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ADDRESS

DELIVERED BEFORE THE

DELAWARE HORTICULTURAL SOCIETY,

1815

AT

WILMINGTON,

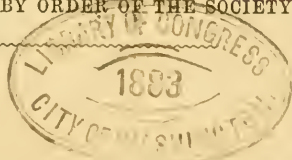
On the 24th of September, 1851.

Emerson

BY

G. EMERSON, M. D.

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PUBLISHED BY ORDER OF THE SOCIETY.  
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PHILADELPHIA:
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1851.

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WILMINGTON, *September 27th*, 1851.

DR. G. EMERSON:—

Dear Sir—It gives me pleasure in compliance with the request of the Delaware Horticultural Society, to forward to you the following minutes:—

At a special meeting of the Delaware Horticultural Society, held on the 27th inst., it was, on motion of Dr. J. F. Wilson, unanimously

Resolved—That the thanks of this Society be presented to Dr. G. Emerson, of Philadelphia, for his interesting and appropriate address delivered at the late exhibition.

On motion of John Gorgas it was unanimously

Resolved—That a committee of three be appointed to request a copy of the same for publication.

The President appointed John Gorgas, Edward Tatnall, Jr., and Dr. J. F. Wilson, on said committee.

On motion of E. Bringhurst,

Resolved—That the Corresponding Secretary be requested to furnish Dr. Emerson a copy of the foregoing resolutions.

With high regard, I am yours, &c.,

EDWARD TATNALL, JR., *Cor. Sec.*

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PHILADELPHIA, *September 30th*, 1851.

*Dear Sir*—I have received yours of the 27th inst., communicating the kind and complimentary resolutions which the Delaware Horticultural Society has seen good to pass in relation to the address lately delivered before its members. With the sincerest acknowledgments for such flattering tokens of their favor, and kind regards for your individual friendly expressions, I remain,

Very respectfully, yours, &c.,

G. EMERSON.

TO EDWARD TATNALL, Esq.,

*Cor. Sec. of the Delaware Horticultural Society.*



## A D D R E S S .

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LADIES AND GENTLEMEN:—

THE call recently made upon me to deliver an address at your annual exhibition, would have been declined, had I not felt that compliance with any wish emanating from citizens of my native State, had claims upon me paramount to all ordinary engagements. Since the arrival of the day fixed upon for the performance of my promise, I find that circumstances beyond my control have interfered to rob me of so much time, that it has been impossible to do full justice to any subject which I could desire to bring before you for your better entertainment and instruction.

In coming to Wilmington, I find myself surrounded by many of my oldest and best friends. Much of my life has been passed away from the paternal roof in the adjoining County of Kent, and lands with grander features than there or here exist have often attracted my attention and called forth my admiration. Still, with the fading first impressions created by distant prospects, I have never ceased to revert with heartfelt delight to the less pretending scenes among which I roved in boyhood. Amidst those scenes, one of the natural objects which has left the strongest impression upon my mind is the Liriodendron, or Tulip Poplar Tree, as it presents itself in the rich alluvial soils bordering our noble bay. Attaining there an elevation of sometimes more than two hundred feet, with a diameter of eight or nine feet, expanding its huge branches and luxuriant glossy foliage on every side, when studded in the spring with its rich-colored tulips, it presents a floral pyramid unrivalled for abundance and beauty in the whole arborea of nature. We hear of the extraordinary heights of trees in California and Oregon, and of the Mango and Banyan trees of the Indies, stretching themselves over roods of ground. But the claim for precedence which is here made for our poplar is based

upon stateliness and floral exuberance combined. Towering high above the common level of the country, with summits often crowned by the spacious nests of the eagle, in the absence of mountains, these giants of the forest forcibly impress the mind with the grandeur of nature!

The productions of the soil of Delaware would seem to make it a connecting link between its northern and southern sisters. About the middle of the State a rich botanical region exists, abounding in specimens of southern plants. In the vicinity of Dover, the mocking-bird has its farthest northern hibernation, remaining during the whole winter, to gladden the heart with its varied song.

The subjects legitimately claiming the attention of your society are those connected with flowers and fruits. How extensive the range presented, may be inferred from the very numerous books written and periodicals published relating to them. In the library of a horticultural society, where I chanced to be a few days since, I laid my hand accidentally upon a large work in two folio volumes, treating exclusively upon a species of rose which I had never heard of before. Where so many interesting topics invite, how difficult to concentrate attention upon a single one. Shall I first enter the beautiful parterre fascinating on all sides with its flowers of every hue, brilliancy and exquisite perfume? or pass into the vineyard or orchard, where luscious fruits are weighing down the vines and branches as if to excite one's compassion to relieve them of some of their weight? These divided affections for Flora and Pomona, bring to mind the picture by Sir Joshua Reynolds, representing the versatile Garrick beset by Tragedy and Comedy, each striving to draw him away exclusively to herself, whilst he is evincing the greatest bewilderment, as undecided which to follow. On the present occasion, laying aside all my earnest devotion to fruit culture and ordinary utilitarian predilections, I shall yield myself almost entirely to the consideration of objects which have manifestly been scattered over the creation with a view to its decoration. I propose to follow Flora into some of her more exclusive and aristocratic domains, and shall endeavor to lay before you interesting information relative to the achievements of her most favored votaries both abroad and on this side of the Atlantic.

Flowers clearly appertain to the poetical realm of our terrestrial home. By their beauty and fragrance they appeal to the senses and awaken sentiments, as music does by addressing the ear. A close relationship between music and flowers seems to have been recognized

at all times, and has been beautifully illustrated in the classic pages. In our own day, see the prima donna who has just entranced a multitude with her seraphic strains, as, crowned with the floral wreath, and almost borne down by the shower of bouquets, she gracefully makes her acknowledgments. What is this but a realization of the ancient fable of Euterpe, the myth presiding over music, always represented as crowned with flowers? Music and flowers seem commissioned for kindred purposes, their duties being to elevate the soul to higher perfections than exist here below, and to deck and cheer the paths of life that would otherwise be left so dreary. Flowers have a meaning and language of their own. Some of them are chosen to form the bouquet of the lover, others to compose a chaplet for the bride. They deck the banqueting tables of the festive, and add brilliancy to the saloons of the gay. But flowers are also appropriated to very different purposes, as when placed with holy reverence upon the shrine of a favorite saint, strewed in their freshness around the still beautiful form of the dead infant, or suspended in wreaths upon the tombs of those who "sleep the sleep that knows no waking." The Moravians adorn the graves of their dead relatives and friends by cultivating upon each a small patch of the mountain pink. Led upon a time by accident to one of their cemeteries thus simply decked with these humble flowers, my mind was most pleasingly impressed, for it seemed as if the presence of the fresh tokens of affectionate remembrance nurtured by the living, relieved the resting place of the dead from much of its ordinary gloom. Père la Chaise and Laurel Hill abound with flowers dedicated to the memories of the departed. In these celebrated cemeteries, however, those of more brilliant and varied hues are associated with "storied urn and animated bust." But even when accompanying the productions of high art, flowers in such places never fail to blend with sorrow some pleasing impressions.

Whilst flowers thus gladden the eye, regale the senses, refine the sentiments, and even tend to deprive the cup of grief of some of its bitterness—fruits may be regarded as the realizations of hopes promised in the bud—the rewards of confiding expectation, and often of long waiting.

I cannot withhold a passing tribute to the Fruit Department of this Society's exhibition, which I have examined with the greatest interest and advantage. The present excellent display is the more remarkable from the unusual character of the season. Never,



perhaps, within the memory of any one present, has there been a year in which early blights and latter droughts have contributed so much to diminish the fruits of the earth in this country, more especially in the Atlantic States. As naturally allied to this subject, I will take the liberty of inviting the attention of this Society, and of all lovers of fine fruit, to the beautiful and highly instructive work on American fruits, now in course of publication, under the direction of a native of Delaware, and once your fellow-townsmen, Dr. Wm. D. Brincklé. In addition to the admirable and truthful colored embellishments with which the book abounds, it contains the most valuable practical information, derived from long observation and the most enthusiastic devotion to fruit culture.

Horticulturists, especially those of Europe, are now devoting great attention to an extensive family of beautiful and most interesting plants, presenting characteristics which constitute them the greatest curiosities in the vegetable kingdom. Although by far the largest number and most conspicuous members of the tribe are natives of the western side of the Atlantic, still are we, North Americans, as yet acquainted with a very limited number of them. I refer to what are botanically termed epiphytes, plants of the orchid or air-plant family, endowed with the rare faculty of being able to live separated from earthy soil. Most of those under cultivation in Europe and in this country, are derived from the tropical parts of America, and hence they demand a high temperature, which during cool weather can only be maintained by artificial means. Thus, whilst their rarity makes specimens very costly, their culture entails much expense, and both circumstances combine—unfortunately for the many—to place the orchid-house beyond the reach of any but the more wealthy, a small proportion of whom possess taste and liberality sufficient to induce them to appropriate a part of their surplus means to such laudable purposes.

Placed in a genial temperature, with an atmosphere well fraught with moisture, all that these orchids require for their support is a block of wood, piece of rough bark, or rude basket filled with chips, moss, or fragments of charcoal. Of all the tenants of the hot-house, they would thus seem to be least exacting in their wants. Several of the conservatories in and near Philadelphia, contain collections of epiphytes, among which the Pitcher Plant and Butterfly Flower afford interesting specimens. The first named orchid, has attached to the ends of its leaves miniature pitchers, of such graceful forms,

as, had they been known to the ancients, might be suspected of furnishing the types of some of their most exquisitely modelled vessels. Each little pitcher has its well-fitted lid, that opens or closes as the vessel becomes full or empty. In the Island of Ceylon, where one variety of this plant, common to our collections—the *Nepenthes Distillatoria*—is found, the pitchers are supplied with water during the moist season, through distillation, as the name implies, and not from atmospheric deposition. When the dry season arrives, small ligaments attached to the lids contract, and the pitchers stand open, as if to invite the birds, which resort to them in great quantities, to satisfy their thirst.

The *Oncidium Papilio* has beautiful blossoms, perched, as it were, near the ends of long and leafless stems, which, especially when put in motion by the air, present the closest resemblance to some of the richest varieties of the beautiful papilio tribe. When the Butterfly plant was first introduced into England from Trinidad, its appearance in bloom at Chiswick Gardens created a great sensation. “Yet,” says a beautiful writer, “the *Oncidium* may be almost considered as the most commonplace of the wonderful mimicries in which this favorite tribe indulges itself. The works of the Creator are everywhere wonderful—his ways past finding out; but there are degrees of creative excellence; and it appears to us that among the most superlative of these, we are to rank the exquisite skill and prodigality of beauties lavished upon the orchids. It is ours yet to see that the orchis-garland is the most matchless production of all those floral rarities with which the love of the great Author of Nature has embellished our earth; and in nothing is this excellence of creation more wonderful than the mimicries of these extraordinary plants.”—(*Eclectic Review*.)

Though long described by European botanists, and by some in terms so enthusiastic as might be naturally supposed to bring them into general notice, these most curious and elegant productions of the vegetable world remained comparatively obscure until quite recently, when they were ushered into notoriety chiefly by Dr. Lindley, Mr. Bauer, and Mr. Bateman, in their several most interesting descriptive books and other publications. By these means the orchids suddenly became not only conspicuous but famous in Europe, and ships were sent out to distant lands to be specially freighted with specimens, the arrivals of which were anxiously attended by eager and wealthy amateurs. About ten years ago, as Mr. Bateman informs us, the

importation into England was immense. In addition to the spoil brought home by Mr. Gibson from the Nepaulese Hills, and which reached Chatsworth in the year 1837, Mr. Skinner poured into that country the richest treasures of the Barrancas of Guatemala, Mr. Cuming sent a profusion of the choicest air-plants from the Philippine Islands, and Mr. (now Sir Robert) Schomburgk contributed some exquisite species from the interior of Guiana. But these zealous British collectors were all outdone by M. Deschamps, an enterprising Frenchman, who, fitting out a vessel for the express purpose, loaded her at Vera Cruz entirely with orchids and cactuses, with which he arrived safely in England, where his novel horticultural cargo excited a great sensation. During the single year in which this importation was made, no less than three hundred different species of orchids were introduced into England, and up to the present time large importations are continually taking place. These come from the forests and mountain cliffs of Mexico, Brazil, and the dense jungles of India and Ceylon. Of this unworld-like tribe of plants, which twenty years ago was almost unknown, the present number of *species* actually to be found in English conservatories is above two thousand. Such a surprisingly rapid accumulation of species could not have been effected without the existence of an *orchido-mania*, during the height of which it was not unusual for a new specimen to bring one hundred guineas. In those regions of wealth, luxury and elegance, it was not long before the recherché orchids were brought to contribute their floral charms and richness of perfume on festival occasions. When suspended in drawing-rooms, their unfading beauties continue to furnish subjects of admiration sometimes for weeks together.

This orchido-fever or mania, has not yet broken out in America, although at every successive horticultural exhibition held in our large cities, the specimens are evidently becoming more and more numerous. They require properly constructed houses with artificial heat for their preservation and propagation, and these favorable circumstances demand a combination of elegant tastes, wealth, and liberality, by no means common.

An enthusiastic writer upon orchids, in describing one of the rich collections in England, speaks of looking down the fantastic vistas of teeming orchis-vegetation, displaying "vegetable diamonds, sapphires, emeralds, and rubies, all vital with odoriferous steams." Inviting you into the orchid conservatory, or "stove," as it is usually termed in the horticultural dialect of England, he shows you above your head

old stumps of trees all straggled over with wonderful parasites; cocoa-nut shells, casting forth now a feathery vegetation, a miniature copy, mayhap, of the splendid parental crown, flowers and stems, and serpentine roots of the most varied and outlandish aspects; beyond he points you to bundles of fagots rising from the low-spanned roof, ornamented with pendants of living green, and flowers of burnished gold. Oyster-shells are the curious receptacles of others, and, dangling within reach by a wire, display string after string of vegetable pearls. And beyond still the air is full of bits and stumps of wood, of seared and tortuous branches, each, and in endless profusion, pouring down such a flood of sweet odors, rejoicing in such gorgeous raiment of many colors, as would almost induce the belief that the fairy gardens of Eastern romance, with their transporting perfumes and jewel-bearing vegetation, were no dreams of imagination.

As we are not yet in the United States possessed of very extensive collections of orchids, I hope, from the novelty of the subject to most of you, that I shall not try your patience too much if I occupy a little more of your time and attention with descriptions of other peculiarities of this most interesting tribe of plants.

Among the flowers and foliage everywhere met with in our gardens, fields and forests, resemblances more or less striking, of the animal creation and even the works of man are to be often met with. As instances we may mention the Spider plant, the humble Monkshood, the common Dandelion, from the fancied resemblance of its leaves to the teeth of the king of beasts, the Uva Ursi or bear's tongue, the beautiful Passion flower, with its sacred symbols of the crucifixion, and others too numerous to mention on the present occasion. But in all these resemblances, the imitative tendency is feeble compared to that found in the orchis tribe, where it overleaps all common bounds, as the following descriptions culled from those given by Mr. Bateman, and the fascinating writer in the *Eclectic Review*, to whom we have just referred, will abundantly show.

Commencing with the vegetable birds, the flowers of the swan plant are among the most remarkable of these. For a long time there was but one specimen of these rare plants in England, which was at the orchid-house at Hackney. Recently it has become more common. In the hotter stoves there are now some of the most lovely of the *Cyanoches*. A beautiful species is the *Cyanoches Loddigesii*, from Surinam, and it was this plant which, on its arrival, struck botanists with astonishment at its most marvellous resemblance to the bird.



Behold, in this flower, the gracefully swelling bosom, the round contours of the bird finding their elegant representatives in the recurved sepals and petals; while the characteristic feature of the swan is presented in the delicate taper neck, which, with its mimic head, turns back with the proper sinuosity of pride, as if to plume the feathers. The *Cyanoches chlorocolon* bears flowers of larger dimensions, sometimes even measuring from five to eight inches in diameter, and exhaling a perfume the most delicious. But choicest of all others, the spotted swan plant demands attention. Here is a flower-bird with yellow wings, dotted over with brown spots, with a recurved neck, and a white crested head. But what are those organs projecting from its back? Can it be? a couple of expanded hands, with crooked fingers dipped in blood! It is even so. But only the pencil can do the flower justice; and then it would probably be thought that a little plastic art had aided the mimicry, however unjust the imputation. Next to the swans we must place the dove plants. The orchid well-known to the initiated as the *Peristeria elata*, has all the appearance of a beautiful dove descending, the wings wide expanded, the head stooping; in a word, just such a figure as the old masters depict in the scene where our Saviour comes from the water of John's baptism. In Panama, its native climate, it is regarded with completely superstitious reverence as a religious symbol. Besides these, there are the loveliest little birds mimicked even to the feathers, and groups of songsters on the wing. The orchids which imitate the parts of birds are without number.

Passing to the vegetable insects, we find among these the bee orchids, the fly and the spider orchids, with the most perfect imitations of dragon-flies, mosquitoes, &c.

In the animal flowers we find the imitative faculty displayed in equal strength, for there are, as Mr. Bateman tells us, resemblances to tigers, lynxes, leopards, bulls, rams, monkeys, and even to man himself.

In the catalogue of reptiles are found an endless variety of snakes, lizards, toads, and frogs. Of shells also there are many kinds. Then follows a mixed multitude of masks, cowls, hoods, caps and helmets; swords, spurs, crests, pikes, arrows and lances; whiskers, eyelashes, beards, bristles, tails, horns, and teeth; combs, slippers, trowels, buckets, pouches, and saddles. Nor is this mimicking propensity confined to the flowers alone, being equally conspicuous in their leaves and pseudo-bulbs, which have been likened to onions,



cucumbers, bamboos, and palms; tongues and mouse-tails; hooks, whips, and straps, swords and needles (Bateman). In one very remarkable mimicry, the leaves are, as it were, inscribed all over with Arabic characters.

In fact, there are no limits to the extravagances displayed by these plants, and it has been suggested, that should the caricaturist's pencil grow feeble, or his imagination flag, he might take with profit a few days' recreation among the orchids. As a specimen of the horrific, we may refer to the flowers of the *Oncidium pectorale*, which exhibits a ghastly representation of an armless, headless, half-skeleton, with the ribs and clavicles all gaunt and bare. Yet this is said to be greatly exceeded by that most revolting vegetable monstrosity the *Coryanthes macrantha*.

The odors emanating from many of the air-plant family are of the most delightful kind, without the least pungency, but on the contrary delicate, soothing, and never cloying. One modest looking specimen will exhale a verbena-like fragrance, another a rich cinnamon or other spicy odor, a third the refreshing perfume of the violet, a fourth the pleasant scent of the stock gillyflower, a fifth the fragrance of musk and honey most delicately commingled, and so on through the whole list of sweet smells. Then again, another class of orchids, with that whimsicality for which they are so remarkable, emit scents by no means agreeable, but on the contrary more repulsive than the commonest drugs or tainted and unpleasing odors.

It is a great recommendation to orchids that a well-selected collection will show plants in flower at all seasons of the year, and that, as before noticed, this inflorescence is often so persistent as to remain in perfection for several weeks, a characteristic which adds greatly to their value as elegant drawing-room ornaments.

The accumulated riches of the English conservatories, which may be faintly imagined from such descriptions, are as nothing when compared with the displays put forth in the native haunts of the orchids, so admirably depicted in the splendid work of Dr. Von Martius, descriptive of the travels of Spix and Martius in Brazil. "Mr. Theodore Hartwig, an emissary of the Horticultural Society to the floral kingdoms of Mexico and Guatemala, says, that in a forest of oaks three thousand feet above the level of the sea, not far from Zaguapan, in the former country, the trees might be said to groan under their weight. The scene was most beautiful, several species forming the most fantastical festoons, and hanging in graceful pend-

ants from the branches. Mr. Henchman declares, that in Demerara dense masses occur in situations which would defy all attempts at intrusion, and in the Spanish Main he saw the epiphyte commonly known as 'the spread eagle,' clasping enormous trees, and covering them literally from head to foot in its own extraordinary robes."

The air-plants to which botanists have given the name of *epiphytes*, and *epidendrons*, live on trees and rocks in a region above the common earth, where many of their orchid relations find humbler dwelling-places. For beauty as well as singularity of appearance, the epiphytes are greatly superior to the terrestrial orchids. In visiting our extreme southern States, I was exceedingly struck with the immense growth of long fleecy moss hanging from the boughs of all the trees, and clothing them to their extreme branches. It is entirely different from the hard and wiry moss found occasionally on trees in our latitude. Botanists call it the *Tillandsia Usneoides*, and although strictly a parasite, it has every appearance of a real rootless air-plant, gaining its subsistence exclusively from the ambient atmosphere, fraught with the genial moisture of a southern clime.

On some of the old aristocratic country places near Charleston, now abandoned as uninhabitable by white persons, in consequence of the poisonous malaria which gives rise to the deadly "country-fever," as it is called, avenues of majestic live-oaks exist amidst the surrounding desolation. These were planted, perhaps, a century and a half ago, since which time their boughs have raised themselves aloft and, interlacing, form magnificent gothic arches. A look down one of these, extending several hundred yards, draped and festooned with its gray and sombre hangings, exhibits a most interesting sight, the effect produced being of a decidedly mournful character. Never have I been so deeply and peculiarly impressed by anything appertaining to the vegetable kingdom, as by this abundant mossy drapery, shrouding all the trees of the extreme south growing within a certain distance of the sea, and from such a sight, well can I appreciate the feelings with which Mr. Hartwig gazed upon the forest oaks of Guatemala, groaning, as he expresses it, under their orchid burdens, disposed in graceful pendants from the branches, or hanging in beautiful and often fantastic festoons.

In my observation of epiphytes, there is one of their habits which has struck me as not only singular but suggestive of curious thoughts. I refer to the direction taken by their flowers, which, instead of being elevated upon stems like common flowers, usually hang downwards,

apparently from long trailing roots, as if conscious that those to whose senses they were designed to administer delight dwelt below them! The idea is not perhaps so preposterous as might at first be imagined, and I have doubts whether we are justified in denying to vegetable life all the privileges of intelligence! Do not plants often astonish us by the wonderful resources they display in providing for their security and welfare! To give an interesting instance: In the palm-house of Mr. Dundas, in Philadelphia, there is a fine specimen of the screw-pine, which, raising its straight trunk to a considerable height, sends out its fan-like or palm-like foliage in a magnificent spiral whirl that might, perhaps, furnish a model for an improved steamboat propeller. This tree, when small and low, and growing in its natural places, is so much under the protection of the higher trees around that it is enabled to maintain its erect position with no other assistance than its main roots. When, however, it gets so high as to be subjected to the power of the winds, it then lets down numerous small filaments or threads from its body, which, in time, reach the ground, penetrate like roots, and, growing to considerable size, contribute exactly that kind of support to the tree which shrouds do to the masts of a vessel. The screw-pine in Mr. Dundas's palm-house has a luxuriant growth and a wide-spread top. Very short filaments issue from its body a few feet above the ground; *but none of these descend into the soil*, because, being under complete shelter, and having, of course, no need of help to resist the prostrating power of winds, further support is unnecessary. Does not this example seem to show a capacity in this species of tree to comprehend its true position, and adapt itself to surrounding circumstances; in fact, a latent reasoning power or faculty, through the assistance of which it is enabled to deduce consequences justly from premises? There is surely something inherent in the tree, which, when the prostrating forces come to bear upon it, instructs it of its danger, so that it sets about using the means given it by nature for protection! On the other hand, when in no danger from prostrating forces, there is a faculty which recognizes this security and hinders the tree from uselessly employing its resources. Is not more exhibited here than the exertion of a mere instinctive impulse? But how can such a high privilege be in any degree allowed to plants? The facts stated, with numberless others that could be readily brought forward, would seem to show the propriety of doing so. The movements by which their intelligence is expressed may not be so rapid as those

of animals, although the sensitive plant responds so quickly to the gentlest touch or breath. However this question may be settled by psychologists, it must, I think, be admitted that, in regard to what relates to their ultimate safety and welfare, plants often come to more just conclusions than creatures taking the credit of possessing a monopoly of reason.

It remains for me to notice the crowning horticultural feat of this or any other day, namely, the raising from the seed and developing in perfection the great water-lily, called *Victoria Regia*, with a fine specimen of which you have been favored through the customary kindness of its successful cultivator. A native of Guiana, Bolivia, and other sultry parts of tropical America traversed by the rivers Amazon and Paranà, the natural habits of this superb aquatic demand for its full growth and floral development greater horticultural resources than any other plant has yet called for. From its pre-eminent beauty, great size, and rarity, it has been styled the "Queen of Flowers," and seldom, if ever, has any mere ornamental plant excited so much attention and laid its admirers under such heavy contributions.

It can only be raised in water of sufficient depth, and sends up stems from the bottom, each terminating in a circular leaf over six feet in diameter, and separate stems bearing superb double flowers of some fourteen to seventeen inches in width. Those who have not seen it may form some idea of the size and buoyancy of the leaf of the *Victoria Regia* when I tell them that I lately saw a lad, weighing over 50 lbs., stand upon one, which would probably have borne a still greater weight.

The *Victoria Regia* was first discovered in South America, about the year 1801, by Haenke, a German naturalist, who continued his travels to Australia, and, unfortunately, died at the Philippine Islands. The specimens of the water-lily which he left, with descriptions, have never been brought to light until quite recently. Had Haenke lived to reach home, he would, doubtless, have introduced it into notice long before the present time.

Almost the earliest published description of the *Victoria Regia* was given in 1832, when it was announced as having been found by another German botanist and traveler, M. Poeppig, in some little tributaries of the Amazon.

So early as 1828, D'Orbigny, a distinguished French naturalist, sent home from South America some specimens of the gigantic water-lily to the Museum of Natural History in Paris. In the account of



his "Travels in Tropical America," published in 1835, he states that, whilst descending the Paranà on the 3d of March, arriving at the junction of a small river, he saw a space more than a mile broad and nearly a mile long, covered with the large, round, floating leaves, each of which had a raised edge two inches high. Amid the expanse of foliage rose the broad flowers, upwards of a foot across, and either white, pink, or purple, always double, and diffusing a delicious odor. The fruit which succeeds these flowers he described as spherical, and half the size, when ripe, of the human head, full of roundish, farinaceous seeds, which the natives collect, roast, and eat, from whence its Spanish name of *Maïs del Agua*, or Water Maize. "I was never weary," says D'Orbigny, "of admiring this colossus of the vegetable kingdom, and reluctantly pursued my way to Corrientes, after collecting specimens of the flowers, fruits, and seeds."

The celebrated botanist, Sir Robert Schomburgk, found the plant in Guiana, in 1837, when exploring that country for the Royal Geographical Society of London; and it was he who conferred upon it the name of his Queen. It is right to observe that, though commonly called a Water Lily, the *Victoria Regia* does not belong to the Lily tribe, but to the family of *Nelumbiaceæ*, a natural order of exogenous plants, associated by some writers with the *Nymphœaceæ* or water lilies, which they very much resemble in appearance and habits. The best known species is the *Nelumbium Speciosum*, a magnificent aquatic plant, to be seen floating on the surface of the slow-moving rivers and streams of all the warmer parts of Asia, and also along the Nile. Its fleshy stems are eaten as food by the poorer classes in China, where, as well as in Hindostan, the flower is held in high esteem, and even dedicated by an idolatrous sect to one of its principal female divinities. But the *Nelumbium Speciosum* is found in great beauty quite at home, namely, about a mile south of the City of Philadelphia, in the eastern part of what is there called "The Neck."

The notices just referred to, first made the *Victoria Regia* extensively known in Europe, so far as this could be done by descriptions and delineations. It now only remained to introduce the plant itself, and this was partially effected through the aid of Mr. Bridges, an English naturalist of distinction. This gentleman states that in the summer of 1845, on a shooting excursion, whilst at Moxos, in Bolivia, he had the good fortune to come suddenly upon a beautiful pond, or rather small lake, embosomed in the forest, where, to his delight and astonishment he discovered the queen of aquatics, at least



fifty flowers of which were in view at one time. He says that Belzoni could not have felt more rapture at his Egyptian discoveries, than he did in beholding the beautiful and novel sight before him. He describes it as growing in water from four to six feet deep, and producing flowers which rapidly decay and give place to others. In parts of the lake where the plants were most numerous, the immense circular leaves almost covered the water, one leaf touching the other. He saw a beautiful aquatic bird walking with ease from leaf to leaf. The blossoms rose from six to eight inches above the surface of the water, expanding first in the evening when they are a pure white, changing finally, and by exposure to the sun, to a most beautiful pink or rose color. Hence flowers may be observed at the same time, partaking of every tinge between the two hues. The largest flowers he saw measured from ten inches to a foot in diameter, whilst the leaves were over six feet wide. Such was the enthusiasm with which this naturalist was inspired by the first sight of this superb aquatic, that it was difficult for him to restrain the impulse to dash into the water and secure it at once, although fully aware of the presence of those ferocious monsters by which it is generally attended, as if to guard its precincts—I mean the great cayman, or alligator, the terrors of which have been so powerfully described by the gifted pen of Humboldt.

This lily is not found in rivers where the water is subject to considerable rises and falls, but is to be met with in lakes and lagoons with little circulation or fluctuation. As the *Victoria Regia* has been found in the rivers Manoré, Berbice, and Paranà, the first and last named of which are separated at their mouths by  $35^{\circ}$  of longitude, it is, like most aquatics, a plant of wide distribution. Mr. Bridges is certainly entitled to the gratitude of botanists and amateur florists for having first succeeded in introducing the *Victoria Regia* into England, which he effected in 1846, by preserving the seeds in wet clay, enveloped in dried leaves. I have spoken of his success as partial, because, though some of the seeds forwarded by him to England grew, the plants from them never bore flowers. The seeds which gave plants that produced the first flowers, were sent to Kew Garden from South America by Doctors Hughes Rodie, and Luckie. They were put up in vials filled with pure water, by which means they reached their destination in complete preservation. And thus was the *Victoria Regia* at length brought first to its perfect development in Europe, under the auspices of the Duke of Devonshire,

at his garden at Chatsworth. Seed planted here on the 3d of August, showed the first flower, three months afterwards, namely, the 8th of November. This was justly considered a highly important horticultural event, and did not fail to produce a great sensation. Perfect success in the culture of this superb plant was soon afterwards attained at several other celebrated English Gardens.

The first attempt made in Europe to develop the flower of the *Victoria Regia*, ended as we have just stated, in disappointment. The seeds germinated and the leaves expanded, but no efflorescence took place. These abortive efforts led horticulturists to study more closely the circumstances under which the plant is found in its natural habitats. The oozy soil was prepared, the proper depth of water provided in the Aquarium, or artificial pool, and this was duly enclosed under glass so as to secure a tropical temperature. Still, the exotic refused to flower. At last it was suggested that the water required to be agitated, by which means the expanded leaves floating upon it would be refreshed and invigorated, just as breathing animals are when ventilated by currents of air. The necessary motion to the surface-water was readily imparted for the experiment, by the aid of a small water-wheel, turned by the stream supplying the Aquarium, and in due time efflorescence ensued. This was the last link to the chain of devices by which art sought to force this great natural curiosity into her domain. Behold now, half a century after her first discovery by Haenke, the Flower Queen, which during countless ages had bloomed only for the rude savage in lagoons, and almost inaccessible wilds, brought at last to display her effulgent beauties, and shed her exquisite fragrance in the courts and centres of highest civilization and refinement.

The horticultural triumph, of which I have attempted to give you a short description, as it has been recently achieved in Europe, with the aid of the science, skill, and wealth there so abundant, has been promptly repeated on this side of the Atlantic by Mr. Caleb Cope, President of the Philadelphia Horticultural Society, with whose company we are favored on the present occasion. When it is considered that in Europe, the aid of princely munificence has been called into requisition in obtaining the first successful developments of the *Victoria Regia* at Chatsworth, Kew, and Zion House, the horticultural feat accomplished by our tasteful and spirited fellow-citizen, must be the more highly appreciated. The éclat of Mr. Cope's achievement is only equalled by the kindness he has displayed, not only towards

his personal friends, but the public at large, to all of whom his superb conservatory has been freely opened. More than this, many Horticultural Exhibitions have, like the present, been supplied by him during the blooming period, with flowers and leaves of the *Victoria Regia*, which has greatly extended the gratification furnished by a sight so perfectly unique.

On the 21st of last March, Mr. Cope planted in seed-pans four seeds obtained from England, through the kindness of Sir Wm. J. Hooker. Three of these grew, and one of the plants was, on the 21st of May, transferred to a circular basin about twenty-five feet in diameter, enclosed in a glazed house erected expressly for the purpose. There it has been kept in water maintained at the tepid temperature of 75° to 85° Fahrenheit. The depth of water in the tank or basin is about two and a half feet, and the oozy soil at the bottom, into which the roots of the plant expands, is about the same depth. It is worthy of notice that the first leaves produced did not exhibit the turned-up edge, or salver-shape, which contributes such an uncommon appearance to the plant, until about twenty-four had grown. Ever since that period the leaves have been salvered as quickly as they expanded. The development of a leaf, on first raising to the surface of the water, presents a most curious sight, not easily described. Rolled into a body of a brownish color, and covered with thorny spines, it might readily be taken for some large species of sea-urchin. The under side of the leaves, as well as the long stems, by which the flowers and leaves seem anchored in the water, are thickly covered with thorns about three-quarters of an inch long. On the 21st of August, just five months from planting the seed, a flower was developed, and the success of the interesting enterprise thus fully crowned.

As yet Mr. Cope has brought forward only one of the three plants produced from the four seeds. But this has continued not only to keep his tank, large as it is, always covered by its immense leaves, some measuring six and a half feet in diameter—many of which have from time to time been removed and replaced by fresh ones—but also furnished two flowers a week since the first blooming. Some of these flowers have measured seventeen inches in diameter. The petals always open early in the evening, and partially close about midnight. During the daytime, therefore, the *Victoria Regia* is seldom seen in fullest splendor, unless when removed from the parent stem.

If the development of the leaves of the *Victoria Regia* present such a singular appearance, the successive movements or changes in the flower are not less extraordinary and far more beautiful.

The crimson bud, which for several days has been seen rising, at last reaches the surface and throws off its external investment in the evening, soon after which the flower petals suddenly unfold, the expanded blossom, like a mammoth magnolia, floating upon the surface of the water, decked in virgin white, and exhaling a powerful and peculiar fragrance which has been compared to the mingled odors of the pineapple and melon. On the morning of the second day another change is observed and the outer petals of the flower are found turned backward or reflexed, leaving a central portion of a conical shape surrounded by a range of petals, white on the outside, but red within. A slight tint of pink is discernible through the interstices of these petals, which increases as the day advances. In the evening, about five o'clock, the flower is seen to be again in active motion preparatory to another production. The white petals, which were reflexed in the early part of the day, now resume their original upright position, as if to escort their gay colored companions surrounding the central cone to the limpid surface below. After this the immaculate white of first bloom changes to gay and brilliant pink and rose colors. Finally, a third change ensues, marked by the spreading of the petals further backwards, so as to afford the enclosed fructifying organs liberty to expand. These are soon seen to rise, giving to the disk of the flower a peach-blossom hue, the stamens and pistils at the same time assuming a figure not unlike that of the old regal crown of England. On the third day the flower is nearly closed. All the petals seem suffused with a purplish pink; the coloring matter, which was originally only seen in the centre, having apparently penetrated the delicate tissues of the entire flower.

The leaves exhibited here do not belong to the plant which produced the magnificent flower before you, but were taken from a garden-tank in which Mr. Cope has brought forward the lily under glass, without the assistance of stove-heat. It is true this lily has not yet bloomed, but the fine development of leaves gives reason to believe that, with the aid of a warmer sun than they have in England, the *Victoria Regia* may be brought to perfection in this country, even without artificial heat. In order to give it every advantage, it will still be necessary to start the plants in seed-pans placed in hot-beds, or heated conservatories.



In concluding this brief account of the Victoria Regia, I may observe that to German and French scientific explorers of primeval forests is due the honor of first discovery and description, whilst to British activity and perseverance we are indebted for the introduction of this great floral prize into England, from whence it has been brought to our own country. Mr. Cope has succeeded in his first experiment in producing the Victoria Regia with larger leaves and flowers than any yet reported as having been raised in Europe. In his conservatory floats the Queen of Flowers in all her beauty, attended by her natural but strange-looking subjects, the orchids, suspended around in groups, and mingling their fragrance with her own. In fact, the whole scene presented in the lily-house is unique and highly impressive, well calculated to awaken poetical conceptions, among which it is easy to imagine a shrine consecrated to an oriental goddess, or grotto dedicated to water-nymphs, and presided over by Ægle, the fairest of the Naiades.

In concluding, I must congratulate the members of the Delaware Horticultural Society on the successful floral display made here to-day; and more especially the lady patronesses, whose zeal and assiduity have mainly contributed to the brilliant result. If there be significance in flowers, as exponents of the states of civilization and refinement—and who can doubt the truth of the test—your exhibition presents a most gratifying evidence of the high mental culture and good taste prevailing in this community, and to no one does such a conviction afford more pleasure than to myself.

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*Note.*—On the 7th of October Mr. Cope's lily had just expanded its twelfth flower, and the fortieth leaf reached the surface. The salvar edge, which first appeared with the twenty-fourth leaf, was much less marked, probably owing to the partially exhausted condition of the plant after such a luxuriant development of leaf and flower. For several weeks there were two flowers a week; and with each flower a new leaf. The plant has already accomplished wonders; nor do its labors yet seem ended. Two more flower-buds are visible, and under the genial influences by which it is surrounded, there would seem to be no reason why it should not continue to furnish many more blossoms.











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