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AN
ADDRESS

DELIVERED BEFORE THE

NEW-YORK HORTICULTURAL SOCIETY,

AT THEIR

ANNIVERSARY,

ON THE EIGHTH OF SEPTEMBER, 1829.

BY JOHN W. FRANCIS, M. D.

MEMBER OF THE SOCIETY; MEMBER OF THE LYCEUM OF NATURAL HISTORY,
NEW YORK; HONORARY MEMBER OF THE WERNERIAN NATURAL
HISTORY SOCIETY OF EDINBURGH, &c.

PUBLISHED AT THE REQUEST OF THE SOCIETY.

NEW-YORK,

PRINTED BY E. CONRAD,

1830.

ADDRESS

DELIVERED BEFORE THE

NEW-YORK HORTICULTURAL SOCIETY,

AT THEIR

ANNIVERSARY,

ON THE NIGHT OF SEPTEMBER, 1839.

BY JOHN W. FLEMING, M.D.

MEMBER OF THE SOCIETY; MEMBER OF THE BOARD OF AGRICULTURE,
NEW-YORK; MEMBER OF THE AMERICAN AGRICULTURAL
SOCIETY OF NEW-YORK, &c.

DELIVERED AT THE REQUEST OF THE SOCIETY.

NEW-YORK,

PRINTED BY J. C. COLEMAN,

1839.

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New-York, 30th Sept. 1829.

SIR,

At a stated meeting of the New-York Horticultural Society, held last evening, it was unanimously

"RESOLVED, That the thanks of the Society be presented to DR. JOHN W. FRANCIS, for the very able and interesting Address delivered before the Society and its friends, on the occasion of their late Anniversary—and that he be respectfully requested to furnish a copy of the same for publication."

It affords us great pleasure, Sir, to be the means of conveying to you this vote of thanks, and the request expressed in the above Resolution:— and we take this opportunity of presenting to you our individual acknowledgments for the gratification we received on that occasion.

JOHN P. PALMER,
ABRAHAM HALSEY, } Committee.
OLIVER M. LOWNDS,

To JOHN W. FRANCIS, M. D.

New-York, Oct. 5, 1829.

To JOHN P. PALMER, ABRAHAM HALSEY, and OLIVER M. LOWNDS.

GENTLEMEN,

I COMPLY with your request for the Publication of the Anniversary Discourse, delivered on the 8th ultimo. I only regret that other avocations prevent me from revising an Address hastily got up for the occasion. Be pleased to communicate to the Society my acknowledgments of the too flattering opinion they have expressed of its merits, and accept the assurances of my high consideration and respect.

JOHN W. FRANCIS.

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OF THE

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ADDRESS.

GENTLEMEN,

MEMBERS OF THE NEW-YORK HORTICULTURAL SOCIETY,

IN accepting the office of your anniversary orator, I feel that I have attempted to comply with your kind wishes, rather than consulted my ability to fulfil its duties; and when I consider the talent and attainments of those who have hitherto performed this task, I can only ask your indulgent criticism on the efforts of one who professes but a general acquaintance with the subjects to which this most useful institution is devoted.

The cultivation of the soil is the natural occupation of man, and almost all ages and countries rank agriculturists as their most numerous population: and where nations are so unwise as to seek in other countries for the radical means of subsistence, they must be content to be subjected to every fluctuation which the caprice or ambition of foreign powers may impose; their condition uncertain, their independence a mere name.

In our own happy country, no folly of our rulers, no madness of legislation can, I trust, possibly divert any considerable portion of our population from this their great and natural pursuit. Generations must have passed away, before even the necessary offices of commerce and manufactures can make any serious inroads upon this great basis of our nation's power. Is it not then the obvious dictate of good sense and sound wisdom, that the energy of freemen should mainly be directed to improve this mighty interest, and may we not fairly hope that the aid of government will be called in to strengthen this right arm of her resources? Let it be the pride then and glory of every American, to improve the inheritance transmitted to his keeping, and let each consider it his duty to add to its value by his

own efforts: so shall our posterity not blush to own their immediate sires.

The formation of societies for the cultivation and promotion of natural knowledge, is in a great degree of modern origin; and the success which has attended them is indubitable authority in their favor. Without referring to those learned institutions of the old world, the Royal Society of London, and the Royal Academy of France, with their respective branches more particularly devoted to agriculture and horticulture, whose labors have had so powerful and pervading an effect on those two great nations, the proceedings and acts of the Board of Agriculture are felt in the daily operations of the English farmer, and the present elevated condition of British Husbandry, is the best commentary on the wisdom of its establishment.

It is universally admitted that the Romans first introduced Gardening into Britain, but what may be denominated Modern British Gardening, is first recognized in the time of Henry the 8th. During the period of Charles the 2nd, we find that monarch employed Le Notre, the greatest gardener of his time, to arrange and plant the gardens of Greenwich and St. James. These gardens were after the style of Versailles, though less extensive and less magnificent.

Of the illustrious Evelyn, it may be said, that he was more than the Atticus of his time.

Intimately connected with the politics, the literature, and science of his age, he claims distinction in all. No more striking instance can be offered of the moral dignity and elevation of sentiment peculiar to this science, than is exemplified in the character of the renowned author of the Sylva, the introducer of numerous horticultural improvements into his native land. Born to affluence, and educated in all the learning of his day, he did not seek in the gaiety of the court, a release from the ennui of idleness, but found in the improvement of his mind, and in the culture of the soil, that pursuit which gave occupation to his energies, and conferred unmeasured and permanent advantage on his country. In the troubled scenes of civil commotion, he abstained from mixing in its tumults; adhering faithfully to those principles which coincided with his best judgment, he sought only occasions of healing the angry wounds inflicted in the contest; and to subserve the great interests of the state,

by watching its fluctuating councils; and, by pacific overtures, rendered an efficient benefit to his party; while those who entered personally into the conflict, only aggravated the spirit of opposition, and added to the expenditure of their country's blood and treasure.

"The youth who looks forward to an inheritance which he is under no temptation to increase, (says a writer on Evelyn,) will do well to bear the example of Evelyn in his mind, as containing nothing but what is imitable, and nothing but what is good. All persons, indeed, may find in his character something for imitation; but for an accomplished English gentleman, he is the perfect model."

"Neither to solicit public offices nor to shun them, but when they are conferred, to execute their duties diligently, conscientiously and fearlessly; to have no amusements but such as being laudable as well as innocent, are healthful alike for the mind and for the body; and in which, while the passing hour is beguiled, a store of delightful recollection is laid up: to be the liberal encourager of literature and the arts; to seek for true and permanent enjoyment by the practice of the household virtues—the only course by which it can be found: to enlarge the sphere of existence backward by means of learning throughout all time, and forward by means of faith through all eternity: behold the fair ideal of human happiness. All this was realized in the life of Evelyn."*

The patriotic feelings of the English, have induced that people to consider Evelyn as one of the most efficient founders of their navy. Certain it is, that since the publication of his *Sylva*, a greater degree of attention has been bestowed on the cultivation of her forest trees; and indeed English horticulture may be considered as having received its most effective impulse from his writings and example.

At the same period flourished the poet Cowley, the friend of Evelyn, and the enthusiastic admirer of nature. He was educated a physician, and thus early taught the secret virtues of plants and herbs; but he preferred the pursuits of Agriculture to the harrassing occupation of professional life. No English poet

* Quarterly Review, vol. xix. p. 54.

has celebrated with more kindred feeling the claims of a country retreat, and none of them have exhibited its purity and intellectual greatness with more striking effect. In all his writings, he constantly reverts to the charms of rural enjoyment; and his elegant prose is as redolent of the beauties of creation, as his Odes and Pindarics. In his discourse on Agriculture, he speaks of the utility of husbandry to a man's self—its necessity to all the rest of the world. This art can live, he remarks, without all others, but none without this. In speaking of the antiquity of the employment of the husbandman, he thus expresses himself. "The antiquity of his art is certainly not to be contested by any other. The three first men in the world were a gardener, a ploughman and a grazier; and if any man object that the second of these was a murderer, I desire he would consider that as soon as he was so, he quitted our profession and turned artisan. We were all born to this art, and taught by nature to nourish our bodies by the same earth out of which we were made, and to which we must return and pay at last for our subsistence."

In his Essay on the Garden, addressed to his friend Evelyn, he thus unfolds his thoughts: "I never had any other desire so strong and so like to covetousness, as that one which I have had always, that I might be master at last of a small house and a large garden."

"God the first garden made, and the first city, Cain.
 Oh blessed shades, O gentle cool retreat
 From all the immoderate heat,
 In which the frantic world does burn and sweat!
 This does the Lion star ambition's rage,
 This avarice, the Dog's star thirst assuage,
 Every where else their fatal power we see;
 They make and rule man's wretched destinie.
 They neither set nor disappear,
 But tyrannize o'er all the year,
 While we ne'er feel their flame or influence here.
 Nor does this happy place alone dispense
 Such various pleasures to the sense;
 Here health itself doth live,
 That salt of life which does to all a relish give;
 It's standing pleasure and intrinsic wealth,
 The body's virtue and the soul's good fortune, health."

Where does the wisdom and the power divine,
 In a more bright and sweet reflection shine ;
 Where do we finer streaks and colours see,
 Of the Creator's real poetrie,
 Than when we with attention look
 Upon the third day's volume of the book.
 If we could open and intend our eye,
 We all like Moses should espy
 E'en in a bush the radiant Deity.

During the classical age of Queen Anne, a taste for rural affairs became common, and Pope and Addison by their writings attempted to give a proper direction to the genius of their countrymen. Several inimitable papers in the *Spectator* are devoted to this subject. They indicate a very considerable attention to ornaments in rural affairs among the wealthy of that period.

The glories of Marlborough's wars had not deadened the feelings of the people to the calm pursuits of agriculture and gardening, and the palace of Blenheim indicates the taste of the nation in its manner of rewarding their triumphant hero.

Since this period, British gardening has augmented with the wealth and resources of that nation, and it may confidently be pronounced to have arrived to a more elevated condition than at any prior period. The county of Norfolk, in England, is a pertinent example of the effects of a judicious system of agriculture and horticulture, on the condition and wealth of a population. About seventy years ago, this county was nearly a sterile plot of ground, little favored by nature, and neglected by the hand of man. Now the admirable construction of her ploughs; the judicious rotation of the crops superseding the wasteful system termed fallowing; her improvements in the dairy; her excellent management of turnip crops; the use of the drill-roller, and the application of steam power to the labors of manual husbandry, are all the boast of every tourist who has visited that interesting portion of England. To no one is Great Britain so largely indebted for these improvements, and for this pre-eminence, as to Mr. Coke, of Norfolk, a name endeared to Americans.

This distinguished individual, gifted with princely wealth and possessions, has nobly devoted them to the amelioration of the soil; with what success, this county testifies. By the efforts of

agricultural science, it has become the most productive county of England, and parts rival even the vales of Taunton and Eversham.

From this county the Scottish husbandmen have borrowed many of their modes of cultivation, and a general spirit of improvement is manifesting itself in most of the districts of England. Mr. Coke is famous for his hospitality to our countrymen; and the first commoner of that nation boasts of the vote which he opposed in Parliament, against the impolitic attempts of the ministry to infringe the liberties of the American Colonies.

The southern portion of the British Isle abounds in gardens, villas, and parks, and the most convincing proofs that might be adduced of the zeal with which horticulture is cherished, are to be seen in the present state of their botanical and horticultural institutions. First among these are the Royal Gardens at Kew, which were founded in the time of George II. Numerous contributors have augmented this repository of nature's productions. Conspicuous among these patrons is the late Sir Joseph Banks. It may be pronounced the richest collection in England.

Inferior to this in splendor, but perhaps more various in its materials, is the Botanic Garden of Liverpool, founded by Roscoe, the once opulent merchant, the historian of the Medici, and the assiduous cultivator of Italian letters.

Chelsea, Oxford, Cambridge, Dublin and Edinburgh boast of similar institutions.

Under the auspices of the London Horticultural Society and its highly gifted President, Thomas Andrew Knight, British horticulture has advanced beyond the slow progress of time. It is glorious thus to see the splendid nobility and gentry of a great nation, directing in this channel their wealth and patronage. By the exertions of this enterprising confederacy of men of genius and practical sagacity, the fruits of every clime and soil; the rich pine apple; the luxuriant orange; the sweet flavored peach; the esculents of Eastern and Western India, are brought to the table of its opulent inhabitants, and the fairest products of Pomona ornamented with the graces of Flora, offered at the board of hospitality. From this Society, in conjunction with the Medico-Botanical Society of London, recently

organized under the Presidency of Dr. Maton, many improvements may be justly anticipated, both to the table of the Epicure, and to the resources of the tribe of Esculapius.

In the late Sir Joseph Banks, horticulture ever found a munificent patronage and well directed liberality. The chosen companion of the King, the acknowledged patron of Philosophy, was proud to bestow a portion of his wealth to improve the vegetable riches of his native soil.

La Belle France, the country of chivalry and romance, was distinguished at an early period for her taste and cultivation in horticulture; even so early as in the time of Charlemagne, who is probably the first to have contributed royal opulence to this purpose, in that nation. To this early date we refer the introduction into that country, of the best fruits; the cultivation of orchards and vineyards. Francis the First adopted the gardening of Italy, as a part of the decorations of the Palace of Fontainebleau. In the time of Louis XIV. the philosopher Evelyn visited the garden of Versailles. He speaks with enthusiasm of its elegance and taste.

In Le Notre, that munificent monarch found one whose style was as rich and gorgeous as his own, and the nation was delighted with the novelty and brilliancy of his designs: A diversity of taste has led to a diversity of decision as to the merits of these magnificent gardens. They are reported to have cost two hundred millions of francs.* The style of Le Notre is, however, still followed; and of a similar character, though less costly, we find the establishments of Meudon and Trianon.

Agricola, a Dutch writer, observes, that the sight of Versailles gave him a foretaste of Paradise; and Bradley remarks, Versailles is the sum of every thing that has been done in gardening.

Of the innumerable establishments for the promotion of physical science, which diversify, embellish, and enrich France, and more especially of those which are devoted to botanical and horticultural knowledge, the present does not offer a suitable occasion to speak: but I may be permitted yet to notice one institu-

* See that valuable work, the *Encyclopædia of Gardening*, by Loudon.

tion, which by universal consent, is the theme of admiration and praise to every one alive to the harmonies of nature. The garden of Plants founded by Louis XIII. is the noblest establishment of the kind in the world. Nothing even approaching to it has ever elsewhere been known. The spectator of this enchanted spot, will here find the eye delighted, and the imagination excited and gratified, while surveying the wonderful varieties and forms of beauty displayed by the vegetable products of every clime. Here he will feel himself almost transplanted as by enchantment, among the rich plains of India, and the heath covered wilds of Southern Africa; here he will find the resplendent blossoms of the Canna, the *Sterilia*, and the magnificent foliage of the Bignonia and the *Dombyia*. From nature's self he may turn to the ingenuity and devices of man, the minister of nature.

Sterilia
- eye

In inspecting the vegetable museum, he will here see Du Hamel's own specimens of his experiments on trees; the original herbarium of Tournefort and of Vaillant; the collections of the Michaux, and evidences without number, of the labors and scientific classifications of Jussieu, a true philosopher, the founder of the Ordines Naturales, a work which has divided the judgment of the profoundest investigators of the vegetable kingdom into two great parties, of Linneans and Anti-Linneans.

The experimental department of the garden will exhibit to him, an almost endless variety of display in the mode of training fruit trees, whether standards or espaliers. The resources and tenacity of vegetable life, will be unfolded to him by the most unexpected and complex forms of successful ingrafting. In the year 1816, I visited this magnificent temple of nature, and its vast treasures were rendered the more accessible to my examination, by the kindness and civility of the venerable Desfontaines, the Professor of Botany to the Royal Garden, whose reputation is fixed in the list of nature's expositors, by the publication of his *Flora Atlantica*. The pride of nativity could not but swell in my veins, when I was informed and saw with my own eyes, that pre-eminent among the magnificent and beautiful hardy exotics of the garden, shone our North American forest trees, the enduring *Platanus* and the fragrant *Magnolia*.

But this institution is devoted not only to the beauties of nature, but consecrated as the Temple of Science. In the walks of this garden Buffon composed his immortal History of Creation, portraying its character and depicting its beauties; forming the noblest chant to the glory of our Maker, in the illustration of his works. Would that this sublime genius had not sullied it by impurity, and debased it by ingratitude. What a striking example of the occasional obliquity of the human mind does he afford, who under the shade of the mightiest trees of the garden, the exotics of our own soil, could write that, in America, nature had be-littled her productions.

Perhaps it was characteristic of him who could behold with philosophic composure, his own marble statue, with an inscription that transgresses all bounds of modesty, and might by the most liberal, be deemed impious.

“*Majestati Naturæ par ingenium!*”

“A genius equal to the majesty of nature!”

In this devoted spot, the no less distinguished Cuvier, under the patronage of the late Emperor Napoleon, has given system and symmetry to the science of nature, and completed that structure of which Aristotle, under the direction of Alexander, laid the corner-stone.

In Italy, the Medici are distinguished as the revivors of gardening, as well as of literature and the fine arts. From their example it received an impulse, which is visible in every part of that delightful country. The prodigality of nature has here been such, as to lessen the necessity of exertion on the part of these degenerate descendants of the Romans; and we do not recognize among them, an elevated science in their horticulture and husbandry.

The gardens of Lombardy boast the most luxuriant vegetation in Europe. The ducal garden at Florence, and the villa of Rome, are objects of curiosity to every traveller.

In this land of taste and song, of Dante and Rossini, where both the severer and the polite branches of knowledge have been most profitably cultivated by the gentler sex, one of the most elaborate works on the philosophy of nature, the vegetable

statistics of Dr. Hales has been improved and illustrated by the accomplished lady Signora Maria Angela Ardinghelli.

Our Dutch forefathers, in the land of their birth, were no less devoted to the elegant villa than to the pursuits of wealth, and few of their opulent merchants, but possessed their garden on the banks of some one of the numerous canals of that interesting country. Indeed, prior to the cultivation of horticulture in England, we find that Holland supplied London with her best esculent plants, and the various choice productions of the Kitchen Garden.

The Botanic Garden at Leyden is an object of peculiar interest, from its early establishment and its venerable age; and above all, from its connection with the name of the illustrious Boerhaave, the ornament of the medical profession and of human nature. Here, after the fatigue of public instruction and professional avocation, he recreated in the philosophy of nature. I have often seen the good old man, before the morning dawn, says his beloved disciple, the Baron Von Haller, perambulating about the garden in his wooden slippers, that he might more immediately superintend the culture of plants, and speculate on their flowers and fruits.

In Holland, says Sir William Temple, "gardening has been the common favorite of public and private men; a pleasure of the greatest, and a care of the meanest; and indeed an employment and a profession, for which no man there is too high or too low." We may add, that their labors are chiefly subservient to practical and economical purposes; yet not so as to neglect the graces and elegancies of the art among the more opulent.

Such then we find to be the results of associate labor and continuous exertions among those nations, who deem that the earth is to be cultivated to bring forth its treasures, and that in conformity to the highest and most imperative ordinance of heaven, the toils of the husbandman are the offering which must be tendered at the altar of Pomona.

Moreover, the history of our species demonstrate the close connection between the arts of husbandry, and the condition of our social state. "The mines of a nation," says Franklin, "are but shovel deep." The plough is the pioneer of civilization, and until nations have arrived at this stage of their career,

they are justly pronounced barbarous ; and wherever this great agricultural instrument has been introduced among an ingenious people, it has led to the noblest triumphs of our species, the arts and sciences, and all the glorious offspring of genius.

Prima Ceres unco terram dimovet aratro :

Prima dedit leges.

Much has been said of the eminent cultivation which our art has received among the Chinese, and it has been contended by distinguished authority, that agriculture among them has surpassed the maximum of their civilization. This opinion has lately been advanced by our eminent countryman, Mr. Madison, but I apprehend that the accounts we have received are exaggerated : no science requiring the aid of genius could possibly flourish among so mediocre a people ; and despotism never yet admitted that degree of effort of the mind which agriculture demands of her disciples.

A late accurate observer and eye-witness, Dr. Livingston, of Macao, in his paper on the state of Chinese horticulture and agriculture, furnishes us the best reasons for discrediting the representations we have generally had on this subject. According to Dr. Livingston, it may well be doubted whether agriculture ought to be considered as holding among the Chinese the rank of a science, and Chinese horticulture may be said to be in a state precisely similar to that of their agriculture. Among other facts which warrant our assertion, the following may be enumerated. Potatoes and cabbage have been cultivated in the neighbourhood of Macao for upwards of half a century, and although highly profitable and productive, yet the method of growing them has not reached Canton, perhaps not even extended five miles. Their plough is without a coulter, and nothing like regular tillage is ever attempted ; and for horticultural purposes, the Chinese may be said rather to nourish the plant than the soil.

Let us cast a glance at Spanish agriculture and gardening. How inconsiderable have been the efforts of the Spanish nation in the promotion of rural economy, since the time of Herrera, whose work on Gardens, one of the few productions on this branch of domestic economy, appeared as early as in the begin-

ning of the seventeenth century. The agriculture of Spain is an unprofitable theme. With a climate the most auspicious, and a soil naturally fertile, abounding in fruits the most numerous and grateful of any other European country, her inhabitants yield in the productions of the field, to nations less favored by nature, but more disposed to avail themselves of her advantages. The onion and the garlic are indeed in common use, but it would be as absurd to infer a sound state of horticulture from this circumstance, as that the art was prevalent among the Egyptians, because these builders of pyramids expended more than one thousand talents to provide their artificers with radishes, garlic and onions, during the execution of one of these stupendous fabrics. Culinary herbs and roots are scarcely attended to in Spain: and the means of providing that available resource in trial and danger, the planting of timber, is scarcely known. Goaded by priestcraft, and cursed by legitimacy, she is to be enumerated among those nations upon whom kind Providence has bestowed his most munificent gifts in vain.

Turn we from ancient and venerable Europe, to the fresh and verdant fields and ever-during forests of America. What accession has been made to the treasures of the vegetable and mineral kingdoms, what resources of the forests by the discovery of the new world, we can only in part conjecture. The extensive and well directed labors of Humboldt and Bonpland, give us some idea of the latent stores of nature; and an inference may be made, when we are told that the number of vegetable species collected in Brazil, and now in the hands of European botanists, is estimated at 14,000, of which number, not more than 500 were known at the commencement of the present century. We have good reasons to conclude that the North has not withheld her proportion.

Our demonstrative proofs may be found by an examination of the Floras of Pursh, of Bigelow, of Torrey, of Muhlenburgh, of Barton, of Elliot and of Nuttall, with the species *Plantarum* of Linnæus.

The colonial condition of this country prior to the revolution, was little favorable to the promotion of agriculture, or the cultivation of the arts. Accustomed to look up to the mother country as the seat of science, and the arbiter of her destiny as well as for protection, the provident arts were neglected, and indeed

England could scarcely be supposed desirous of encouraging pursuits which would render her colonies less dependent. Nevertheless, we find that at even an early day, France, Spain, Holland, and England, sent out to this country men of science, to explore the vegetable and mineral riches of the Americas. The names of La Hontan, Herrera, Hennipen, Clavigero, Clayton, Catesby, the elder Michaux, Vanderdonk, Kalm, Wangenheim, Pownall, Schoepf, Coxe, Bannister, will at once occur.

The testimony of these able and enlightened writers, is most respectful to the variety and value of the productions of America, and amply vindicates the equality of the Western to the Eastern hemisphere. It was the good fortune of many of these eminent travellers, to find in their journeyings, kindred spirits, with souls like their own, alive to the wild and novel scenes of nature; who looked upon the objects which surrounded them, not merely as matters of curiosity, but of taste, of benefit to the arts culinary and remedial, of service in rural affairs and domestic economy. Hence to investigation of properties, the practicability of foreign naturalization became a subject of great consideration. To facilitate researches and inquiries of this kind, who could more advantageously be consulted than Mitchell, Clayton, Jefferson, and Walter, of Virginia; Garden, of South Carolina; Boardsley, of Maryland; Logan, Marshall, Bartram, Heckewelder, and Rush, of Pennsylvania; Colden and Livingston, of New-York; Humphreys, of Connecticut; Holyoke and Cutler, of Massachusetts, and Belknap, of New-Hampshire.

In this reciprocity of intellectual pursuits, we find much to illustrate the history of the tobacco, the cotton plant, the sugar cane, the indigo, and many of our most efficient medicinal remedies derived from the vegetable kingdom. See further, the catalogue of plants which may be useful in America, drawn up by Ellis, the agent for West Florida, but whose services are, perhaps, better known to us, by his discovery of the art of preserving seeds during long voyages. These practical philosophers seem, without the lights of modern political economy, to have well understood, that the strength of a people mainly depended upon their agriculture, and that the introduction of but a single grain or plant, as the rice of Carolina, or the turnip of Norfolk, will sometimes totally change the face and condition of a country. There is a large amount of information on these matters

to be derived from the Linnean correspondence lately published by Sir James Edward Smith. The zeal of the colonies to improve their natural advantages, was equally rare and effective.

Dr. Garden, of South Carolina, tells Ellis in his letter, dated May, 1757: "at this time we certainly send £150,000 sterling value of indigo to Britain, and we take the manufactures of Britain for every farthing of it."*

An arithmetical and geographical distribution has been made of vegetables: the total number of species of plants known, or believed to exist, amounts to about 44,000; 38,000 of which have been described according to Humboldt and Brown; 7,000 of these belong to Europe. In temperate America in both hemispheres, 4,000; in equinoctial America, 13,000; of these 17,000, there are probably described about 3,500. What a field of inquiry does this present to our ingenious countrymen, and to the lover of philosophy every where? We need not marvel that Linnæus was desirous of visiting America.

Catesby, in 1767, observed that a small spot of land in America, within less than half a century, furnished England with a greater variety of trees, than had been procured from all other parts of the world, for more than a thousand years past. How far there is reason for America to boast of her forests, we may learn from Michaux. "It should be remarked," says the younger Michaux, "that the species of large trees are much more numerous in North America, than in Europe. In the United States there are more than one hundred and forty species that exceed thirty feet in height, all of which I have examined and described: in France, there are but thirty that attain to this size, of which eighteen enter into the composition of the forest, and seven only are employed in building."

A late English traveller, in his journey through the Western States, remarks on Kentucky; "the scenery is peculiarly fine, with attendant cultivation. Here the trees attain an altitude and a size unknown in Europe." In short, every additional information we derive from the researches and enterprise of enlightened adventurers, gives us additional proofs of the extraordinary natural riches of our vegetable world. Mr. David

* Linnean Correspondence, vol. I. p. 403.

Douglass, a practical botanist, who but very recently returned from an exploratory tour to the West Coast of North America, has communicated to the Horticultural Society of London, riches hitherto unknown in the products of the vegetable kingdom. Among them we find two new species of pine, of more gigantic dimensions than any hitherto described in Europe or America. One species (*Pinus Douglasii*) grows to the height of two hundred and thirty feet, and is upwards of fifty feet in circumference at its base. It is stated to have a rough corky bark, from one inch to twelve inches thick. The leaves resemble those of the spruce, and the cones are small. The timber is heavy and of good quality. It was found growing on the banks of the Columbia, where it forms extensive forests, extending from the shores of the Pacific to the Stony Mountains. The other species (*Pinus Lambertiana*) was discovered in Northern California, where it is dispersed over large tracts of country. It is a most majestic tree. One specimen, which in consequence of its having blown down, Mr. Douglass was enabled to measure, was two hundred and fifteen feet in length, fifty-seven feet nine inches in circumference at three feet from the root, and seventeen feet five inches at one hundred and thirty-four feet. It is thought to be the largest mass of timber ever measured by man; and yet some of the growing specimens of the same pine were evidently of greater elevation. A singular property of this tree is, that when the timber is partly burned, the turpentine looses its peculiar flavour, and assumes a sweetish taste. It is used by the natives as a substitute for sugar.*

A people so enlightened, scattered over a territory so widely extended, diversified by such great variety both in soil and climate, would naturally turn their attention to the augmentation of the native resources of the country, to the products of the soil and their own better accommodation. To these circumstances we may attribute the origin of our numerous agricultural societies. The earliest association devoted to this express object, was the Agricultural Society of Pennsylvania, founded in 1785. This has proved the most successful institution of the kind in the United States, and has had great influence in

* Library of Useful Knowledge, vol. ii.

ameliorating the condition of husbandry in our sister commonwealth.

The introduction of plaister of Paris, which has had a most important and decided effect on the agriculture of America, under the direction of Judge Peters, is owing to this society. Let those who would distinctly learn the extent of obligation by this innovation, read the Essay of this learned Judge and practical farmer. While I bear my feeble testimony to the value of the services of the Pennsylvania Society, and look into their printed records for the materials of sound georgical science from the experienced Cooper, Mease, Holcombe, Haines, Pickering, and others; of Judge Peters, I may be permitted to take a passing notice. Arriving at adolescence during the troublesome period of the revolution, he embarked in it with characteristic zeal and intrepidity. On the termination of that momentous struggle, he commenced the study of the science of the law, and soon became so distinguished a member of the bar, that he was elevated at an early age to a seat on the bench of the Supreme Court. The intervals of a laborious profession, he devoted to the cultivation of that science, in honor of which we this day convene. To no individual is agriculture more indebted than to this distinguished man, and the volumes of the *Agricultural Transactions of Pennsylvania*, contain the evidences of his devotion and care. Long may his memory continue to be honored among us, and may his example stimulate others to similar efforts in the cultivation of this noble science.

The Agricultural Society of Berkshire is conspicuous among these establishments. Instituted by the public spirit and foresight of the venerable Elkanah Watson, it has become noted throughout our states, for the wisdom and success of its operations. In the ancient and patriotic state of Virginia, the Albemarle Agricultural Society boasts as its active president and most efficient member, the former chief magistrate of our nation, the illustrious Madison.

Of the vital importance of Agriculture and Horticulture, the Legislature of the State of New-York has always been duly sensible. At an early period, the members of that honorable body formed themselves into a society for the promotion of those branches of physical knowledge; and at least, this good has flowed from their zeal, that our state has been gradually

stimulated to a degree of exertion and patronage in favor of these pursuits, greater than that of any other member of the confederacy.

All our Governors since the revolution, from the patriotic George Clinton to his enlightened relative, have in their communications to our state councils, recommended this great interest to their protection. "As agriculture is the source of our subsistence, (says the late De Witt Clinton, in his Inaugural Speech as Governor of New-York,) the basis of our strength, and the foundation of our prosperity, it is pleasing to observe the public attention awakened to its importance, and associations springing up in several counties, to cherish its interests." Again he observes, "this important pursuit is the foundation of wealth, power and prosperity: it requires the energies of the mind, as well as the powers of the body: it demands the light of science to guide its progress, and the munificence of government to accelerate its movements; to extend its usefulness, and to diffuse its blessings."

Alive to these views, a Society for the promotion of Agriculture and the Useful Arts, was organized by our state authorities in 1791, and no one can read the memorials of their acts and proceedings, without feeling the obligation this state owes to the good sense and practical sagacity of the members of this early association, Rutherford, L'Hommedieu, Jones, De Witt, Kent, and the late Chancellor Livingston.

At the earnest suggestion of the late Governor Clinton, an act was passed by the Legislature of New-York, in 1819, for the institution of a Board of Agriculture, and the sum of \$10,000 appropriated annually for six years, to further its various objects in the different counties of the state.

Of the peculiar merits of the Transactions of the Agricultural Board, let the learned and skilful in georgical science speak: But wherever agriculture is appreciated as an art, or understood as a science, the labors of Armstrong, Buel, Dewitt, Bradley, Brown, Van Rensselaer and Featherstonhaugh, will be recognized, and add to that spirit of emulation which is indispensable to the cultivation of rural affairs. "If the county of Schoharie alone," says E. Watson, "had received all this bounty, it would have fully justified the wisdom of our councils."

To render this hasty sketch of the progress of rural affairs less imperfect, it would become necessary to take some notice of the establishment of botanical and other horticultural institutions in this country; of the gardens of Parmentier, Prince, and others; but opportunity does not allow us at this time.

In common with all lovers of nature, we must regret the destruction of the Garden at Charleston, the earliest in these States, and formed by the Elder Michaux: The Botanical Garden at Kingsess was long the theme of praise, and is still the resort of philosophy. This establishment was first carried into effect by the self-taught naturalist, John Bartram. Here in a delightful situation, he brought together a large collection of American plants and exotics, and by extensive travelling through the country from Canada to Florida, added to their number. So successful a botanist did he become, that Linnæus in one of his letters, speaks of him as the greatest natural botanist in the world.

He maintained an extensive correspondence with eminent men, both in his native country and abroad, and Gronovius and Kalm, Hans Sloane and Linnæus, were instructed by his discoveries. Subsequently the garden came under the superintendence of his son William, extensively known by his Travels, who seems to have inherited the unwearied zeal and vigorous capacity of his father, for the sublime studies of nature. In 1801, the former distinguished President* of this Society, instituted by individual effort, an extensive Botanic Garden in the vicinity of this city, which was purchased by the state in 1810. Flourishing under its founder, it perished under the neglect of the public. It is not for me to speak of the disgrace which the state sustains by its failure in this enterprise.

The New-York Horticultural Society, though recently instituted, has not been without its profitable results. The products of our gardens, and the richness of our markets, indicate its salutary effects; which, I trust, are the harbingers of still more valuable and important advantages. It must be gratifying to those who have so assiduously labored in the cause, that the services of this society have been placed in so favorable a light,

* Dr. David Hosack.

by the President* of a kindred institution in the western part of this state. Indeed, this day's exhibition has regaled our senses with richer gifts than have been presented to us on any former occasion.

This city is most happily situated for the purposes to which this society is devoted. Open in its intercourse to every part of the globe, it receives in its capacious bosom, the tribute of every climate and soil; and, under proper regulations, this institution may be the means of rendering the most ample returns. Moreover, by a proper understanding with our sister states, a profitable interchange may be established with every part of our country, and above all, the different counties of our state may be made to partake in all the rich variety of our natural and artificial culture. Already has one of our western counties imitated our example, and borne testimony to our success. May the example spread.—This Society will not withhold its countenance, and whatever aid may lie within its power.

It will not, perhaps, be deemed foreign to the objects of this discourse, to suggest to the proper authorities, the propriety of establishing in the vicinity of this city, or in whatever place may be deemed most appropriate, an institution for the promotion of Agriculture, in a mode somewhat analogous to that of the Military Academy at West Point. An experimental farm, with a school for instruction in the various branches of preliminary education and agriculture, the teachers paid by the state, the student at liberty either to make compensation by labor on the farm, or by pecuniary remuneration for the expenses of his living; to each county the privilege afforded of sending a pupil for a certain number of years, and in proportion to its representation in the house of Assembly, would probably be the best means of furnishing to each portion and section of the state, every improvement which either philosophy or experience might contribute to this science. How far the interference of this society in favor of such a project, might aid in its accomplishment, or whether indeed the suggestion is worthy of their consideration, I leave to the determination of those who possess a more intimate and practical acquaintance with

* Myron Holley, Esq.

these affairs. "The art of agriculture, (says Sir John Sinclair,) can never be brought to its highest degree of perfection, or established on rational and unerring principles, unless by means of experiments accurately tried, and properly persevered in. The ardent inquirer has too long been obliged to rely on vague opinions and assertions, which have not been warranted by sufficient authority. It is full time, therefore, by the establishment of experimental farms, under the sanction, and at the expense of government, or by enabling the Board of Agriculture to grant adequate premiums to deserving persons for new discoveries, to bring the art to as great perfection as possible, by ascertaining the principles on which it ought to be conducted."

Whether the New-York Horticultural Society will be content in the present sphere of its usefulness, a usefulness admitted by the unanimous approbation of our citizens, and lauded by the soundest farmers of our country, depends, as all future operations must do, upon the available means it may command, and the energy and cordial co-operation of its members. In a wider sphere, objects of no less consideration, and, perhaps, of greater value, might justly demand a portion of its care, and the employment of its resources.

Of the many subjects deserving particular inquiry, conspicuous among all others, would be a greater attention to trees, the ornament and defence of our nation :

Decus et tutamen.

"With the tree," says Pliny, "we plough the ocean and the land, and construct our dwellings."

Neither the federal government nor the several states, have reserved forests. The effect is already very sensibly felt in the large cities, where the complaint is every year becoming more serious, not only on account of the excessive dearness of fuel, but for the scarcity of timber. Even now inferior wood is frequently substituted for the white oak; and the live oak, so highly esteemed in ship-building, will soon become extinct upon the lands of Georgia.

Several admirable papers have been published on the best means of cultivating and preserving our fruit trees, by those of

our countrymen who were most competent, from practical knowledge on the subject. The venerable Thacher has enriched this department of horticultural science with a sound volume, entitled the *Orchardist*. Among American physicians, Dr. Thacher ranks high, not only by his labors in the profession, but by various efforts in the departments of natural science. In his *Military Journal of American Independence*, his patriotism and his fidelity to truth are equally evident. But it is more pertinent to our present purpose to observe, that his *Orchardist* may be consulted by American farmers with advantage, and that by his recent work on *Bees*, he has evinced a degree of observation, which adds to his reputation as an admirer of nature. May I be permitted to add, that my own personal acquaintance with this exemplary individual, corresponds with the opinion I had formed of his character, and that he unites to the utmost urbanity of demeanour, the most valuable qualifications in his profession. Mr. Coxe, of New-Jersey, in his *Treatise on Fruit Trees*, has displayed a research which gives his labors a value not possessed by those of Forsyth; and several reprints in this country, of the *Agricultural Chemistry* of Sir Humphrey Davy, demonstrate that the philosophy of agriculture has become a study of deep interest to our American farmers.

On the cultivation of the silk, a distinguished member of this society, Dr. Pascalis, has lately favored us with the first portion of a treatise of great excellence, on the cultivation of the *Mulberry Tree*. Of the redeeming powers which this nation possesses in the consequences which must ensue from this culture, let the statesman and the political economist speak. Our foreign trade in silk costs this nation annually, fourteen millions of dollars. In the opinion of some of our most capable judges, the culture of silk might become a subject of great importance among us, and thus the fair daughters of our land be decorated only in native charms; for American beauty needs not the aid of foreign ornament. Within the past week we have been informed, that at a late meeting of the *Agricultural Society of Ohio*, beautiful specimens of silk, the growth and manufacture of that state, were exhibited.*

* See further, the able *Essays on American Silk*, and the best means of rendering it a source of individual and national wealth, with *Directions to*

The cultivation of the vine is also here noticed, because the feasibility of the measure is most readily admitted, by those who know most on the subject. More than fifty years ago, a judicious practical observer, urged its practicability upon the attention of this state, as one of peculiar importance, and entirely within their power. But without a longer enumeration, I will briefly add, that a philosophical inquiry might well be instituted into the expediency of reviving the cultivation of indigo, and the greater security to life and health, in deriving this article from the dry rather than from the wet leaf.

In the culture of cotton and the sugar cane, long time as both these staples have occupied our attention, each challenges greater care and more correct principles. The invention of the cotton gin, for separating the seed from the cotton, and the application of improved machinery to the manufacture of the raw material, have given to this article, its present value and importance: they are the great agents by which all the wonders of the cotton cultivation in the United States have been effected. In 1789, a member of the House of Representatives of the United States, from South Carolina, stated, that the people of the Southern States *intended* to cultivate cotton; and added, if good seed could be procured, he hoped they might succeed. In 1817, the cotton exported amounted to 86,649,328 pounds. If Professor Olmsted's late experiments on cotton seed shall be proved to be correct, we have still further inducements held out to us. We have good reason to believe that South Carolina alone may furnish three millions of bushels of cotton seed, which will command nearly a million of dollars for the manufacture of oil, when the principle of its manipulation shall be fully established. The nature, composition, and analysis of our soils, offers much for the talents of the most skilful. Dr. Macneven has already in part performed this service: it would be well for agriculture, that others would imitate his example, and rival his efforts.

Farmers for raising Silk Worms. By John D'Homerque, Silk Manufacturer, and Peter Stephen Duponceau, 8vo. published since the delivery of this Discourse. See also the excellent papers of Dr. Pascalis, which have lately appeared, and the elaborate Document of Dr. Mease.

In an augmented sphere of action, this society would be obligated to throw light on those intricate subjects, the diseases of vegetable life and of domestic animals. Here is a vast and comparatively unexplored field, which if properly investigated, would give to the husbandman, a triumph for his toils, which he despairs of ever possessing in the present condition of our knowledge. The agriculturist who stocks his farm with foreign breeds, or cultivates our domestic animals with proper solicitude, would derive results from studies connected with the economy of animals and their disorders, and the comparative illustrations adduced from vegetable life, that could not fail to secure the most desirable results. We have reason to suppose that these pursuits were cherished with special regard in the early state of husbandry and rural economy.

The contested points concerning seedlings and ingraftings, demand our severest scrutiny. Mr. Knight's inferences, that those fruit trees which have for more than a century been propagated by ingrafting, and not from seeds, are liable to canker, and are not worth cultivation, have recently been ascertained to be too well founded. The golden pippin is fast wearing out, and the winter pears of England, have nearly disappeared. But fortunately, they have lately procured from our country, by means of our late President,* the seckle Pear, already of extensive growth among them, a fruit which they pronounce of excellent flavor. I saw that the Plane trees (*American platanus occidentalis*) in the gardens of Chelsea, Oxford and Cambridge, were all of them simultaneously in a state of decay, though they had flourished in these respective places for a long series of years. The conservators of those gardens, with all their philosophy, were unable to explain the cause. Do the products of grafting die with the parent stock? Miller long ago observed, that herbaceous plants propagated by cuttings, became sterile in a few years. Are there disorders of an epidemical and hereditary nature among trees and vegetables? What is the cause of the calamity which has lately befallen the venerable elm both in this country and in Europe? Flax, so much neglected at present, might, with proper attention, become one

* Dr. David Hosack.

of the most productive and profitable occupations of husbandry. It is one of the labyrinths of our policy, to account for the present neglect on this subject.

That our agriculturalists have the means, under improved and more extensive regulations, to secure to themselves and to their descendants, the blessings now in anticipation by such investigations, is seen in the discoveries and suggestions they have already made. We need most the precepts of those who practice on our own soil; and after having perused the works of Dickson, and Marshall, and Hunter, and Abercrombie, we turn with a more solid, because a more practical satisfaction, to the pages of our own writers; the *New-England Farmer* of Deane, the *American Gardener* of Fessenden, the *Kitchen Garden* of Wilson, and the *Essays of Arator*, by Taylor, of Virginia. In addition, the *New-England Farmer*, by Fessenden; the *New-York Farmer*, under the patronage of this society; the *American Farmer*, of Skinner, and other periodical journals, by their mutual co-operation and rivalry, contribute to illustrate and extend the principles and improvements of American horticulture.

I am proud that my native state has not been behind hand in furnishing her quota of distinguished writers and patrons of Agriculture.

The late Chancellor Livingston will ever be cherished by New-York, as one of her most gifted sons and accomplished agriculturists. After devoting his youth and manhood to the defence of his country in the hour of peril, and his maturer years to rear her civil institutions, asking permission to retire from political tumult and contention, he taught our hardy farmers how to till the soil with most profit, and what herds might most advantageously graze upon her lawns. Of Dr. Mitchill, of this city, it would be unjust to omit his name in the list of those who, by their talents and knowledge, have contributed to encourage a taste among us for the beauties of nature. His versatile talents, his various knowledge, his urbanity and courtesy, are known to all of you; but I cannot omit the opportunity to say, that amidst the bustle and business of a commercial metropolis, surrounded by the zealous and exclusive devotees of wealth, he has nobly pursued the path of science, generously pointed out the way to our youth, and cheered them in their course. If there be among us any taste for Natural His-

tory, to him are we in a great degree indebted for it; and that excellent institution, the Lyceum of Natural History of New-York, attests his activity and zeal, and contains the recorded evidences of his science.

There still resides among us another distinguished citizen,* whose name reminds us of all that is magnificent in patronage, and generous in hospitality; and whose exertions in the interests of agriculture, have far exceeded all that has been allotted to any other individual of our state. Omitting as irrelevant to our purpose, his labors in the councils of the nation, I shall only at present point out to you, counties explored, and institutions for agriculture founded, by his wealth, and reared by his care. Long may this illustrious citizen live to exhibit to our people, a benignant example of the civic virtues of opulence devoted to the benefit of the indigent, and of patronage bestowed on the arts of agriculture.

In the absence of all aid from the state, no means can be devised more appropriate to those great undertakings, than the union of those devoted to their accomplishment. Most happy have been the results of the labors of those who have united in efforts requiring co-operation; stimulated by mutual zeal, and rewarded by mutual success.

Is it an unwarrantable extravagance, to anticipate that America will become the chosen residence of Agriculture, and the rites of Flora. Although in the infancy of our condition, commerce, and more recently, manufactures, have gained a supremacy; and the former, as contributory most to its support, may also expect to attain most of its protection; the claims of agriculture will ultimately prevail in a country of such boundless extent, and which no less boasts independence on the rest of the world by the multiplicity of its resources, than it sets defiance to their power, by the vigor and valor of its population. We trust it never can be said, that a people who derived their origin from the most enlightened of modern nations, in an age fertile beyond all former example in genius and improvement, who were impelled by elevated and generous incentives in their adventure, and when checked in their enterprise, turned their arms

* Hon. Stephen Van Rensselaer.

with dauntless boldness and final success, upon their unnatural parents; who inhabit a country which contains within itself, the productions of every soil and climate, became recreant to its own honor and greatness, and false to its own high destiny. The omens are auspicious: and when in the course of time, and the progress of society, her population shall have become augmented, and her resources developed; when the grandeur and sublimity of her native scenery, and the magnificence of her rivers shall have been appropriated and cultivated, and the fairy hand of civilization have enchanted and enlivened her woods and forests, admiring nations will yield that tribute to her moral greatness, which they had before rendered to the arm of her physical power.

The present age can alone be supposed to have been fully aware of the advantages of science, or to have improved it with the proper aids of experiment and art. In Great Britain have those facilities combined, which were necessary to the development of its principles. In having recourse to her science, we do but acknowledge her greater maturity in those arts, in which it will be our pride to join hereafter in mutual emulation. The obligation will be reciprocal, and she is already indebted to us for a gift more precious than the mines of Potosi.

Of the moral purity and dignity inherent in the cultivation of the earth, I need not here insist at length. It is too obvious to be misunderstood, and is illustrated in the life and writings of many of the most distinguished names in our own, as well as in foreign nations. I will merely allude to the fact, that a garden was the seat of man in his state of innocence, and that it was in a garden that Plato and Aristotle instructed their disciples in sublime lessons of wisdom, inferior only to the truths which revelation has brought to light. And when majestic Rome subjugated and civilized the barbarous nations around her, by the vigor of her arms and the triumphs of her policy, the commanders of her victorious legions were chosen from the cultivators of her fields.

In our own nation, the father of his country left reluctantly the farm for the field of battle, and having overcome the enemies of freedom, returned to the labors of agriculture. And when a second time his services were demanded, having filled the measure of his own and his country's glory, he again re-

sumed those peaceful pursuits which it was his delight to cherish, and which nothing but his country's call could have induced him to forego. Thence he was summoned by his Maker to a higher scene; and although death on the field of battle is more consonant to human pride, to surrender our life at his bidding, is more agreeable to the wish of our Maker. Thus it was ordered by his Creator, that man in a state of innocence, should exercise the arts of agriculture for his enjoyment, and in a state of trial, its labor for his security. The foundations of our republic were cemented in blood; but let us trust that its supremacy will be reared by the innocent arts of peace.

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