are better satisfied of the entire suitableness of our climate to them: we fear the summer's drought for them more than the wet or cold of winter. Near them grows another rare *Evergreen Beech*, the *Fagus Cunninghami* of Van Diemen's Land. Another tree is placed here, which it is expected will eventually prove hardy, the beautiful *Pine of China* and *Japan* (*Cryptomeria Japonica*), for seeds of which we are indebted to Captain Sir Everard Home, Bart. In the spring and summer a delicious pine-apple like fragrance is often perceived by the visitor at the west end of this house: it is diffused by the flowers of the Chinese *Magnolia fuscata*. Mingled with this shrub are various New Holland and Cape and other plants, and among them several

of the *Gnaphaliums* and *Xeranthemums*, or *Everlasting Flowers* (fig. 26.) as they are called from the nature of their blossoms, which neither shrink, nor, for a long time after being gathered, lose

GNAPHALIUMS AND XERANTHEMUMS.

THE HAND-PLANT.

their brilliant colours: also the *Hand-plant of Mexico* (*Cheirostemon platanifolium*) (fig. 27.), of which the stigma, resembling the human hand, probably recommended this fine tree as an object of worship to the natives: at the time of Humboldt's visit, the only tree of it then known in Mexico was held sacred.

Leaving this house by the western door, and looking north, we see a stone tank of water, containing hardy aquatic plants of England and other cool countries: among the more interesting are a few from the Falkland Islands and Tierra del Fuego, particularly the celebrated *Tussack Grass* of the Falklands (*Dactylis cæspitosa*), recently introduced by Sir James Clark Ross and the officers of the Antarctic voyage. It is unquestionably one of the most valuable agricultural grasses yet known, and having braved the droughts and cold of England for two entire years, there is no question that it may, with care and patience, be naturalised. It is slow of growth, and slower to form its great tussacks, whence is derived the name given to it by our voyagers.* They, together with the mass of foliage, form thickets, where wild cattle and more wild runaway sailors find shelter and protection, and both even *food;* for it is related, by the present governor of those islands, that two runaway sailors for a long time subsisted on the young shoots of this grass, which are, moreover, eaten by the better sort of people, boiled like asparagus. Close to this tank is an entrance to

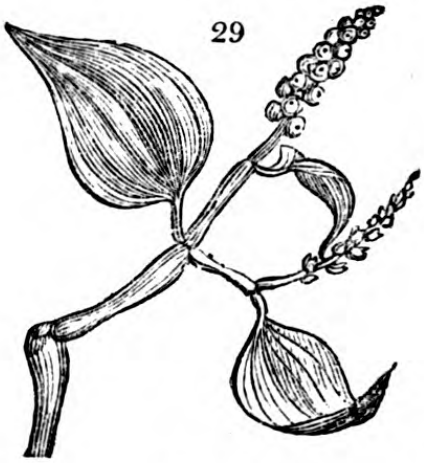
* It is foreign to the nature of the present little work to enter into a detailed account of this or any other of the rare plants of the Garden. A full history of the Tussack may be seen in "Notes on the Botany of the Antarctic Voyage," by Sir W. J. Hooker; in the "Flora Antarctica" of Dr. Hooker; and in the more recently published "Voyage of the Erebus and Terror," by Sir J. C. Ross, R. N.

No. 8. An *old Stove,* indeed the first that was ever erected in the Royal Gardens, as noticed at p. 5., 114 feet long, divided into three compartments by glass screens and walls. The first, now entered, contains chiefly South African and some Australian plants, but none of a very attractive kind. The middle compartment presents some old, though but few ornamental plants. Among the most interesting are a large *Date Palm** (*Phœnix dactylifera*), sadly cramped and injured by want of height; a large *India-rubber Tree* (*Ficus elastica*), of Eastern India, equally suffering for lack of space (the inspissated milky juice constitutes the *Caoutchouc* of commerce); the *Coffee Tree* (*Coffea Arabica*) (fig. 28.), it is here seen growing from the crevices of the bare tufa rock of Bermuda, as obligingly sent to us by his Excellency the late Governor Reid;

28

COFFEE TREE.

29



PEPPER PLANT.

the *Pepper Plant* of our tables (*Piper nigrum*) (fig. 29.); and many duplicate specimens which are surveyed to more advantage in other and better houses. In the third compartment we have chiefly large succulents, too large to be placed with their allied species, and for which due provision is not yet made in the Garden. Here are some large *true Aloes* of South Africa, *American Aloes* (*Agaves*), *Sansevieras, Dracænas,* &c. &c., and a few *Cactuses.* Among the latter are three lofty specimens of the *Old Man's Head Cactus* (or *Cereus senilis*), respectively 12½, 16, and 18½ feet high; two of the three, however, we lament to say, are now showing evident symptoms of decay. This species is called *senilis;* from the quantity of long wiry grey hair which crowns the summit (particularly observable in the younger plants in the *Cactus House,* No. 13). Unlike the human kind, the old plants are less conspicuous by their grey hair than the younger ones. For the means of procuring them we are indebted to John Taylor, Esq., and the gentlemen of the Real del

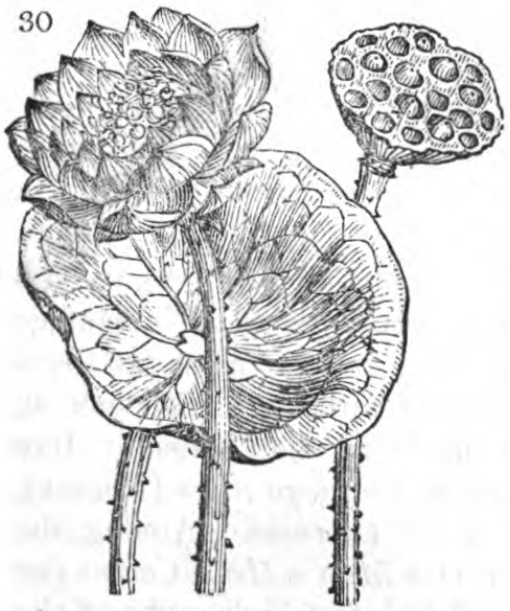
* At this time (June, 1847) about to be removed into Plant House, No. 1.

Monte Company. *Small* plants of this species we know to be twenty and twenty-five years old: from their slowness of growth, as well as from the reports of the inhabitants of Mexico, there is reason to believe that these gigantic individuals are some hundreds (probably a thousand) years old.

Quitting this *Old Stove* at the eastern door, and passing an oval bed, filled with the exotic-looking yet hardy *Yuccas* (or *Adam's Needles*), the nearest plant-house is a low building with a span roof, of which the entrance is at the east end;

No. 9. This is rather a *propagating house* (with a span roof) than one calculated to gratify the public; and unless it contains, as at some seasons, any thing of peculiar interest, it is kept private. Last year it was well worthy of a visit, from the number of young *Ivory Palms* in all stages of germination; but the best of these are now placed in other houses. It was here that, last year, we raised three young plants of the magnificent aquatic, the *Victoria Water Lily* (*Victoria regia**), which did not succeed with us indeed; but we trust yet to be successful, if we can procure ripe seeds at a better season. Here, too, in the autumn, may sometimes be seen the smaller but scarcely less gorgeous Water Lily, the East Indian *Nelumbium speciosum* (*Sacred Bean of India*) (fig. 30.), the κυαμος of the ancients; and here are generally a number of young East Indian and other *Palms*, brought forward till they exhibit a character which entitles them to a place in the public plant-houses, where they are surveyed to more advantage. Opposite to the door is an entrance to

30



SACRED BEAN OF INDIA.

No. 10. The *Australian House*, a structure of large size and excellent arrangements, in the form of a cross, at all times occupied by plants of great value; but if the visitor happens to come at the latter end of winter, or in early spring, he cannot fail to be struck with the floral beauty and fragrance of the inmates of this building. Since the time of His Majesty King

* The most magnificent of plants, and with justice dedicated to Her Most Gracious Majesty Queen Victoria. It inhabits the rivers of tropical Eastern South America. The leaves are six feet in diameter, and the flowers fourteen inches across. Figures of it are given in the Botanical Magazine, Tabs. 4275—4278.

George III., this Garden has been eminently rich in New Holland plants, and it now stands unrivalled in that department.* The present building has been much enlarged and improved, in order to receive as many as possible from that colony under one roof. It has already been filled to overflowing. Originally the house was a simple "lean-to," 60 feet long, 16 feet wide, facing the south; this was doubled, forming a span roof; and then, in the centre, on each side, a wing was thrown out, one running north, the other south, each 60 feet long and 22 feet wide, with a span roof, thus giving an extreme length of 152 feet. The whole interior is neatly fitted up, with stone shelving and hot water pipes, while copious concealed tanks (as in our other new and improved houses) are formed, for the purpose of catching and preserving a large body of rain water; and the roof and sides are glazed with sheet glass. This extensive but simple structure is filled with a perfectly unique collection. The *Proteaceous* family is among the most conspicuous. Coming, as these plants do, from the southern hemisphere, they preserve much of their original habits; and a large number of them, especially the *Banksias* and *Dryandras*, the brilliant *Waratah* (*Telopea speciosissima*) (fig. 31.), &c., may be seen bearing their curious flowers in winter, and the *Leguminosæ* during the early spring months; when the fragrant *Acacias* (fig. 33.) are also in perfection. The *New Holland* Acacias, as is well known to naturalists, exhibit a remarkable conformation in their foliage. In other countries the leaves are perfect, having their normal character, more or less compound and pinnate with numerous leaflets. In the innumerable species of Australia (with some exceptions), the seed-

31

TELOPEA SPECIOSISSIMA.

* Formerly the Garden was almost equally rich in South African, especially the *Proteaceous* plants, of the Cape colony; but they gradually died out; and, strange to say, although the botany of South Africa has been of late years investigated beyond that of every other country, seeds and living plants have been almost wholly neglected; so that in the plants of no country are our and other European gardens more deficient than of South Africa. Some idea may be formed by the subjoined wood-cut (fig. 32.) of the beauty of some that have formerly flourished in this Garden, and of which we should be thankful again to receive seeds.

32

PROTEACEÆ.

NEW HOLLAND ACACIAS.

leaves only are compound: as they advance in age they cast off the leaflets, and at length produce only *leaf-stalks*, which widen, and have the appearance, and perform the functions of, true leaves. These leaf-stalks (called *phyllodia*) are easily recognised by their position: it is not a *flat* side, but one of the edges, which is vertical, or directed to the zenith.

One extremity of this *Australian House* (the south) is occupied by a number of the beautiful genus *Epacris*, which may be called the Heaths of Australia, being nearly allied to them, and perhaps superior in beauty.

If we make our exit from this house at one of the east doors, or at the north door, we shall at once (by turning to the right in the latter case) perceive a rather large open space of lawn and shrubbery, a portion of the ground recently taken in from the Royal Kitchen and Forcing Ground, and not yet rendered so ornamental as it will be. The plant-house nearest and to be next visited, is

No. 11. The *Orchideous House*, situated due north of and close to the Australian House. It is most conveniently approached from the east. Passing through a small porch, a new span-house is entered, 90 feet long and 28 feet wide, glazed with sheet glass, having a double slate st ging in the middle, facing north and south, with a walk through the centre, and another walk on the outside and around the staging, with stone shelving on the opposite side. This fine area is mainly occupied with *Orchideous Plants*, mixed with an extensive collection of *Ferns*, together with certain tropical plants, suited to the great heat and moisture of this place. The *Orchideæ* are eminently valuable. In the short space of five years, there have been added to the original collection the extensive one of the late Duke of Bedford, presented to Her Majesty Queen Victoria by his present Grace, and the still more valuable legacy of the

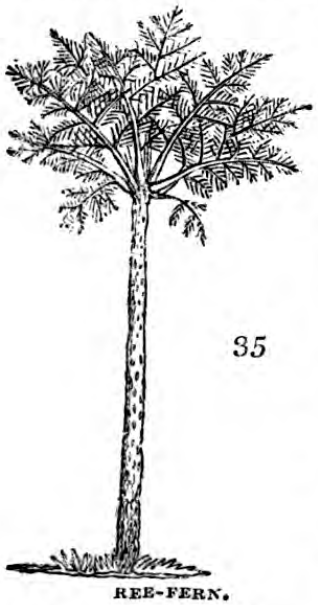
late Rev. John Clowes*, M. A., of Broughton Hall, Manchester, in the autumn of 1846; together with many species, procured by purchase, or from our collectors and friends abroad, and other sources. The *Orchideous Plants* (or *Epiphytes*, as they are not unfrequently termed, from the fact of the tropical *Orchideæ* being generally found growing on the trunks and branches of trees) are at this time the greatest favourites among cultivators; and the prices given for many would surprise any person not individually interested in them. When in flower they are certainly among the most beautiful and lovely of the vegetable creation, and remarkable for their highly varied forms, great delicacy of texture, and often exceedingly brilliant colouring. Happily, too, there is not a month in the year that some or other is not in blossom; though the first powerful suns of spring induce the flowering in a very marked degree. Many are here seen, attached to trunks of wood, or placed in wire baskets with moss and bark, or in the husk of cocoa-nuts, and suspended from the rafters, living, as it were, and flourishing on heat and moisture. It would be an endless task to direct attention to any particular kinds; for their beauty depends on the presence or absence of blossoms, which, though there are several exceptions, are generally short-lived. Still we may observe that the collection contains several *Peristerias, Cattleyas, Stanhopeas* (exhaling, as do many others, a most powerful fragrance); *Lælia superbiens*, remarkable for the large size of its flowers; *Phalænopsis amabilis*, or *East Indian Butterfly Plant*, with its corollas of the purest white; and *Oncidium Papilio*, or *West India Butterfly Plant*, whose resemblance to an insect is increased by the presence of certain petals, which look like long antennæ, and by the flower being borne on a long slender stalk, far away from the leaves, and which seems to carry the fly into the air. The *Vanilla* (*Vanilla aromatica*) (fig. 34.), is one of these tropical *Orchideæ*, whose long narrow pods (not unlike those of the Haricot bean, but dark brown in colour and soft and oily to the touch), afford the fragrant *Vanilla* of commerce,

* The following notice of this gentleman's Will appeared in the public prints, shortly after his death:—"The entire collection of Orchideous plants which belonged to the late Rev. John Clowes, M.A., of Broughton Hall, Manchester, he has directed should be transferred to, and form part of, the royal collection at Kew, and he bequeaths them accordingly to Her Majesty. His collection was considered one of the finest in the kingdom. Mr. Clowes made his will on the 9th of March last, and has added five codicils, the last dated in September, a fortnight before his death. He has left various pecuniary bequests to his nephews and nieces. To his sister, Lady Scovell, 2,000*l.* To his sister, Mrs. Frances Bradshaw, 5,000*l.* absolutely, and also the interest of 10,000*l.* for life, and then to be divided among her children; also 10,000*l.* in trust, the interest for Mrs. Eliza Bradshaw, wife of his nephew, Lieutenant Colonel Joseph Bradshaw, and then to her children. Specific bequests of plate to his brother, Leigh Clowes, Esq. Liberal legacies to his servants and workmen. The residue, real and personal, to his nephew, the Rev. Samuel Bradshaw, M.A., rector of Grindon, Stafford, one of his executors. Besides the property in York, for which there is a separate grant of probate, the funded and personalty within the province of Canterbury, paid a duty of 35,000*l.* The family estate, to which the deceased succeeded on the death of his elder brother, included nearly the whole township of Broughton-with-Kersal."

34

VANILLA AROMATICA.

much used in the preparation of chocolate, and in various other ways as a condiment, being considered to promote digestion. It is a native of the hot parts of South America, and from Vera Cruz alone the pods of this plant are exported to the amount of 40,000 dollars annually. Our species of the East Indian genera *Aërides* and *Saccolabium* are among the most highly prized. At the latter end of winter, the very lovely East Indian kinds of *Cypripedium* are generally in blossom; these, however, with some others, are terrestrial, and planted in pots of soil. Of this kind is the *King Plant* of the Cingalese (*Anæctochilus setaceus*), as rare as its leaves are beautiful: our specimens are kept under bell-glasses; and the foliage closely resembles brown-green velvet, with the most exquisite network of gold. It has been already observed that *Ferns* and some other plants are also placed in this house, to be removed as the *Orchideæ* increase (and increase they will). The *Ferns*, in particular, constitute a very valuable collection, under the skilful management of the curator, Mr. J. Smith, with whom they have been always great favourites; and nothing more lovely in form and texture can be conceived than are the leaves, or more properly fronds, of many of these. The *Tree-Ferns* (fig. 35.) are among the rarest and most valuable of trees; and some, though yet comparatively small, are in a very flourishing state. Of all plants they are the most difficult to import alive, except in a very young state. In our country, *Ferns* are of humble stature, their leaves, or fronds, emerging directly from the ground. In the tropics, and even in the more temperate parts of the southern hemisphere, these fronds, 15 to 20 feet long, are elevated on unbranched trunks (resembling Palms), 20 to 40 and 50 feet high. The *Bird's-nest Fern**, *Asplenium Nidus* of Linnæus (*Neottopteris vulgaris* of J. Smith), is a noble Fern: it is



35

REE-FERN.

* Some of the larger specimens of Ferns, of difficult cultivation, are occasionally removed into the house which immediately adjoins the Orchideous House and is only separated from it by a glass screen; according to the degree of heat they may require at different seasons.

suspended from the roof of the house. The *Stag's Horn Ferns* are of three kinds in this collection, easily recognised as growing upon the surface of a piece of plank, being a substitute for the branch of a tree in their native country. The finest and rarest of them is *Platycerium grande**, of New Holland, presented by Mr. Bidwill. At the period of its most perfect development, it forms a beautiful model for an ornamental bracket; and for that purpose artists have made drawings of it.

In the Orchideous House, which admirably promotes their health and vigour, are fine specimens of two *Pitcher Plants*, the *Nepenthes distillatoria* (fig. 36.), and the infinitely rarer *N. Rafflesiana:* the latter was successfully brought home from Singapore in a Ward's case by Captain Bethune, R. N., and by him presented to the Royal Gardens. Both are more or less scandent plants: the leaves are terminated with an appendage exactly resembling a pitcher, of considerable size, having a lid at the top. When young, the lid is firmly closed, yet, even at that period, it contains a considerable quantity of fluid, distilled, as it were, by the plant (whence is derived the name of the one in more general cultivation of the several species known to botanists): after a time the lid opens, and continues firmly attached at the back of the orifice by a hinge, and never again closes. With us in the summer season, and in its native Malayan islands at all seasons, insects visit the pitchers in great numbers to get to the liquor, fall in, and from the difficulty of escape are drowned, sometimes filling the entire cavity. Two aquatic plants, floating in small tubs or pans of water, are worthy of inspection in this house. One resembles bright green lettuces floating on the surface of the water: it is the *Pistia Stratiotes* of the West Indies, the *Duck-weed*, in fact, of tropical countries. The other is distinguished by the leaf-stalks being remarkably inflated, with large air-cells within, these give buoyancy to the plant, which would otherwise sink: it is the *Pontederia crassipes*, and bears a beautiful blue flower.

PITCHER PLANT.

It is now time to quit the Orchideous House, where, indeed, in he summer, and especially if the sun shines powerfully, the moist

* Only one other well-grown specimen of this is in Europe, equally brought over by Mr. Bidwill, in the collection at Syon, where it has produced its remarkable fructifications. Of this rare Fern there is an excellent representation in the second volume, p. 181., of the "Voyage of the United States' Exploring Expedition," as seen growing on the branch of a tree in the garden of our friend Alexander M'Leay, Esq., at Sydney, New South Wales.

heat of this house will be found scarcely supportable long, and we can enter the adjoining somewhat cooler one at the west end of this;

No. 12., a *Stove,* 50 feet long, with a span-roof of the same width as the Orchideous House, filled, or rather crowded, with a very miscellaneous collection of warm country plants. This is one of those houses which, from being an old-fashioned lean-to, heated by smoke flues, and having a high back wall to the north, has been doubled and converted into an excellent span-house, heated by hot-water pipes and tanks, with slate tables, stone shelves, and slender pillars for climbing plants. The difference in the appearance and health of the plants, since this change, is truly surprising. Several plants of great rarity and interest are placed here; though the reader must bear in mind that increase of growth and other circumstances compel many to be removed into other houses. A considerable portion of the side-shelves is occupied with an extensive collection of the genus *Begonia,* whose highly ornamental foliage amid a hundred modifications preserves its peculiar character of obliquity; and the plants are thence not inaptly named *Elephant's Ears.* The species, too, possess a great recommendation in producing their delicate pink, or white, or even crimson blossoms at different seasons; so that one or other kind may be seen in blossom all the year round. Here, too, is the famous *Paraguay Tea* (*Ilex Paraguensis*) (fig. 37.): no true *Tea,* indeed, but, as its scientific name implies, a kind of *Holly;* yet under the name of *Maté* it affords a beverage almost as extensively used in South America as the Bohea, Souchong, or Hyson are in Europe; the *Tanghin,* or *Poison Tree* of Madagascar (*Tanghinia venenifluа**) (fig. 38.) rendered infinitely more deadly than Upas by the execrable laws of the Malagassy king-

37

ILEX PARAGUENSIS.

38

TANGHINIA VENENIFLUA.

* For a coloured representation of this tree, and many particulars of its use in the native ordeal, as communicated by the intelligent Missionaries, see "Botanical Magazine," Tab. 2968, and "Botanical Miscellany," vol. iii. p. 275. Tab. 110.

39

MANGOSTAN.

40

JATROPHA MANIHOT.

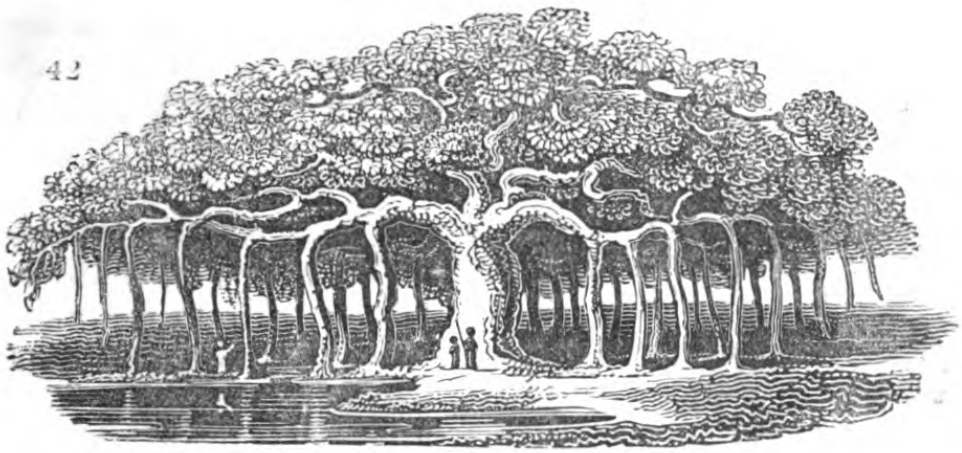
dom ; the East India *Mangostan* (*Garcinia Mangostana*) (fig. 39.), the rich fruit of which we vainly strive to bring to perfection in our stoves ; the *Manihot* (*Jatropha Manihot*) (fig. 40.), a most virulent poison, but whose roots (their poisonous juices being removed by pressure or dissipated by heat) are made into the well-known *Cassava Bread* of the West Indies, and into as great a variety of wholesome food as can be obtained from wheat ; the *Cinnamon* (*Laurus Cinnamomum*) (fig. 41.), whose bark constitutes the valuable spice of that name ; and the *Bastard Cinnamon* (*Laurus Cassia*), of which the bark is said to be often substituted for that of true Cinnamon. The *Banyan* (*Ficus Indica*, for it is indeed a species of Fig) (fig. 42.), is one of the most celebrated trees in the world for the immense stretch of its limbs and the singular mode provided by nature for their support : —

41

CINNAMON.

> " Spreading so broad and long, that in the ground
> The bended twigs take root, and daughters grow
> About their mother-tree, a pillar'd shade
> High overarch'd, and echoing walks between."

These roots or props occupy such a space of ground, that one, growing on the banks of Nerbuddah, covers an almost incredible area, of which



BANYAN TREE.

the circumference now remaining (for much has been swept away by the floods of the river), is nearly 2000 feet. The overhanging branches, which have not yet thrown down their props or supports, stretch over a much larger space: 320 trunks may be counted, while the smaller ones exceed 3000, and each of them is continually sending forth branches and pendent roots to form other trunks, and become the parents of future progeny. The whole (according to Forbes' "Oriental Memoirs," from which I quote) has been known to shelter 7000 men beneath its wide-spread shade. Our young plant of course can give no idea of this singular mode of growth; indeed it is evident that a well-grown tree of this would alone fill the entire Palm stove of the Garden. The *Pepul Tree* (*Ficus religiosa*), from the same country, is remarkable for the tail-like points to the extremities of the leaves; and these leaves abound so much in closely reticulated tenacious fibre, that the Chinese, by macerating them, and removing the pulpy or parenchymatous substance, produce a kind of paper, which, when varnished, is capable of receiving the most beautiful drawings of birds, beasts, insects, flowers, &c. Such leaves, with the drawings, are commonly brought to this country from China, and are easily known to belong to this tree by their heart-shaped outline and the long tail-like point. A third kind of *Fig* must be here alluded to in this collection, for it illustrates a plant of Scripture, the *Sycamine Tree,* or *Sycamore* of Palestine (fig. 43.), the tree into which Zaccheus climbed (*Ficus Sycamorus*); this is the true and original *Sycamore,* its name being derived from συκον, a *fig,* and μορος, a *mulberry;* meaning a fig, whose leaves resemble those of the mulberry. "I was no prophet, neither a prophet's son, but," says Amos, "I was an herdsman and a gatherer of *Sycamore fruit;*" from which, and from other passages in Scripture, it may be inferred that this tree was of very great importance among the Jews, although its fruit is extremely inferior to that of the true Fig (*Ficus Carica*).

SYCAMORE

Pliny even says, that the "fruit is nauseous until rubbed with iron combs, after which it ripens in four days," a mode of treatment evidently connected with *caprification*, or a means of admitting insects to enter and fertilise the figs. These and the common fig are the only eatable ones of 200 known species. The present is said to be among the loftiest trees in Palestine; but like the Cedar of Lebanon, and probably from a similar cause, the number is extremely diminished from what it was in King David's time, when Sycamores were so plentiful that that monarch placed "overseers over them." In Solomon's time, Cedars were made to be in Jerusalem "as the Sycamore trees that are in the valley for abundance:" "the bricks are fallen down," says Isaiah, "but we will build with hewn stones: the Sycamores are cut down, but we will change them into Cedars." These are allusions to the *Sycamine* or *Sycamore* fig; of which the wood, too, is said to be indestructible, and therefore used for Egyptian mummy-cases. But we must proceed; and as our space will not permit the mention of a tithe of the interesting plants in this stove, we must content ourselves with saying that here may be examined, flowering at some period or other of the year, a great variety of the showy kinds of *Achimenes, Gloxinia, Gesneria,* &c., and here also the feathery foliage of the *Tamarind Tree* (*Tamarindus officinalis*), whose preserved fruit is an extensive article of commerce; the *Cotton* (*Gossypium herba-*

COTTON TREE.

INDIGO.

ceum) (fig. 44.), the seeds of which are surrounded by that beautiful filamentous substance, and whose flowers resemble an *Hibiscus*; *Indigo* (*Indigofera Indica*) (fig. 45.), the leaves yielding the rich dye,

so called; the great flowers of the *Aristolochia Gigas*, so large indeed, that the children in South America, according to Humboldt, wear them as hats, and their shape is that of a helmet; and the well-known *Humble Plant, Mimosa pudica* (often, though incorrectly, called the *Sensitive* plant, which is *Mimosa sensitiva*):

"Weak with nice sense the chaste *Mimosa* stands,
From each rude touch withdraws her timid hands:
Oft as light clouds o'erpass the summer glade,
Alarm'd, she trembles at the morning shade,
And feels, alive through all her tender form,
The whisper'd murmurs of the gathering storm,
Shuts her sweet eyelids to approaching night,
And hails with freshen'd charms the rising light."

The best way to exhibit the sensitive properties, so called, of the leaves, is to cut off suddenly and cautiously the tip of one of the terminal leaflets, when all the other leaflets on that stalk will close, *a pair at a time*, from above downwards; thence the impulse is continued to the adjoining stalks and to the leaflets from below upwards; then the whole leaf will fall. — And, lastly, around the pillars and upon the rafters twine various climbing plants; such as the eatable *Passion flower* or *Granadilla* (*Passiflora edulis*), *Telfairia pedata, Allamanda cathartica, Poivræa coccinea* and *Roxburghii, Petræa volubilis, Ipomæa Horsfallii, &c. &c. &c.*

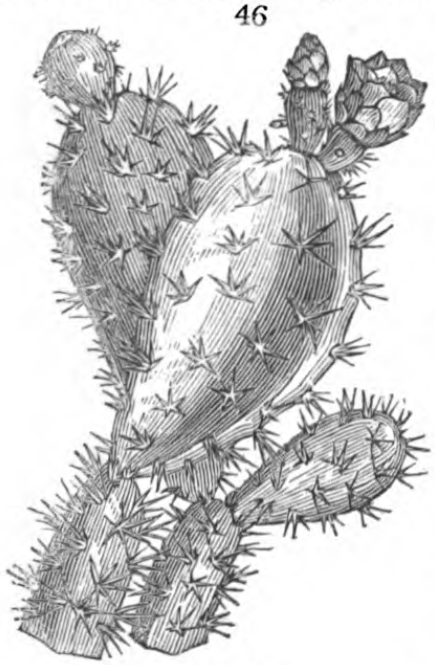
Due south of the Stove No. 12. we have just been describing, we can, at the northern door, enter a rather small house in the form of a T, in reality a double span-roofed house;

No. 13. (the *northern wing*), and No. 14. (the *transverse portion*), open the one into the other, and now both of them being filled with the *Cactus tribe* (and a few other succulents to which a similar atmosphere is suitable), it is hence denominated the *Cactus House.* This again is, perhaps, as a collection of *Cactuses*, perfectly unique of its kind, thanks to various friends in the warmer parts of the New World, of which countries they are exclusively natives. If these plants do not possess much grace and beauty (their flowers, however, are often splendid in the extreme), yet they are very remarkable in the strange forms and structure of their, almost invariably, leafless stems and trunks, their deep longitudinal ribs or furrows and sharp angles, the singular vestiture of hairs or spines (or both combined); the latter, often in countless myriads, are arranged with the most perfect symmetry in stellated or star-shaped clusters, sometimes not thicker than bristles, and scarcely two lines long, or broad, and transversely banded like lobsters' horns, at other times long and straight,

and so strong as to serve the Mexicans to fasten their "ponchos" about their persons: some species resemble the convolutions of the brain.

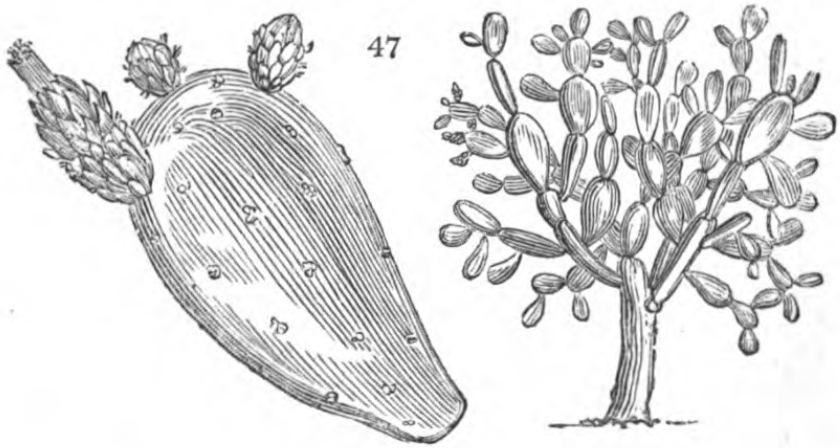
This House, No. 13., is chiefly occupied by the smaller kinds of *Cactuses*. There is on one of the shelves a little collection of what are called *Ichaboe Plants*, presented by Henry Davidson, Esq., of Rosslyn House, Hampstead. They are from the mainland of Africa, close by Ichaboe; for an island, covered as that was with guano, could yield no plants. More than one of them is remarkable for exuding gum-resin, and that marked *Monsonia Burmanni* (the old *Geranium spinosum* of Linnæus) for becoming when dead a mass of *gum-resin*, of which the quantity is so great in these burning sands, that it has been imported, in the hope of its proving valuable as an article of commerce. — The adjoining house, No. 14., is mainly filled with the larger *Cactuses*. One compartment is distinguished by the tall and curiously jointed and flattened stems; these are the *Opuntias* or *Nopals*, of which some kinds yield the fruit much eaten in warm countries, under the name of *Indian Fig* or *Prickly Pear* (fig. 46.), and for making almost impenetrable fences (these are called *Tunas*). Other kinds are cultivated to an immense extent for the purpose of harboring the *Cochineal Insect** (fig. 47.), a small kind of meal-bug, which is reared in such quantities, that from Mexico alone, Humboldt assures us, 32,000 arrobas of cochineal are annually exported, equal to 500,000*l.*

46



CACTUS TUNA.

47



CACTUS COCCINELLIFER.

* In general this valuable insect itself may be seen upon some or other of the *Nopals*, especially on the *Cactus*, or *Opuntia*, *coccinellifer*. For want of the male insect (which is winged, whereas the female is apterous), we can only keep up this interesting stock by frequent importations; and the friends of the Garden who have connection with the countries where the insect is reared, will render us a service by sending us, from time to time, cuttings of the *Nopal* with the living insect, put into a small airy box.

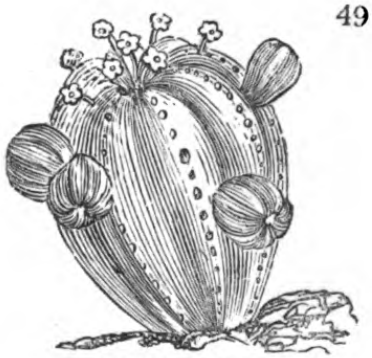
sterling. The insect has the power of extracting the juices, and converting them, by a chemical process, into the rich scarlet dye called *Cochineal;* but it is not so generally known that the fruits of the *Nopals* imbibe the same colour; and excellent cochineal has been obtained from the fruit as well as from the insect in the East Indies. The front shelf of No. 14. is mainly occupied by a set of *Cactuses* a good deal resembling in form and spinous character the Sea-Urchins of our shores (*Echinus*), and thence appropriately denominated *Echinocactus.* Some of the largest of these, however, stand on the floor, and one will be easily recognised as the "monster" of the collection, the *Echinocactus Visnaga,* so called (*Visnaga* meaning a pick-tooth in Spanish) from the use made of the spines in Mexico. The weight of this single specimen is 713 pounds, and it is in the most perfect state of health and vigour. It was drawn by oxen from the interior of Mexico (San Luis Potosi) to the coast for shipment, and arrived in excellent condition, thanks to the kind sender, Frederick Staines, Esq.*

In this house are generally placed some leafless (and other) *Euphorbias* (figs. 48, 49.), whose forms a good deal resemble certain Cactuses,

48

EUPHORBIA ANTIQUORUM.

49



EUPHORBIA MELOFORMIS.

and whose milky juice is eminently poisonous, and extensively employed in South Africa for rendering mortal the wounds of arrows and assagays; — and *Stapelias,* or *Carrion-Flowers* (fig. 50.) of South Africa, whose quadrangular leafless stems have indeed some resemblance to Cactuses, but the flowers resemble star-fish. Their odour is such that flies, attracted by it, lay their eggs upon them in great numbers, taking them for putrid meat: the poor larvæ, when

* The same gentleman did us the favour, with infinitely greater labour, to send us a much more magnificent plant of this Cactus in 1846, *thrice* the size of the present one, and weighing one ton. It was planted, and looked sound and perfect, and was, for some months, the wonder of the Garden, and it found a place in the *Illustrated London News* of the day, where an excellent representation was given; but it had received injury during the perilous journey or voyage: a bruise appeared; and decay soon extended through the whole of this enormous mass, tainting the air with its fœtid smell.

CARRION FLOWERS.

hatched, find the difference, for there is nothing for them to feed upon, and they perish in great numbers; thus it would appear that *Stapelias* are among the many plants destined by the Author of nature to keep insect life within due bounds. Even on the *outside* of this double Cactus House are some attractive objects. On the east and west side of No. 13. are frames containing a miscellaneous collection, chiefly in pots, especially of half-hardy Ferns. That on the west side, in summer, exhibits a noble specimen of *Erythrina Corallodendron*, with large coral-coloured papilionaceous flowers, one of the most striking of our half-hardy plants. On the outside again, in a narrow bed immediately under the front of this house (facing the south), with other tender plants, are the three kinds of *Tea*, much cultivated by the Chinese, the *Black Tea* (*Thea Bohea*) (fig. 51.), the *Green Tea* (*Thea viridis*), and the *Sasanqua Tea* (*Thea*, or *Camellia*, *Sasanqua*) (fig. 52.). The last of these seems only to be employed to give flavour to the other Teas; while from the Green and the Black Tea Shrubs of botanists, it is generally acknowledged that the Chinese make the green or black tea of commerce indifferently from either of them, according to the modes of preparation. In mild winters they may be seen blossoming in the open air so late as Christmas.

BLACK TEA.

SASANQUA TEA.

Opposite, that is, on the other side of the walk, west of the Cactus House, are two or three interesting hardy trees or shrubs. Sheltered by the Old Stove, No. 8., and at its eastern end, stands a fine shrub of the Japan *Photinia serrulata*, a charming evergreen, seldom bearing flowers in this climate. Climbing above it, on the east and north side of the walls of the stove, is a noble plant of the old *Glycine* (now called *Wistaria*) *Sinensis*, whose innumerable

SALISBURIA ADIANTIFOLIA.

clusters of blue flowers (in shape like those of *Laburnum*) are very striking in the early spring, before the leaves are unfolded. Next to that (proceeding north), and trailed on an espalier, is a very aged trunk of the singular Japanese *Salisburia adiantifolia* (fig. 53.), whose leaves are shaped like a fan, with a deep notch at the top; and next to that again is the *Terebinth Tree* (*Pistacia Terebinthus*) (fig. 54.), considered by some commentators the *El-Elah* of Scripture, (generally translated *Oak*): it yields the Scian turpentine, a rare gum, and mostly consumed in the Levant.

PISTACIA TEREBINTHUS.

If we follow the walk a little further north (towards the principal entrance), we shall come to a dirty old-fashioned *Stove*, the only one of the original Botanic Ground which remains to be visited: this is

No. 15., originally built for a *Palm Stove*, but very ill suited to such a purpose; even though the roof has been raised several feet above the first design. At present the only *Palms* remaining are the very finest in the collection as to bulk, planted in the ground, and sadly injured for want of room. They are two specimens of the *Jamaica Fan-Palm* (*Sabal umbraculifera**), whose ample foliage cannot fail to attract attention. They must continue here till the house itself is taken down, which it will be when the new Palm-house is completed (together with the plant-houses, No. 7. and 8. of this Guide Book). The other inmates of this stove are miscellaneous in character and frequently changed. There may, however, generally be seen flowering plants in the winter season of the *Strelitzia Regina*, already noticed at p. 3.; and some rare *Acanthaceous* plants, which make a good appearance when in bloom.

We have now described, more or less briefly, the contents of the plant-houses in all that was, till lately, the *Botanic Garden* proper; but, as already observed, a considerable portion of the *Royal Kitchen and Forcing Gardens* has been added to it; and the visitor who can

* Fine though these specimens are, we believe they are exceeded by a Palm of the same species, to which more space has been allowed than with us, at Hale Hall, Lancashire, the seat of John Blackburne, Esq., M. P. A description and figure of the tree in flower are given in Loudon's Gardeners' Magazine, vol. v. p. 54., under the name of *Sabal Blackburniana;* but the species is assuredly the *Sabal umbraculifera* of Swartz.

spare the time may like to see the improvements that are carrying on there. To accomplish this he must here retrace his steps a little, and will find a walk on the east side of the *Australian House* (No. 10.), which conducts the stranger in an easterly direction past

No. 16., an old and large double *Vinery*, temporarily occupied with Geraniums and some ornamental plants, together with a very varied set, of little show or value, removed from other houses that were too much crowded. This is scarcely worthy of a visit in its present state; and we proceed, through a paddock, in the possession of His Majesty the King of Hanover, into the great eastern division of the late Royal Kitchen Garden, now about to be converted into the *Herbaceous Ground*, or general collection of *hardy exotic herbaceous plants*, intermixed with shrubs and ornamental trees upon the lawn. The same piece of ground contains several plant-houses, also a building formerly a Fruit-House to the Kitchen Garden, now converted into a

Museum, destined to receive specimens of *Fruits* and *Seeds*, *Gums*, *Resins*, *Drugs*, *Dye-stuffs*, *Sections of Wood*, and all curious and interesting vegetable products, especially what are useful in the arts, in medicine, or in domestic economy: such vegetable substances, in short, as living plants cannot exhibit. This will prove a most valuable addition to the establishment, and cannot fail to be both attractive and instructive.—The plant-houses in this ground were erected for Vines, Pines, &c., and the majority of them will eventually be removed: meanwhile they are usefully employed to shelter the superfluous plants from other houses, and some of them being worthy of attention, we shall briefly notice them.

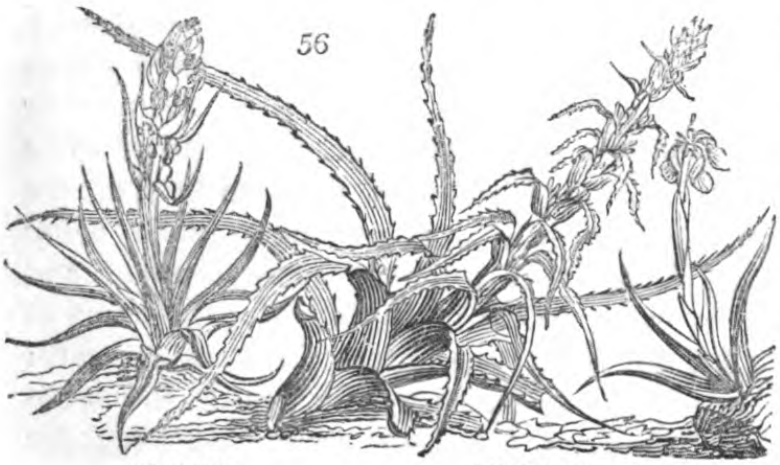
GROUP OF ALOES.

No. 17. Opposite the front of the Museum building is a long *Treble Greenhouse*: One compartment is filled with varieties of *Geraniums*, *Verbenas*, &c., for planting out in the summer; another contains an extensive collection of South African *Aloes* (fig. 55.), and other *Succulents*; and the third a set of *Mesembryanthemums* or *Fig-Marygolds* of the Cape.

No. 18., a lean-to at the back, or north side of the Museum, is a *Double Plant House*, still larger than No. 17.: in consequence of the alteration to the Museum, the lights had to be removed; and no plants are at present deposited in it. To the east of this is

No. 19., likewise a double house, with a good assortment of *Camellias* and *Azaleas*, and in the winter a large quantity of *Petunias*, *Calceolarias*, and various other plants, chiefly for ornamental purposes and for filling the open borders in the summer.

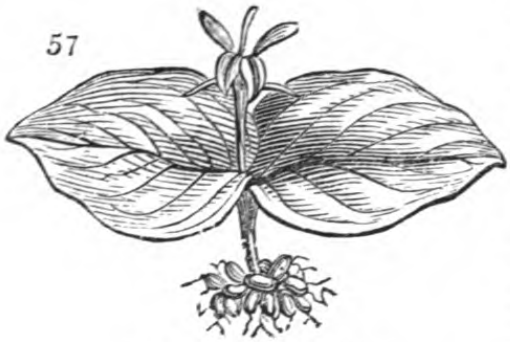
No. 20. This (and the following house, No. 21.) is situated north of No. 19., in a piece of ground not yet ornamentally laid out, and is used as a stove for various *monocotyledonous plants*, some duplicate *Palms*, and a considerable collection of *Bromeliaceæ** and allied families. Among the *Bromeliaceæ* the *Tillandsias* (fig. 56.) are interesting. We often receive them from tropical countries, and they succeed well with us, attached to truncheons of wood (for they are Epiphytes, like the *Orchideæ*) until the flowering is past, and then they almost invariably wither: we need, therefore, a frequent importation of them. The leaves of many are singularly hollowed at the base, and in the driest weather filled with water, which often proves serviceable to man and animals. But a remarkable discovery was made by Mr. Gardner, in Brazil; viz., that a peculiar aquatic species of *bladder-wort* (*Utricularia nelumbifolia*, see Hooker's Icones Plant. Tab. 505, 506) inhabits exclusively the water in the hollow leaves of one of these species, and emits runners, which reach to other hollow leaves, and there send out new plants! Near this house is



BROMELIA. TILLANDSIA.

No. 21., a rather large *Double House*, the first compartment chiefly devoted to *Scitamineæ* and *Aroideæ*, the second to *Amaryllideæ* and climbing plants in pots. Of these we shall merely observe that the *Scitamineæ* include a good many *Spices* and *Medicinal*

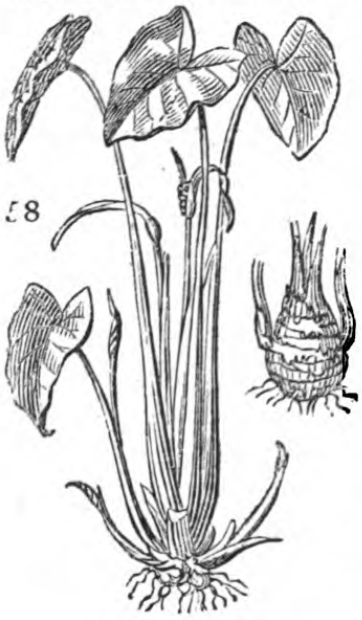
* See p. 13. of this work.



57

KÆMPFERIA GALANGA.

Plants. Among them we may specify the well-known *Galangale* (*Kæmpferia Galanga*) (fig. 57.), the *Arrow-root* (*Maranta arundinacea*), the various kinds of *Indian Shot* (*Cannæ*), *Phrynium*, and *Hedychium*, with their large and fragrant flowers, *Alpinia*, *Ginger* (the tuberous roots of *Zingiber officinale*), *Turmeric* and *Zedoary* (both species of *Curcuma*), *Cardamoms* (*Amomum*), &c. &c. If the *Scitamineæ* include plants which are both aromatic and useful, the *Aroideæ* are no less remarkable for their *esculent* properties, combined with a powerful *poison*. The tropics abound with them; and even England yields one kind (our *Arum* or *Wake Robin*), which, both in appearance and qualities, may be considered a type of the rest. In most of them the foliage is large, frequently more or less heart-shaped; and the flowers are arranged in that kind of spike denominated a *spadix*. It is characteristic of the family that the juices are poisonous, often eminently so; but those juices being removed, the foliage and farinaceous tubers become esculent and wholesome: the former is eaten boiled in India under the name of *Indian Kale*, the latter in various warm countries as a substitute for bread, the *Arum Colocasia*, or *Egyptian Arum* (fig. 58.), for example, in Egypt and the East, and the *Arum esculentum* in the West Indies. Our own *Arum maculatum* is commonly collected in the south of England, especially in Portland Island, and the roots made into pastry or used as *Arrow-root*. *Caladium Seguinum* is the *Dumb Cane* of the West Indies; so called because a small quantity of its juice, dropped upon the tongue, causes that organ to swell violently and prevents the power of speech. *Calla Ethiopica*, of this group, is one of our most common and ornamental greenhouse plants, and fills the ditches and watercourses in South Africa. A peculiar aspect is exhibited by all the individuals of the *Aroideæ*, independent of botanical character. Hence the importance of seeing, in a garden, plants grouped according to their *natural affinities*, as illustrative of their properties; and this we have attempted to do in many instances in this vast collection. Yet, to accomplish it in a satisfactory manner, in the stoves and greenhouses,



58

EGYPTIAN ARUM.

requires a great deal more space than we can at present afford; though the liberal and enlightened views of Government, in relation to this Garden, warrant us in saying that every year, as the plant-houses increase, so will the *utility* of the collection, as a means of instruction, increase likewise.

59

ORIENTAL PLANE.

The number of *Plant-Houses* now enumerated is twenty-two (including the *Palm-House*), of which number two are treble houses and four are double; so that the actual number is twenty-eight.

And now it is time to return the way we came (being the nearest), to the *Old Palm-Stove*, No. 15. This stands at the edge of the original *Arboretum*, a small piece of ground, indeed, for such a purpose, of about five acres*, but crowded with hardy trees and shrubs of extreme interest and value, more than can possibly be here enumerated. Near the *Temple of the Sun* are noble trees of the *Turkey Oak* (*Quercus Cerris*), the *Oriental Plane* (*Platanus Orientalis*) (fig. 59.), a good *Cedar of Lebanon* (*Cedrus Libani*), a very large *Locust-Tree* (*Robinia Pseudo-Acacia*), a *Lotus* of North America (*Diospyros Virginiana*), a fragrant *Sassafras* (*Laurus Sassafras*), and a healthy though young *Cork Tree* (*Quercus Suber* †) (fig. 60.), a large *Koelreuteria*, &c. &c. This Arboretum is circumscribed by a walk: by taking that which goes past the temple, we can pass the east end of the Orangery on the way to the principal entrance, among good exotic trees, *American Limes*, *Oaks*,

60

CORK TREE.

* It being impossible to extend the ground for an addition to the Arboretum in this direction, it is in contemplation, as before intimated, to convert the Pleasure Ground (already adorned by many fine trees) into an *Arboretum*, by planting judiciously and systematically the open glades with all such trees as will bear the English climate. It will then be proved that 170 acres is not too much for such a purpose, for which, ninety years ago, five acres was considered to be amply sufficient!

† Two very large ones in this Arboretum, great favourites of His Majesty George III., were blown down in a gale during the latter part of that monarch's reign.

Hickories, red and yellow flowered *Horse Chestnuts*, &c. In the other direction, rounding the east end of the old Palm Stove, No. 15., we pass several interesting trees of another description. To the right is a fine *Woolly-fruited Maple* of North America (*Acer eriocarpum*): a little further, and more to the left, near a private walk leading to the residence of His Royal Highness the Duke of Cambridge, stands conspicuously a *Weeping Willow* (*Salix Babylonica*), derived from the original tree (now destroyed) at Napoleon's tomb, St. Helena. On the left of our walk are the *Red Maple* of the United States (*Acer rubrum*), the *Manna Ash* (*Fraxinus Ornus*), from which exudes the *Manna** of the shops, the *Glastonbury Thorn*, a variety of the common Thorn (*Cratægus oxyacantha*), of which the original was said to be a staff from the thorn used for crowning our Saviour, which Joseph of Arimathea planted at Glastonbury, when it immediately sent forth leaves and flowers. Be that as it may, this tree is remarkable for bearing foliage almost throughout the year, and flowers, if the season be mild, in winter as well as in spring. There is also a beautiful young tree of the *deciduous Cypress* of Mexico and the Southern United States (*Taxodium distichum*), which attains an enormous size, 90 feet in the girth of its trunk, in its native country, and a great age; the identical tree at Chapuliper, under which Montezuma was accustomed to sit previous to the conquest of Mexico, is yet living and known as the Cypress of Montezuma. Here are fine old *Celtises*, and the *Paper Birch* of North America (*Betula papyrifera*). Proceeding towards the entrance gate, we pass by the ruin of a stately *Cedar* (fig. 61.), of which the main portion was carried away by a gale in 1840, and many rare *Pines* from different countries in various stages of growth. Among them the *Deodar* ranks pre-eminent (*Cedrus Deodara*), a tree equal if not superior in beauty to the *Common Cedar*, and equally hardy, from the mountains of Northern India: our speci-

61

CEDAR.

* What the *Manna* of Scripture is will, perhaps, ever remain in obscurity. That it was miraculously produced, we have the authority of Holy Writ for asserting; but the substance might nevertheless be a natural one, and with which the early Eastern nations were familiar. Modern investigations have made known to us the fact, that an *esculent Lichen* (*Lecanora esculenta*) exists in the East, and is a common species in the Kirgise Steppes, and in general in Middle Asia. It is a granulated substance, existing on barren soil or in clefts of rocks, whence it is often washed down after sudden and violent showers of rain, so as to be collected in considerable quantity and used for food. The same species was found by Mr. Parrot in his journey to Ararat, where it is also eaten by the natives; and in some districts of Persia in 1828, it covered the ground to a depth of five or six inches in so short a period of time, that, according to the opinion of the people, "it had been rained down from heaven."

men, here situated, is among the very first reared in Europe, from seeds brought home and presented to the Garden by the Honourable Alexander Melville. As the gates of Solomon's Temple at Jerusalem, and of St. Peter's at Rome, are said to have been made of the *Cedar of Lebanon**, so it has been ascertained, and I believe on sure authority, that the gates of the Temple of Somnauth are constructed of the *Indian Cedar* or *Deodar*. *Abies Webbiana, Menziesii, Smithii, Douglasii,* the *Stone Pine*, which is the Pine of Claude Lorraine's Italian landscapes (*Pinus Pinea*); *P. Laricio* of Corsica, and the much rarer species *P. Coulteri, macrocarpa,* and *Sabiniana* from the Pacific side of North America, also find a place here.

After the inspection of these, the visitor will find himself near the gate on the green by which he had entered.

* Loudon, in his *Arboretum Britannicum*, a book of high repute of its kind, on the authority of Varennes de Feuille, states that the wood of the Cedar of Lebanon is not fragrant, and that a table Sir Joseph Banks had made of the Hillingdon Cedar was without scent, except that of common deal. But a tree, cut down in the woods of Kew in 1842, perfumed the atmosphere in every direction with its powerful odour, and retained it for twelve months, very much resembling that of *Cedar Pencil*; and I cannot but think that the Cedar pencil wood (no Cedar, but a *Juniper, Juniperus Bermudiana*), derives its incorrect name of *Cedar-wood* from the similarity of its scent, though not its aspect, to the *Cedar of Lebanon*.

INDEX.

THE END.

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