

No. 13. — *Report of the Director of the Arnold Arboretum, presented to the President and Fellows of Harvard University.*

TO THE PRESIDENT OF THE UNIVERSITY:—

SIR,—I have the honor to submit the following report of the present condition of the ARNOLD ARBORETUM, and of its progress during the two years which have passed since I was intrusted with the direction of its formation.

The very limited means at the disposal of the Director have, of necessity, made these two years, years of preparation and organization.

A Catalogue of the ligneous plants growing spontaneously, or by introduction, previous to 1872, on that portion of the "Bussey Farm" which is to be devoted to the Arboretum, has been made. (See *Appendix A.*)

The soil and indigenous growth on the various portions of the grounds have been carefully studied with a view to a proper determination of the permanent location of the various collections, and several thousand trees and shrubs have been raised for the future plantations. (See *Appendix B.*)

An inspection of the trees already growing in the Arboretum showed that many of them were in a miserable condition from long neglect of proper thinning, and the consequent want of food, light, and air. To remedy this as far as possible, the woods and old plantations have been gradually thinned out, the weak, deformed, and unhealthy plants being cut first, and then such as interfered with fine single specimens, or with specimens of only occasional occurrence. Returning health in many of the trees, and the greatly improved appearance of the woods and belts of timber is already apparent, although the operation of thinning out old woodlands, with a view to forming healthy, well-developed trees, is necessarily a slow one, and must be extended over many years.

Already many noble specimens of some of the finest native trees are scattered through the open portions of the grounds, promising dignity and interest to the Arboretum, and proving that the situation is particularly adapted to the use to which it is to be devoted.

I am under deep obligation to Dr. Asa Gray for the valuable assistance and advice with which he has honored me from the very outset

of the undertaking, and for an introduction to his numerous correspondents both in America and Europe.

I take this occasion to acknowledge the following contributions:—

Many seeds of European and Asiatic trees and shrubs from the Royal Gardens, Kew, through its Director, Dr. J. D. Hooker. Several collections of seeds, especially of the trees of Eastern Asia, from the Jardin des Plantes, through its Director, Prof. Decaisne. Collections of seeds of the trees and shrubs of Siberia and the North of China from the Imperial Botanic Garden at St. Petersburg, through its Director, Dr. Ed. Regel.

Large and full collections of seeds of the trees and shrubs of Ohio and the neighboring States, from W. C. Hampton, Esq., of Mt. Victory, Ohio.

Large collections of seeds of the trees and shrubs of Virginia, from A. H. Curtiss, Esq., of Liberty, Va.

My thanks are due to Dr. Kellogg, of San Francisco, and to Dr. H. N. Bolander, late State Botanist of California, for extensive and valuable collections of Californian seeds; and to J. G. Lemmon, Esq., of Sierra Valley, California, to whose energy and zeal I am indebted for a large quantity of seed of some of the rarer Californian Coniferæ, and for many other valuable contributions.

My thanks are also due to Dr. C. C. Parry, of Davenport, Iowa, for seeds of the Rocky Mountain Coniferæ, and to Dr. George Engelmann, of St. Louis, for seeds of the rare *Abies concolor*, and of several species of Oak.

To T. S. Brandigee, Esq., of Cañon City, Colorado, and to A. L. Siler, Esq., of Osmer, Kane Co., Utah, I am indebted for seeds of the trees of their respective localities, some of which are entirely new to cultivation.

I am also indebted to Messrs. Pinney & Co., of Sturgeon Bay, Wisconsin, for coniferous seed; to Dr. J. H. Mellichamp, of Bluffton, South Carolina, for seeds of some of the rarer ligneous plants of that State; to H. H. Hunnewell, Esq., of Wellesley, Mass., for seed of the rare *Larix leptolepis*; to W. R. Mercer, Esq., of Doylestown, Penn., and to Mrs. Mary Treat, of Vineland, New Jersey, for seeds collected in their respective localities.

C. S. SARGENT, *Director*.

December 1, 1874.

APPENDIX A.

A CATALOGUE OF THE LIGNEOUS PLANTS GROWING IN THE ARNOLD
ARBORETUM. SEPTEMBER 1, 1874.*The Asterisk (*) denotes that the Plant is not growing spontaneously.*

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|---------------------------------|----------------------------------|
| Clematis Virginiana, L. | *Pyrus communis, L. |
| *Magnolia umbrella, Lam. | *Pyrus malus, L. |
| *Liriodendron Tulipifera, L. | *Pyrus aucuparia, Gærtn. |
| Berberis vulgaris, L. | Pyrus Americana, DC. |
| Tilia Americana, L. | *Philadelphus coronarius, L. |
| *Tilia Europæa, L. | Hamamelis Virginica, L. |
| Rhus glabra, L. | Cornus alternifolia, L. |
| Rhus copallina, L. | Cornus stolonifera, Mich. |
| Rhus venenata, DC. | Cornus paniculata, L'Her. |
| Rhus Toxicodendron, L. | Cornus florida, L. |
| Rhamnus catharticus, L. | Sambucus Canadensis, L. |
| Ceanothus Americanus, L. | Viburnum Lentago, L. |
| Celastrus scandens, L. | Viburnum dentatum, L. |
| *Æsculus Hippocastanum, L. | Viburnum acerifolium, L. |
| *Acer Pseudo-platanus, L. | *Viburnum Opulus, L. |
| Acer saccharinum, Wang. | *Symphoricarpus racemosus, Mich. |
| Acer rubrum, L. | *Lonicera Etrusca, Santi. |
| *Caragana frutescens, DC. | *Lonicera Tartarica, L. |
| Robinia Pseudacacia, L. | Lonicera ciliata, Muhl. |
| *Colutea arborescens, L. | Cephalanthus occidentalis, L. |
| *Gleditschia triacanthos, L. | Gaylussacia frondosa, Torr. & |
| *Prunus avium, Moench. | Gray. |
| *Prunus Chamæcerasus, Lois. | Gaylussacia resinosa, Torr. & |
| Prunus Virginiana, L. | Gray. |
| Prunus serotina, Ehrh. | Vaccinium Pennsylvanicum, Lam. |
| Spiræa salicifolia, L. | Vaccinium corymbosum, L. |
| Spiræa tomentosa, L. | Vaccinium macrocarpon, Ait. |
| Rubus strigosus, Mich. | Gaultheria procumbens, L. |
| Rubus occidentalis, L. | Andromeda ligustrina, Muhl. |
| Rubus Canadensis, L. | Azalea viscosa, L. |
| Rubus hispidus, L. | *Rhododendron Catawbiense, L. |
| Rosa lucida, Ehrh. | Ilex verticillata, Gray. |
| Rosa Carolina, L. | *Catalpa bignonioides, Walt. |
| *Rosa cinnamomea, L. | *Lycium vulgare, Dunal. |
| *Rosa Alpina, L. | *Syringa vulgaris, L. |
| *Cratægus Oxyacantha, L. | *Ligustrum vulgare, L. |
| Cratægus tomentosa, L. | *Fraxinus excelsior, L. |
| Amelanchier Canadensis, Torr. & | Fraxinus Americana, L. |
| Gray. | Lindera Benzoin, Meisner. |
| var. Botryapium, | Ulmus Americana, L. |
| Gray. | *Ulmus campestris, L. |

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| * <i>Ulmus montana</i> , Wither. | <i>Alnus incana</i> , Willd. |
| * <i>Morus rubra</i> , L. | * <i>Salix</i> ———? |
| * <i>Morus alba</i> , L. | <i>Salix</i> ———? |
| <i>Platanus occidentalis</i> , L. | <i>Salix</i> ———? |
| <i>Juglans cinerea</i> , L. | * <i>Populus alba</i> , L. |
| <i>Carya alba</i> , Nutt. | <i>Populus tremuloides</i> , Mich. |
| <i>Carya tomentosa</i> , Nutt. | <i>Populus grandidentata</i> , Mich. |
| <i>Carya porcina</i> , Nutt. | * <i>Pinus sylvestris</i> , L. |
| <i>Carya amara</i> , Nutt. | * <i>Pinus Laricio</i> , Poir. |
| <i>Quercus alba</i> , L. | <i>Pinus rigida</i> , Miller. |
| <i>Quercus bicolor</i> , Willd. | <i>Pinus Strobus</i> , L. |
| <i>Quercus ilicifolia</i> , Wang. | * <i>Abies nigra</i> , Poir. |
| <i>Quercus coccinea</i> , <i>var. tinctoria</i> ,
Gray. | * <i>Abies excelsa</i> , DC. |
| <i>Quercus rubra</i> , L. | <i>Abies balsamea</i> , Mars. |
| <i>Castanea vesca</i> , L. | <i>Abies Canadensis</i> , Mich. |
| <i>Fagus ferruginea</i> Ait. | * <i>Larix Europæa</i> , DC. |
| <i>Corylus Americana</i> , Walt. | * <i>Chamæcyparis obtusa</i> , Sieb. &
Zucc. |
| <i>Ostrya Virginica</i> , Willd. | * <i>Thuja occidentalis</i> , L. |
| <i>Carpinus Americana</i> , Mich. | <i>Juniperus Virginiana</i> , L. |
| <i>Myrica cerifera</i> , L. | <i>Juniperus Sabina</i> , <i>var. procum-</i>
<i>bens</i> , Pursh. |
| <i>Comptonia asplenifolia</i> , Ait. | * <i>Juniperus Chinensis</i> , L. |
| <i>Betula lenta</i> , L. | <i>Smilax rotundifolia</i> , L. |
| <i>Betula alba</i> , <i>var. populifolia</i> ,
Spach. | <i>Smilax herbacea</i> , L. |

APPENDIX B.

A CATALOGUE OF THE LIGNEOUS PLANTS RAISED AT THE ARNOLD ARBORETUM DURING THE TWO YEARS ENDING DECEMBER 1, 1874.

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|-----------------------------------|---|
| <i>Clematis Douglasii</i> , Hook. | <i>Berberis Canadensis</i> , Pursh. |
| <i>Clematis Virginiana</i> , L. | <i>Berberis Sinensis</i> , Desf. |
| <i>Magnolia glauca</i> , L. | <i>Isomeris arborea</i> , Nutt. |
| <i>Magnolia umbrellæ</i> , Lam. | <i>Cistus Corbariensis</i> , Pourr. |
| <i>Asimina triloba</i> , Dunal. | <i>Cistus laurifolius</i> , L. |
| <i>Cocculus Carolinus</i> , DC. | <i>Helianthemum serpyllifolium</i> ,
Mill. |
| <i>Menispermum Canadense</i> , L. | <i>Helianthemum roseum</i> , DC. |
| <i>Akebia quinata</i> , Decne. | <i>Hypericum Androsæmum</i> , L. |
| <i>Berberis vulgaris</i> , L. | <i>Hypericum prolificum</i> , L. |
| <i>var. asperma</i> , Hort. | <i>Tilia platyphylla</i> , Scop. |
| <i>var. asperula</i> , Hort. | <i>Zanthoxylum Americanum</i> , Mill. |
| <i>var. dulcis</i> , Hort. | <i>Ptelea trifoliata</i> , L. |
| <i>var. emarginata</i> , Hort. | <i>Ailanthus glandulosus</i> , Desf. |
| <i>var. purpurea</i> , Hort. | <i>Rhus copallina</i> , L. |
| <i>var. Sibirica</i> , Hort. | |

Vitis cordifolia, *var. riparia*, Gray.

Vitis heterophylla, Thumb.

Rhamnus catharticus, L.

Rhamnus infectorius, L.

Rhamnus Frangula, L.

Ceanothus Americanus, L.

Celastrus scandens, L.

Euonymus atropurpureus, Jacq.

Staphylea trifolia, L.

Staphylea Bumalda, DC.

Kœlreuteria paniculata, Laxm.

Æsculus glabra, Willd.

Æsculus flava, Ait.

var. purpurascens, Gray.

Acer spicatum, Lam.

Acer circinatum, Pursh.

Acer glabrum, Torr.

Acer rubrum, L.

Acer ———?

Negundo aceroides, Moench.

Laburnum vulgare, Griseb.

var. involuta, Hort.

var. grandiflora, Hort.

var. fragrans, Hort.

var. autumnalis, Hort.

var. Waterer's, Hybrid, Hort.

var. quercifolia, Hort.

var. Adami, Hort.

var. arvensis, Hort.

var. pendula, Hort.

Laburnum alpinum, Griseb.

Genista radiata, Scop.

Genista virgata, DC.

Genista aphylla, DC.

Genista Ætnensis, DC.

Genista tinctoria, L.

Spartium junceum, L.

Ulex Europæus, L.

Cytisus albus, Link.

Cytisus albus, *var. monstrosa*, Hort.

Cytisus nigricans, L.

Cytisus scoparius, Link.

Cytisus capitatus, Jack.

Caragana microphylla, DC.

Caragana frutescens, DC.

Caragana frutescens, *var.*

Colutea arborescens, L.

Colutea cruenta, Ait.

Colutea Haleppica, Lam.

Cladrastis tinctoria, Raf.

Sophora speciosa, Shule.

Cercis occidentalis, Torr.

Gymnocladus Canadensis, Lam.

Gleditschia triacanthos, L.

Gleditschia Sinensis, Lam.

Gleditschia ferox, Desf.

Acacia Rœmeriana, Schlecht.

Prunus Americana, Marshall.

Nuttallia cerasiformis, Torr. and Gray.

Spiræa opulifolia, L.

Spiræa chamædrifolia, *var. oblongifolia*, Camb.

Spiræa trilobata, L.

Spiræa salicifolia, *var. carnea*, Ait.

Spiræa salicifolia, *var. semperflorens*, Hort.

Spiræa ariæfolia, Smith.

Spiræa callosa, Thumb.

Spiræa callosa, *var. glabra*.

Spiræa sorbifolia, L.

Spiræa aruncus, L.

Spiræa vacciniifolia, Don.

Spiræa cratægifolia, Link.

Spiræa Nobleana, Hook.

Exocorda grandiflora, Lindl.

Cercocarpus parvifolius, Nutt.

Rubus suberectus, Anders.

Rubus strigosus, Mich.

Rubus laciniatus, Willd.

Rubus cordifolius, Weith & Ness.

Rubus tiliæfolius, Weith & Ness.

Rubus leucostachys, Schleich.

Rubus rhamnifolius, Weith & Ness.

Rubus villosus, Ait.

var. flora-pleno, Hort.

Rubus deliciosus, Torr.

Rubus rudis, Weihe.

Rubus thyrsoides, Wimm.

- Rubus parvifolius*, L.
Rubus mucronatus, Ser.
Rosa macrophylla, Lindl.
Cratægus Pyracantha, Pers.
Cratægus pyrifolia, Ait.
Cratægus coccinea, L.
Cratægus tomentosa, *var. mollis*, Gray.
Cratægus marroccana, Pers.
Cratægus tanacetifolia, Pers.
Cratægus Oxyacantha, L.
 var. fusca, Hort.
 var. flava, Hort.
 var. orientalis, Hort.
 var. incisa, Hort.
 var. stricta, Hort.
 var. laciniata, Hort.
 var. Oliveriana, Hort.
 var. ilicifolia, Hort.
Cratægus melanocarpa, Bieb.
Cratægus sanguinea, Pall.
Amelanchier vulgaris, Moench.
Pyrus parviflora, Desf.
Pyrus floribunda, Lindl.
Pyrus spectabilis, Ait.
Pyrus prunifolia, Willd.
Pyrus coronaria, L.
Jamesia Americana, Torr. & Gray.
Philadelphus coronarius, L.
Philadelphus grandiflorus, Willd.
Philadelphus Gordonianus, Lindl.
Hydrangea arborescens, L.
Liquidambar styraciflua, L.
Cornus stolonifera, Mich.
Cornus paniculata, L'Her.
Cornus florida, L.
Cornus Nuttallii, Audubon.
Nyssa multiflora, Wang.
Sambucus nigra, *var. virescens*, Hort.
Sambucus racemosa, L.
Sambucus pubens, Mich.
Viburnum opulus, L.
Lonicera Etrusca, Santi.
Lonicera flava, Sims.
Lonicera Tartarica, L.
Lonicera Xylosteum, L.
Lonicera involucrata, Banks.
Lonicera cærulea, L.
Lonicera Iberica, Bieb.
Lycesteria formosa, Wall.
Cephalanthus occidentalis, L.
Erica vagans, L.
 var. purpurascens, Bree.
Andromeda ligustrina, Muhl.
Oxydendrum arboreum, DC.
Dabœcia polifolia, G. Don.
Rhododendron Catawbiense, Mich.
Rhododendron chrysanthum, Pall.
Ilex verticillata, Gray.
Callicarpa Americana, L.
Fraxinus Ornus, L.
Fraxinus excelsior, L.
Fraxinus Americana, L.
Aristolochia Sipho, L'Her.
Persea Carolinensis, Nees.
Elæagnus argentea, Pursh.
Ulmus montana, Wither.
Ulmus racemosa, Thomas.
Planera crenata, Desf.
Celtis Australis, L.
Celtis Tournefortii, Lamb.
Celtis Sinensis, Persoon.
Celtis occidentalis, L.
 var. crassifolia, Gray.
Celtis Audibertiana, Spach.
Morus rubra, L.
Juglans cinerea, L.
Juglans ———?
Pterocarya fraxinifolia, Spach.
Carya alba, Nutt.
Carya microcarpa, Nutt.
Carya tomentosa, Nutt.
Carya porcina, Nutt.
Carya amara, Nutt.
Quercus Robur. var. pedunculata, Willd.
Quercus alba, L.
Quercus macrocarpa, Mich.
 var. olivæformis, Gray.
Quercus bicolor, Willd.
Quercus lobata, Nees.

- Quercus Prinus, L.
 Quercus cinerea, Mich.
 Quercus Sonomensis, Benth.
 Quercus imbricaria, Mich.
 Quercus aquatica, Catesby.
 Quercus nigra, L.
 Quercus ilicifolia, Wang.
 Quercus coccinea, Wang.
 var. tinctoria, Gray.
 Quercus rubra, L.
 Quercus palustris, Du Roi.
 Quercus chrysolepis, Liebm.
 Quercus densiflora, Hook.
 Castanopsis chrysophylla, Alph.
 DC.
 Castanea pumila, Mich.
 Corylus Americana, Watt.
 Ostrya Virginica, Willd.
 Carpinus betulus, L.
 Carpinus Americana, Mich.
 Betula lenta, L.
 Betula alba, *var. populifolia*,
 Spach.
 Betula alba, *var. urticifolia*, Hort.
 Alnus glutinosa, Willd.
 Alnus serrulata, Ait.
 Pinus muricata, Don.
 Pinus pungens, Mich.
 Pinus inops, Ait.
 Pinus mitis, Mich.
 Pinus Pinaster, Ait.
 var. robusta, Hort.
 Pinus resinosa, Ait.
 Pinus Sabiana, Dougl.
 Pinus ponderosa, Dougl.
 Pinus Jeffreyi, Murr.
 Pinus Tæda, L.
 Pinus rigida, Mill.
- Pinus Balfouriana, Murr.
 Pinus excelsa, Wall.
 Pinus Strobus, L.
 Pinus monticola, Dougl.
 Pinus Lambertiana, Dougl.
 Pinus Torreyana, Parry.
 Abies alba, Mich.
 Abies orientalis, Poir.
 Abies Engelmanni, Parry.
 Abies Nordmanniana, Spach.
 Abies Sibirica, Ledeb.
 Abies amabilis, Lindl.
 Abies grandis, Lindl.
 Abies concolor, Engelm.
 Abies Mertensiana, Lindl.
 Abies Pattoniana, Jeff.
 Abies Douglasii, Lindl.
 Larix Dahurica, Turcz.
 Larix leptolepis, Endl.
 Cedrus Atlantica, Manetti.
 Glyptostrobus heterophyllus, Endl.
 Sequoia gigantea, Torr.
 Libocedrus decurrens, Torr.
 Cupressus torulosa, Don.
 Cupressus funebris, Endl.
 Cupressus macrocarpa, Hartw.
 Thuja gigantea, Nutt.
 Thuja plicata, Don.
 Biota orientalis, Endl.
 Juniperus Sabina, *var. procum-*
 bens, Pursh.
 Torreya Californica, Torr.
 Smilax rotundifolia, L.
 Yucca Treculiana, Carrière.
 Yucca rupicola, Schule.
 Yucca baccata, Torr.
 Yucca filamentosa, L.
 Yucca Whipplei, Torr.



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