



Hunt Institute for Botanical Documentation  
5th Floor, Hunt Library  
Carnegie Mellon University  
4909 Frew Street  
Pittsburgh, PA 15213-3890  
Telephone: 412-268-2434  
Email: [huntinst@andrew.cmu.edu](mailto:huntinst@andrew.cmu.edu)  
Web site: [www.huntbotanical.org](http://www.huntbotanical.org)

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*About the Institute*

The Hunt Institute for Botanical Documentation, a research division of Carnegie Mellon University, specializes in the history of botany and all aspects of plant science and serves the international scientific community through research and documentation. To this end, the Institute acquires and maintains authoritative collections of books, plant images, manuscripts, portraits and data files, and provides publications and other modes of information service. The Institute meets the reference needs of botanists, biologists, historians, conservationists, librarians, bibliographers and the public at large, especially those concerned with any aspect of the North American flora.

Hunt Institute was dedicated in 1961 as the Rachel McMasters Miller Hunt Botanical Library, an international center for bibliographical research and service in the interests of botany and horticulture, as well as a center for the study of all aspects of the history of the plant sciences. By 1971 the Library's activities had so diversified that the name was changed to Hunt Institute for Botanical Documentation. Growth in collections and research projects led to the establishment of four programmatic departments: Archives, Art, Bibliography and the Library.

EDWARD SANDEORD BURGESS  
LECTURES ON BOTANY

1120 13<sup>TH</sup> ST. WASHINGTON, D.C.

VOL. II

BONES DRUPES LAURELS MYRTLES ORANGES ROSES SANDWICHES CALICANES  
SUCRAL TYPE LINTULACEA (MAGNOLIA AKOONIA DILLIARDI TIPPES PERONIA  
COMPOSITE VACCINIA ERICACEAE EPACRIDIS RUBI  
GENTIANIS PINKS PORTULACOS CRASSULACEAE PRIMULOSIS  
VIOLETS PASHION-FLOWERS CRUCIFERS CAPSARIAS CISTACEAE RESERACE  
LAMIATES VERBENAS BURAGEI SCROPHULARIACEAE LENTIS-ACANTHUS BIRN-LOVELL  
ERUBALPHIS BITINERISIC-JUSTICIA-MIMIC-TEAS HYPERIC- GORDIS BEGONIAS  
SCROPHULARIACEAE MUSACEAE GINGERAS MARANTAS WATER-LILIES LOTUSSES  
CAREXAS GURTACEAE CECALY

## LECTURE TOPICS.

1st Qr. **PHYSIOLOGY.**

1. Oct. 12. The Skeleton ; Bones and Joints.
2. Oct. 19. Muscles and Movement.
- Oct. 26. Circulation and the Blood.
4. Nov. 2. Respiration and the Lungs.
5. Nov. 9. Digestion, Food and Drink.
6. Nov. 16. Nerves and Senses.

2d Qr. **GEOLOGY.**

7. Nov. 23. Planet Forming.
8. Nov. 30. Rock Forming.
9. Dec. 7. Sedimentary Rocks (*a*, Arenaceous, *b*, Argillaceous, *c*, Calcareous.)
10. Dec. 14. Igneous and Metamorphic Rocks (*a*, Granitic, *b*, Trappean, *c*, Volcanic.)
11. Dec. 21. Metal-bearing Rocks.
12. Jan. 4. Earliest Rocks.
  1. Archean Era ; (Laurentian System.)
  2. Paleozoic Era ; (Cambrian, Silurian and Devonian Systems.)
13. Jan. 11. The Coal Period (Carboniferous System.)
14. Jan. 18. The Age of Reptiles (Mesozoic Era.)
15. Jan. 25. The Age of Mammals (Cenozoic Era.)
16. Feb. 1. The Age of Man (Psychozoic Era.)



THE ROSE FAMILY is known in general by *Hammock's Scissors* and *Bietsli's Flowers in 5's*; Stamens inserted on the Calyx (which distinguishes it from Saxifragaceae)

1. Related Families, The Saxifrage Family has like insertion, but stamens usually 10 and petals five.

Examples of the Saxifrage family which are wild here are the Early Saxifrage and the Almond. Cultivated examples are the Gooseberry, Currant, Syringa, and Hydrangea and Deutzia.

The Pulse family or Leguminosae is also very closely related to the Rose family, but is very easy of distinction: formula  $S_4, 10, 5, 9$

c. Importance of the Rose Family.

The Rose family is in the first place, large, containing 1000 species; 2d, universal or almost so; 3d, highly ornamental, containing not only the roses, but the <sup>for ornamentation</sup> most beautiful flowers, the <sup>most beautiful trees</sup> flowering trees. 4th, useful, from furnishing the more important fruits of temperate climates.

d. Kinds.

The Rose family consists of 3 very distinct Suborders. In the first or Almond Suborder, which is to be distinguished by its fruit being a drupe or stone-fruit, are included the Plum, Cherry, Almond, flowering Almond, Peach, Apricot, Prune, Amelie, Sloe, ~~Almond~~, Nectarine; all of which are valued fruits of temperate climates. These species of the Almond suborder are native to the District, the Wild Plum, Choke Cherry and Black Cherry. Four others are to be found growing <sup>here</sup> escaped from cultivation; they are the Peach, Apricot, Chickasaw Plum, and Black Thorn. Over 100 species of this suborder are

POMEAE.

Trees or shrubs; differing in size of Rose family, by fruit always Carpellets adhere to sides of Calyx & more or less to each other; the species only 1-5; ovules 2; seed 1.

Particular tendencies to monostemonous fls; best order to study for morphological variation; best in the order is the Pines; of which a pecuniary most number of 14 styles, 14 ovaries, 10 sepals in 2 rows, formed a little to Rosea; (e. Pinnus is seen so on).

Localities; + in Bux (NAz notes e. Ind, NAz; rare in Malay 0 in Afr. excon N shore & in Madeira; 1 sp in S. India is.

Notes, 16 genera, 200 sp. Lindley  
Include

Populus, &	Bean-tree	(Pavia) tinniter, involub. for axle-trees.
Pear		Communis, 10d also hard as Box; used by our carpenter.
Apple		
Syringia		
Malus		
Crataegus		
Sorb		
Myrtillus, the Medlar		
Amelanchier	Juneberry	
Oronocles		
Pterispyllum		
Cotoneaster		
Najelia		
Myrica		
Eucalyptus		
Photinia	Loquat	C. Uva Ursi, p. microphylla have also Zeuss's Ac.
Myrica		
Chamaecyparis		
Rhaphidophora		
Crataegus	Thorn	P. dulc. in bark used in Nepal to dye scarlet
Spiraea		
Cydonia	Quince	Seeds used for ink; used to make a wine; find com. (Elaeagnus) other.

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**Etymology:** P a significant part; Hyman to Demeter tells how Eros-  
phros was forced in the world below to taste the pip of a P, i.e. unite  
sexually to Adonis, & became thereby subject to him.

Athena it could not be dedicated to, goddess of "Intellectual clarity,"  
as P is symbolically symbolized the material life; with Ceres erected a  
statue of her on the account of the Argyris, unimpaired, in her right hand  
P, in her left a helmet; bec he wd indicate the status of the P stars of  
Sida, a town close to the Eurytades, where Ceres had gained a double  
victory.

**In Italy**

Roma's voting in Achaean cities in It is no doubt retained the Gr use of the  
P: & its cult, more temples & in gardens; the statue at Olympia of Milo of  
Croton, a Magesa-Graecian athlete of 520 BC, was reged as bearer of Hera bearing  
a P in left hand.

Ancient Ritual in one of oldest parts world as the P: the wife of the *Flores*  
*Nola* in manner & dress was an image of the Roman water 12 pipes of her  
head a P branch, its ends tied together to white wool thread as sign of wedded  
fidelity; & bec husband's head was adorned at top w/ olive-branches, wh  
cannot be older than the P & was inward into It. of the *Barquians*.

Indications of P worship have been found in quantities in the anc tombs  
of S. It. esp. at Nola & Soriano.

African P was prob redder, sweeter, juicier; pipless African P<sup>1</sup> Marcial  
writes of, in soft-jointed; hence Roman name for P of *Malva puniciana*  
Rudolphus, the Arab, writes that the pipe of the soft berry being to the berries  
a little prior than the seed buds from those, adding "Note that in our  
gardens is noticed that bud, but it is hardy now, & not to be compared to the  
nectar produced by the rosemary of Africa." Vandals in Afr. no doubt  
cult. it, Arabs, lovers of this & refreshing fruitjuices did so, calling it *Arz*,  
*arzewa*, wh the Latin names for it were preserved by them; the Arab con-  
textualness in the earliest use of form of P, hence the bc derived their pres-  
ent name for the S. y. *Arz*, *Arz*, *Arz*, Granada, founded by Moors in  
9<sup>th</sup>, is said to have been named for the P; figure of P was adoped in its arms,  
& still adorns all its streets & public buildings.

Roman writers mention the P was born Carthage, many kinds, used

in Carthage.

Med. Wild P, i.e. P can wild, live in road. It is Gr. as honey & sugar to most  
fruit. Even the cold smaller & inferior than the P of Afr; the heat had it fruit belongs  
placed on table bc light rather than eating, the leaves having taken the p of the seed  
in it essence; the people in Gr still connect the P w/ idea of abundance & wealth  
10: Korte 1874 coming to Thessaly, as old custom here him a fine P w/ white  
skin as many berry as there were pipe in it. And in Gr. a pleasure of the  
soul is a equal of the most ancient love.

From word P 837-8-9-40,

Ellen, word p 169-171. About 587

In Belg name p 134 in list of names of E, "one male parlay, vikars, and pro vino malibus  
pro alibus, in 16, in 18, in 19, in 20, in 21, in 22, in 23, in 24, in 25, in 26, in 27, in 28, in 29, in 30, in 31, in 32, in 33, in 34, in 35, in 36, in 37, in 38, in 39, in 40, in 41, in 42, in 43, in 44, in 45, in 46, in 47, in 48, in 49, in 50, in 51, in 52, in 53, in 54, in 55, in 56, in 57, in 58, in 59, in 60, in 61, in 62, in 63, in 64, in 65, in 66, in 67, in 68, in 69, in 70, in 71, in 72, in 73, in 74, in 75, in 76, in 77, in 78, in 79, in 80, in 81, in 82, in 83, in 84, in 85, in 86, in 87, in 88, in 89, in 90, in 91, in 92, in 93, in 94, in 95, in 96, in 97, in 98, in 99, in 100, in 101, in 102, in 103, in 104, in 105, in 106, in 107, in 108, in 109, in 110, in 111, in 112, in 113, in 114, in 115, in 116, in 117, in 118, in 119, in 120, in 121, in 122, in 123, in 124, in 125, in 126, in 127, in 128, in 129, in 130, in 131, in 132, in 133, in 134, in 135, in 136, in 137, in 138, in 139, in 140, in 141, in 142, in 143, in 144, in 145, in 146, in 147, in 148, in 149, in 150, 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in 651, in 652, in 653, in 654, in 655, in 656, in 657, in 658, in 659, in 660, in 661, in 662, in 663, in 664, in 665, in 666, in 667, in 668, in 669, in 670, in 671, in 672, in 673, in 674, in 675, in 676, in 677, in 678, in 679, in 680, in 681, in 682, in 683, in 684, in 685, in 686, in 687, in 688, in 689, in 690, in 691, in 692, in 693, in 694, in 695, in 696, in 697, in 698, in 699, in 700, in 701, in 702, in 703, in 704, in 705, in 706, in 707, in 708, in 709, in 710, in 711, in 712, in 713, in 714, in 715, in 716, in 717, in 718, in 719, in 720, in 721, in 722, in 723, in 724, in 725, in 726, in 727, in 728, in 729, in 730, in 731, in 732, in 733, in 734, in 735, in 736, in 737, in 738, in 739, in 740, in 741, in 742, in 743, in 744, in 745, in 746, in 747, in 748, in 749, in 750, in 751, in 752, in 753, in 754, in 755, in 756, in 757, in 758, in 759, in 760, in 761, in 762, in 763, in 764, in 765, in 766, in 767, in 768, in 769, in 770, in 771, in 772, in 773, in 774, in 775, in 776, in 777, in 778, in 779, in 780, in 781, in 782, in 783, in 784, in 785, in 786, in 787, in 788, in 789, in 790, in 791, in 792, in 793, in 794, in 795, in 796, in 797, in 798, in 799, in 800, in 801, in 802, in 803, in 804, in 805, in 806, in 807, in 808, in 809, in 810, in 811, in 812, in 813, in 814, in 815, in 816, in 817, in 818, in 819, in 820, in 821, in 822, in 823, in 824, in 825, in 826, in 827, in 828, in 829, in 830, in 831, in 832, in 833, in 834, in 835, in 836, in 837, in 838, in 839, in 840, in 841, in 842, in 843, in 844, in 845, in 846, in 847, in 848, in 849, in 850, in 851, in 852, in 853, in 854, in 855, in 856, in 857, in 858, in 859, in 860, in 861, in 862, in 863, in 864, in 865, in 866, in 867, in 868, in 869, in 870, in 871, in 872, in 873, in 874, in 875, in 876, in 877, in 878, in 879, in 880, in 881, in 882, in 883, in 884, in 885, in 886, in 887, in 888, in 889, in 890, in 891, in 892, in 893, in 894, in 895, in 896, in 897, in 898, in 899, in 900, in 901, in 902, in 903, in 904, in 905, in 906, in 907, in 908, in 909, in 910, in 911, in 912, in 913, in 914, in 915, in 916, in 917, in 918, in 919, in 920, in 921, in 922, in 923, in 924, in 925, in 926, in 927, in 928, in 929, in 930, in 931, in 932, in 933, in 934, in 935, in 936, in 937, in 938, in 939, in 940, in 941, in 942, in 943, in 944, in 945, in 946, in 947, in 948, in 949, in 950, in 951, in 952, in 953, in 954, in 955, in 956, in 957, in 958, in 959, in 960, in 961, in 962, in 963, in 964, in 965, in 966, in 967, in 968, in 969, in 970, in 971, in 972, in 973, in 974, in 975, in 976, in 977, in 978, in 979, in 980, in 981, in 982, in 983, in 984, in 985, in 986, in 987, in 988, in 989, in 990, in 991, in 992, in 993, in 994, in 995, in 996, in 997, in 998, in 999, in 1000.

**QUINCE** and Pomegranate were both included by the  
ancients under the general name of Apples.

In Myths, the Q idealized was the Golden Apple of the Hesperides  
and of Atlantis.

In Rites the Q was the apple dedicated to Venus & used as bridal  
gift.

In Customs the Q was the apple used in all kinds of folk games &  
love games; could not be eaten, except on prescription in  
wine, must, oil, & honey; it gave them a very fine perfume.

History Its Gr name *Cydonian Apple* proves it came to Gr  
Crete, land of the Cydonians, who were Semitic or not, west of  
its oldest & semi-mythic inhab. They lived in the NW coast north  
Jordanus: their city, *Cydonia*, mater urbium of the Q; fact of  
Q named for it indicates earliness of its introd to Gr.

Almas 650 BC mentions it heat. Strabon 650 BC, the Sicilia  
provincia; Diod. decided about that time, in confirmation of  
old Attic claim the trade of eastern of the island chamber, mounted  
a Cydonian apple - to consecrate herself to the service of V.

Ibycus of Rhegium It, a Greek Italian, 550 BC, speaks of Cyd  
apple trees in well-watered gardens; giving cult. in It.  
Italians early adopted its cult; as indic by its Gr name retained  
as *malva Cydonia* (or *Cyd*); & in Italy Regium, composing the  
name simplicity. Once the young people gave each other Q's stolen  
down to the tree, & basketsful of blackberries, but now it is mostly  
Q's flowers & luscious lilies.

Arabic, esp. P, Mag & Cilunella; the *malva struthian*  
lily *spargano* apple they mention, had been mented by Cato  
The in T. Mag; Qs placed in rooms for their perfume or soap  
and made a sweet confection for them like the madones Ital  
*ortognata*.

Arab var mentioned by Vairo Marce & Marcial,  
*mellinela* = honey-apples, many suppose were the sweet apples;  
were a var of Q, suited to cooking in must & oil, in honey; hence  
Sp. *membrillo*, Port. *marabolo*, quince jelly; & introduced  
to Persy. Spain *membrillo* was also exp'd to Sp. Rome then Galien.

Medice Q not com in It, much less than the pineapple of  
In the E, however, & all over Ebur; that region preserves a confectionery,  
the Q was in Mid Ages a new & cheap ornament of bouquets in  
the houses; striking proof of its use in the variety of ways in its  
nations, some being Pers & Turk words.

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Chinese Q is *Lycus Sincensis* (Cydonia) at —

Japan Q, P. Japonica or C. J., is Burning-bush or *Miyau* ok our  
gardens; redd here, acc. a lit. wood-bark,

Quince, E. Cydonia, see Rhind, p 327, & DC p 2367, DC credits it  
to Nat. Essai, 3<sup>e</sup> ed. Caus, & Anatolia.

Bosc, p 181-183.

Stacy writes 1, "They call for Dates & Quinces in the quince," hence in Ital.

Class. Rob. Ross, And many homely trees they were

"Moz Peches, COYNE & Apples, beech, Madlers, Pommers, Porsy, Chestnuts,  
Cherry, of which many forms sayre's,

Quince / Coyne / Cydonia.

Plinius, 14<sup>th</sup> Hæc Cocionus, a coveche

Vocabularij, 12<sup>th</sup> Hæc coecinum, a quoyne

Walter de Billiamsh, 13<sup>th</sup> c. 11. Is'si trrerey en ce verser

E-stang un sek Coigner (a Coyne, Quince-hæc) They tel on the trrerey a la  
Shear, see for definition.

## HAWTHORN

*Crataegus oxyacantha*

Also called MAR, QUICKSET, HAYTHORN, WHITE THORN, ALBESPEICE,  
avec 2 varietes or all lovers of Eng. w. landscape. HAWTHORN,

Bosc, p 84-6 gives Qu the Shlyx / Broom, Spencer  
Rhind, p. 447.





LOQUAT *Eriobotrya japonica*, var. *leucodermis*,  
fruit of peach, fine yellow; good as a mango. St. Jose, Bahia; but to ripen  
in Bg. in May, by stove heat; may be grafted on any sp. of genus *E*; from  
the Hawthorn.

DRUPACEÆ, or  
AMYGDALÆ

Trees or shrubs. Lvs simple. Fls white or pink; lvs in umbels,  
S 5 p 5 20 Pistil, ovary, cell ovule, style, exserted, stig. sessile; for a Drup.  
Bk yields a gum; var. *guttifera* <sup>Hydrocyanic</sup> like that in *Rosa*; mucous  
Fluors or + ovaries ink black, as *Rosa*; betw. *Lepus* & *Ro* the *Mimosæ* &  
Amyg. are black both in male structure, guss in fl., & in to gels. ash  
geny as *Druus* — x *Acacia Carolina*.

Only in N. hemisphere, in cold or temper. Tropical or subtr. are *Cerasus*  
*occidentalis* in Wt., some *Fluors* in Braz woods; *Prunus* & *microphylla*, in  
Am., in hot acid pls of Mex; also, *A. coccinifera*, id to grow in CC woods.  
N 3, 5 genera, 10 sp. 4 y.

Uses, + medical for the acid in them.

+ edible

gums for all, similar to *Aspacanth*

essence, Oil of Bitter Alm.; Oil of *Prunus* *triquetris*, *Hillebrandii*, *Moralesii*, *guttifera*,  
tea; use of Sloe & Bird Cherry are astringent; this, the tea is of astringent  
by use of Sloe in Bg.

brandy distilled to jesses, they are somewhat super

Kirschen-wasser; a liq in Voffel & Billefort, fr a var. of Bird-Cherry.

Genera:

*Prunus*

*Amygdalus*, L. the Almond

*Prunella*, *Cerasus*, *Malus*, *Malus*, *Malus*, *Malus*

*Cercocarpus*,

*Pearus*, L. the Plum, Sloe,

*Cerasus*, *Prunus* the Cherry





SLICE *Prunus spinosa*; this, *P. insidiosa*, & *L. demissa*;  
see note by Cass. the 3 wild plums of the old world; BLACKBERRY,

DC p 211, 212,

RHind p 236

Ellac. The Sloe is a shrub of very rounded appearance in the cold countries  
in early spring, when it is covered with its gaudy colored blossoms, but its utility  
was once indisputable in the simple use of quercetaff, & the 3 part  
was than [Basil] herbs; or Black as a Sloe was very common, & as useful as the  
Sloe, or not worth a note, also,

Sic Anny answered, "Do!"  
I say that thou art not the Sloe!  
Do right at that thou may!"

Anny & Anny's, *Edin. Review*

But the end of the poe gather up Sloes, have them in readiness plenty of those;  
And keep them in best show or still on the tray, to eat both the flesh of itself & thy core,  
This Taster thus advises, so even as a fruit the Sloe had its value.

The official seeds, Thus ys nooth  
Be God; that me der boone  
Het ys not warthe a Solo

The Fore & his Boy - Rie's Poplar Poetry.

### CHERRY *L. Cerasus, L.*

DC p 207      coach, fr. the Caspian to W Anatolia

RHind p 334-5

Ellac. p 40, 41, vol 3 hly extra,

Sloes, p 106, describes it to be *L. C.*, or *Prunus*, fr. *Cerasus* in Persia,  
whence the name came,

Extracts, *Sloes*, *Helena* in *MDR*, 8, 2, -  
But *Helena*, O how ripe in show  
Dun lips, these tempting *Cherries*, tempting show.

*Sloes*, Lady, H & S 1.

As like you As *Cherry* is to C.

*Sloes*, *Conce*, She whoer need compares  
Has such own shape of bud, bird, branch or berry  
That even her art sisters the natural roses,  
Her incl. silk twin in the rubied *Cherry*.

So we grew together  
Like to a double C seeming parted  
But not a union in partition.  
Two lovely berries moulded on 1 stem.

When he was by the *Sloes* in pleasure took  
That some odd sing, some other in these hills  
Would bring him *Red berries* & ripe *Red Cherries*,  
He fed them with his sight, they were him with berries,

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BEACH PLUM

### BIRD-CHERRY, *Pr. avium*, GEAN GUIGNE in Fr.

RHind p 335

DC p 206, 7; consid. to be the only the world species wild which  
prod. white cherries; fr. W temp Asia & temp Eur.





**LAUREL**, *Laurus lauro-cerasus*, one of the more rarely used evergreens in Eng. but in Connecticut called in 1576; first in Europ. to Parthenia; seen in Europ. gardens 1579, later, i. Bay; now used in co. shrubbery; Lvs fr. contain a considerable quantity of ac. used to flavor food; but juice in excess is a most potent poison. Yet have been poisoned by condiments flavoured to imitate it; but Laurel-water is distilled for the recent use; poisonous. Berries a small red berry only in also poisonous.

Portuguese Laurel, *L. Lusitanica*, also a highly adorned evergreen shrub; best in Bay & Portu; prob not there a native, but in Madeira, &c.

**LAUREL**, of the ancient Laurel wood is *Laurus nobilis*, of Lauraceae, an arborescens in the cooler tropics, raised in Eng. only by *Laurus nobilis* & in the US by *Laurus* the Atlantic Coast, see *Pearse*, *Sassafras*, *Benzoin* the Spice-bush; the berries are to be used for Algine distillations.

*Cassipou* is *Cassipou officinarum* is used; see Lvs by dry distillation in China, chiefly in Formosa I., exported to Canton. Rhind 209

*Cinnamon* wood from tree of *Cinnamomum* Rhind 182

*Cassia* the spice, is from same; only all sp. of *C.*; Chinese Cassia-bloss. *Cassia* Rhind 183

*Thymel* the Mescaluna of gardeners, shrub to 10 ft; purple or blue fls; of the related family *Thymelaeaceae*, Rhind 209

*Andropogon* a large genus of trees, shrubs, or herbs, in the tropics; in the West Indies, the *Andropogon* of Jamaica, a hard, yellow durable wood, *A. exaltata*; a epiphyte constitutes most timber; the *Andropogon* yields soft oil of volatile oil by single incision; its fruit yields yellow-violet colored aromatic acid, volatile oil, used as stimulant in India; *Andropogon* of China.

*Laurus nobilis*, the Laurel of Eng., native of Greece, conserved to pierces & berries used in the woods; and berries used in the woods; and berries used in the woods.

yet berries are, or blue, & s. odor, aromatic like to the above & slight sweet.

Shrub 8-12 ft; and used to

director to *C.*

*Sassafras*

*Andropogon*

*Andropogon*

*Andropogon*

*Andropogon*

*Andropogon*

*Andropogon*

*Andropogon*

*Andropogon*

*Andropogon*

*Andropogon*

*Andropogon*

**LAURESTINUS** *Pithecolobium tinus*, small shrub, highly ornamental shrub, lvs. more, oblong, lvs. + white, above.

**MYRTLE**, the depriv. evergreen of classic associa; a most abundant shrub in S. of Eng. prob introduced into Eng. by Philip, kept alive to display, held as the emblem of virtuous beauty; a delicate & elegant variety; in Bible assoc also to peace & plenty; in Milton w. the <sup>1544</sup> bower of Adam's Eve.

The root of this tree cannot be incooperated.

Laurel & Myrtle, a what higher proof of some beautiful leaf.

In sects, dedic. to Venus, hence in Mid Ages was the Br. for bridal parties, (since kept by Orange-blossom); as in *Rowley's Ballads*.

The wreath of Myrtle sprays Adonis his cryedresses.

And I will make thee beds of Roses And a thicket fragrant posies, A cap of Aris, & a kirtle Embroidered ere w. lvs of Myrtle.

Shakespeare Venus Then said she hastened to a Myrtle grove &c.

Venus to my Adonis sits by her Under a Myrtle shade before to wish.

I was at late as pretty of his ends As is the nose-dew on the Myrtle leaf.

To his grand sea. *A. Clegg*, 3, 12. And so Virgil.

*Amantes hircos myrtos*, i.e. the Myrtle bears the sea.

*Prunella* of *M. tinus* of 45 sp. a 130 ft. *Myrtus communis*

*Myrtus* at Orange as we find it in the possession of the Arabs, the leaves taste; but besides were both introduced to wine, the latter used in north

countries; only medicinal also. Native of Persia, introduced to Eng. by Sir J. Her. Rhind 600

*Myrtus carolinica*, Sumatra-lod M. native of Egypt, the *Vitis* *Cinnamomum*,

very elegant tree, also grown, fls. late, & a very dark aromatic, red & lvs. in show in open and red, of hard, fit for mill work; berries like peas, used in early plantations; Rhind 600.

*Laurus guianensis* the *Lauraceae*

*Myrtus guianensis* little tree, both species ever foliated to suit the *Thymelaeaceae* and by *Andropogon* as we find it in the possession of the Arabs, the leaves taste; but besides were both introduced to wine, the latter used in north

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*Myrtus carolinica*, Sumatra-lod M. native of Egypt, the *Vitis* *Cinnamomum*,

*Daphnol* not from  
 suspended from the country  
 from no as it  
 all purple, + my berries are  
 some forest trees, few in show  
 They sometimes the fringed lvs.  
 about two inch purple flowers  
 fls. in a small fan every  
 country behind in minute  
 purple  
 Caper very  
 Scilla  
 Hy  
 asparagus  
 Allium + water; all common  
 Daphnol  
 Nardus  
 Ornithogalum  
 Menisperm  
 Ranunculus  
 Phormium





BLACKBERRY, BRAMBLE, of Eng. *Rubus fruticosus* & *corylifolius*,  
Rhind p 337. Ellicombe p 28, 29. Sheat, p 94. (As a Bramble, see above)  
Fairfax If states are proved as plenty as Blackberries,  
I would give them a reason on compulsion.

HIGH-BLACKBERRY *Rubus villosus* of N US

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DEW-BERRY of coast and mid. x 8, US.

SALMON-BLOSSOM *Rubus Niveus*, *pubescens*, 3-8' glandular pubesc, bark becoming  
brown shaggy, fls 2' broad, color densely rose-colored, seeds so, fruit large & pleasantly flavored,  
SPT. 1840. It is a variety, blossoming at time of Salmon catch.

ARCTIC BERRY, *Rubus arcticus*, Rhind p 337

CLOUD BERRY, *Rubus chamaemorus* (Ground Huckleberry), Roebuck-B,  
Kunt-berry, Rhind p 337-8

STRAWBERRY

Rhind p 338

Ellicombe p 220-3

Shkpe The 8 prove underneath the Nettle,  
And wholesome berries their ripen best  
Neighbored by fruit of baser quality  
And so the prince observed his contemplation  
Under the veil of wildness, Henry V, act 1, sc 1.

Sheat says AS *strawberry*, as above, be the sec. of its summer to  
strawens (straw)  
p. 203

Mr's H. Jackson, *Allystrawberry*  
O marvel, fruit of harts' pause  
To reckon thee, I ask what cause  
See thee so much of ad. from bees  
At one clearly, & mixed with sweets  
With due & spice, what can that strength  
Which out of darkness, length by length  
Spin all thy shining thread of vine,  
Netting the fields in buds as thine,  
I see thy tendrils drink by sips  
From grass & velvet's smiling lips;  
I hear thy roots dig down for wells,  
Tapping the meadow's hidden cello;  
While generations of green things  
Des cended from long lines of springs  
In thee, matter can be thee to hide  
A quiet canard by these side;

I see the crawling people go  
Myrticous in ways to and fro  
Treading to right and left of thee,  
Doing thee homage wonderingly;  
I see the wild bees as they taste,  
Thy cups of honey drink, but spare,  
I mark thee bathe & bathe again  
In sweet uncalendared spring rains,  
I catch here all May has of sun  
Makes haste to have thy ripeness done  
While all her nights let devils escape  
To set & cool thy perfect shape,  
Ah, fruit of love, or cause I pause  
To dream and seek thy hidden love!  
I stretch my hand & dare to take  
The innocent of delicious growth  
On which the world all things that meet  
To make the empire thou hast spent.







NEXUSIA Alabamaensis, A Gray, Ed. 1859 by Rev. Dr. K. O. Downing, a. B. C. Miss, an  
 without waste but not yet fit for classification. Blunt to 625; 106, somewhat blunt, the glaucous  
 The stem is pale, its surface by the presence of the glands is scabrous, which is not the case in the  
 color. Gray holds it to be identical with the bones. At night to be in Alabama, and that the  
 No. 101, 102, 103, 104, 105, 106, 107, 108, 109, 110, 111, 112, 113, 114, 115, 116, 117, 118, 119, 120, 121, 122, 123, 124, 125, 126, 127, 128, 129, 130, 131, 132, 133, 134, 135, 136, 137, 138, 139, 140, 141, 142, 143, 144, 145, 146, 147, 148, 149, 150, 151, 152, 153, 154, 155, 156, 157, 158, 159, 160, 161, 162, 163, 164, 165, 166, 167, 168, 169, 170, 171, 172, 173, 174, 175, 176, 177, 178, 179, 180, 181, 182, 183, 184, 185, 186, 187, 188, 189, 190, 191, 192, 193, 194, 195, 196, 197, 198, 199, 200, 201, 202, 203, 204, 205, 206, 207, 208, 209, 210, 211, 212, 213, 214, 215, 216, 217, 218, 219, 220, 221, 222, 223, 224, 225, 226, 227, 228, 229, 230, 231, 232, 233, 234, 235, 236, 237, 238, 239, 240, 241, 242, 243, 244, 245, 246, 247, 248, 249, 250, 251, 252, 253, 254, 255, 256, 257, 258, 259, 260, 261, 262, 263, 264, 265, 266, 267, 268, 269, 270, 271, 272, 273, 274, 275, 276, 277, 278, 279, 280, 281, 282, 283, 284, 285, 286, 287, 288, 289, 290, 291, 292, 293, 294, 295, 296, 297, 298, 299, 300, 301, 302, 303, 304, 305, 306, 307, 308, 309, 310, 311, 312, 313, 314, 315, 316, 317, 318, 319, 320, 321, 322, 323, 324, 325, 326, 327, 328, 329, 330, 331, 332, 333, 334, 335, 336, 337, 338, 339, 340, 341, 342, 343, 344, 345, 346, 347, 348, 349, 350, 351, 352, 353, 354, 355, 356, 357, 358, 359, 360, 361, 362, 363, 364, 365, 366, 367, 368, 369, 370, 371, 372, 373, 374, 375, 376, 377, 378, 379, 380, 381, 382, 383, 384, 385, 386, 387, 388, 389, 390, 391, 392, 393, 394, 395, 396, 397, 398, 399, 400, 401, 402, 403, 404, 405, 406, 407, 408, 409, 410, 411, 412, 413, 414, 415, 416, 417, 418, 419, 420, 421, 422, 423, 424, 425, 426, 427, 428, 429, 430, 431, 432, 433, 434, 435, 436, 437, 438, 439, 440, 441, 442, 443, 444, 445, 446, 447, 448, 449, 450, 451, 452, 453, 454, 455, 456, 457, 458, 459, 460, 461, 462, 463, 464, 465, 466, 467, 468, 469, 470, 471, 472, 473, 474, 475, 476, 477, 478, 479, 480, 481, 482, 483, 484, 485, 486, 487, 488, 489, 490, 491, 492, 493, 494, 495, 496, 497, 498, 499, 500, 501, 502, 503, 504, 505, 506, 507, 508, 509, 510, 511, 512, 513, 514, 515, 516, 517, 518, 519, 520, 521, 522, 523, 524, 525, 526, 527, 528, 529, 530, 531, 532, 533, 534, 535, 536, 537, 538, 539, 540, 541, 542, 543, 544, 545, 546, 547, 548, 549, 550, 551, 552, 553, 554, 555, 556, 557, 558, 559, 560, 561, 562, 563, 564, 565, 566, 567, 568, 569, 570, 571, 572, 573, 574, 575, 576, 577, 578, 579, 580, 581, 582, 583, 584, 585, 586, 587, 588, 589, 590, 591, 592, 593, 594, 595, 596, 597, 598, 599, 600, 601, 602, 603, 604, 605, 606, 607, 608, 609, 610, 611, 612, 613, 614, 615, 616, 617, 618, 619, 620, 621, 622, 623, 624, 625, 626, 627, 628, 629, 630, 631, 632, 633, 634, 635, 636, 637, 638, 639, 640, 641, 642, 643, 644, 645, 646, 647, 648, 649, 650, 651, 652, 653, 654, 655, 656, 657, 658, 659, 660, 661, 662, 663, 664, 665, 666, 667, 668, 669, 670, 671, 672, 673, 674, 675, 676, 677, 678, 679, 680, 681, 682, 683, 684, 685, 686, 687, 688, 689, 690, 691, 692, 693, 694, 695, 696, 697, 698, 699, 700, 701, 702, 703, 704, 705, 706, 707, 708, 709, 710, 711, 712, 713, 714, 715, 716, 717, 718, 719, 720, 721, 722, 723, 724, 725, 726, 727, 728, 729, 730, 731, 732, 733, 734, 735, 736, 737, 738, 739, 740, 741, 742, 743, 744, 745, 746, 747, 748, 749, 750, 751, 752, 753, 754, 755, 756, 757, 758, 759, 760, 761, 762, 763, 764, 765, 766, 767, 768, 769, 770, 771, 772, 773, 774, 775, 776, 777, 778, 779, 780, 781, 782, 783, 784, 785, 786, 787, 788, 789, 790, 791, 792, 793, 794, 795, 796, 797, 798, 799, 800, 801, 802, 803, 804, 805, 806, 807, 808, 809, 810, 811, 812, 813, 814, 815, 816, 817, 818, 819, 820, 821, 822, 823, 824, 825, 826, 827, 828, 829, 830, 831, 832, 833, 834, 835, 836, 837, 838, 839, 840, 841, 842, 843, 844, 845, 846, 847, 848, 849, 850, 851, 852, 853, 854, 855, 856, 857, 858, 859, 860, 861, 862, 863, 864, 865, 866, 867, 868, 869, 870, 871, 872, 873, 874, 875, 876, 877, 878, 879, 880, 881, 882, 883, 884, 885, 886, 887, 888, 889, 890, 891, 892, 893, 894, 895, 896, 897, 898, 899, 900, 901, 902, 903, 904, 905, 906, 907, 908, 909, 910, 911, 912, 913, 914, 915, 916, 917, 918, 919, 920, 921, 922, 923, 924, 925, 926, 927, 928, 929, 930, 931, 932, 933, 934, 935, 936, 937, 938, 939, 940, 941, 942, 943, 944, 945, 946, 947, 948, 949, 950, 951, 952, 953, 954, 955, 956, 957, 958, 959, 960, 961, 962, 963, 964, 965, 966, 967, 968, 969, 970, 971, 972, 973, 974, 975, 976, 977, 978, 979, 980, 981, 982, 983, 984, 985, 986, 987, 988, 989, 990, 991, 992, 993, 994, 995, 996, 997, 998, 999, 1000.

AMERICAN CINQUE-FOILS.

By GRANT ALLEN.

YOUR American cinque-foils are to me a deeply interesting set of plants. Excuse, I beg of you, dear Mr. Reader, this abrupt beginning. I love a *causerie*: I love to button-hole my audience, as it were, and, sitting down with it mentally on a bowlder in the meadow, to discuss the matter in hand with it *tête-à-tête*, as if we two were old friends, which I trust, after all, may be really the truth with the public of "The Popular Science Monthly" on the present occasion. For, indeed, a recent visit to America has made me realize you all far better than I ever did before; it has made me feel your individuality as I never hitherto felt it; and it has also renewed with me the acquaintance of many dear old floral favorites whose faces I had not seen in earnest for many a long and weary year. Among them, the cinque-foils or potentillas are, it is true, but a feeble folk; very different from the glorious orange lilies, and trilliums, and Solomon's-seals, whose bulbs and tubers I have brought home with me to beautify a little out-of-the-way Surrey garden; but still in their own humble fashion most interesting plants, from the implications as to their past history and transformations legibly written by the hand of Nature upon their very faces. I propose, therefore (having got you now fairly button-holed), to discourse somewhat concerning the American potentillas themselves, as well as concerning certain of their near and dear relations not included in the same genus by the artificial and unwise arrangements of our existing botany.

The first potentilla I found in America was by chance the very one that ought naturally to head the tribe in any systematic work, because it is the one which more than any other seems to preserve in the greatest simplicity the original traits of the prime ancestor. And when we consider that from this ancestor are also descended (in all likelihood) the plum, the peach, the cherry, the almond, the apple, the pear, the strawberry, the raspberry, the rose, and the hawthorn, it must immediately be apparent to the meanest understanding that the plant in question deserves the greatest consideration at our hands as the founder of a large and important family. Nevertheless, this rather scrubby weed (*Potentilla Norvegica*) with its yellow flowers and hairy stem, much resembles the founders of many other distinguished families in being personally mean, sordid, and inconspicuous. But in spite of its meanness, the Norway potentilla shows many signs of its high respectability as the representative of the elder branch of the family in the direct line. To begin with, its blossoms are a shabby yellow; and shabby yellow I take to have been the original color in every instance of the earliest petals of insect-fertilized flowers. Then, again, it is an annual

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weed, and herbaceous annuals were doubtless the earliest form of all vegetation all the world over. Once more, the leaves are divided into three leaflets; and this type I take from its frequent recurrence not only among the potentillas themselves, but in the strawberries, the lady's-mantle, the simpler brambles, and many other species as well, to have been the original type of foliage for the entire rose family. Finally, certain minute technical characters in the stipules and the styles, with which I need not trouble you at the present moment, lead to the conviction that we have here to deal to some extent with a fair representative of the old ancestral potentilla form.

The Norway potentilla, however, is distinctly weedy—that is to say, it is one of those unpleasant, dusty-looking plants which loiter about on the precincts of the road-sides and in the waste purlieus of human cultivation. It attests its weediness by its bristly hairs, intended doubtless to repel insects and to make it unpalatable to cattle and horses. As its name implies, it is an Old-World form as well as a native-born American citizen; it is, in fact, a member of that ancient circumpolar pre-glacial flora which was driven down from the once mild and genial Arctic regions by the vast ice-sheet of the Glacial epoch to occupy the plain-lands of either hemisphere in these our chilly and degenerate modern summers. In Europe, however, it remains distinctly a more northern type than with you in America, where it spreads as far south as the Virginia hills.

On the Alpine tops of the White Mountains I was lucky enough to light upon another member of the potentilla group, not far removed in essentials from the Norwegian weed, but infinitely prettier, more delicate, and in a word less weedy all round. This is the plant which Asa Gray identifies with our European *Potentilla frigida* of the Swiss Alps; and I, who have a pious horror of unnecessary splitting and renaming and tinkering, have not the slightest objection to the identification in any way. But it is worth while to notice, what I often observed of almost every American species said to be identical with those of Europe, that the two plants are not absolutely the same: the time that has elapsed since the Great Ice age effectually severed the two continents has sufficed to produce distinct differences in nearly every kind of plant or animal. The flowers in the American specimens are smaller than in the Swiss, and the stems when full-grown are far less hairy.

*Potentilla frigida* exhibits all the common peculiarities of high Alpine or Arctic plants. It is a dwarf form, not one fifth the size of the Norway species; it is tufted thickly on its low stems, and it has that matted, close, creeping habit which I have already pointed out in this "Monthly" as the distinctive feature of the glacial flora. It sticks still to the three original leaflets, but its flowers, as is common in mountain types, are far larger and handsomer than those of the wayside weed with which we started our examination of the group. This Old-World

form, however, occurs nowhere in the United States except here on the topmost summits of the White Mountains, and even there it lingers on in scanty numbers, rapidly diminished by the growing warmth and the incursions of botanists. I took but a tiny spray for my own specimen, from a spot not far from Tuckerman's Ravine, and left the remainder of the plant I found there still growing. It would be a pity if these last survivors of the Glacial epoch, pushed up onto these chilly heights by the secular summer of our own day, should be exterminated by the hands of those who above all others are bound by natural piety to preserve and protect them.

All over Canada and the Northern States there grows a third and very common potentilla, the cinque-foil or "five-finger" of popular botany (*P. Canadensis*), a pretty, prostrate, creeping weed, with golden-yellow flowers springing close to the ground, and five leaflets instead of three to each leaf. Ever since the days of Linnæus this plant has been considered distinct from the common European cinque-foil (*P. reptans*), and the differences are certainly sufficient to justify their division as separate species, as systematic botany goes nowadays. Nevertheless, it is quite clear that we have here merely to deal with the American descendants of the same old circumpolar plant. No European naturalist who saw the Canadian cinque-foil for the first time would ever take it for a distinct type; if he found it growing in an English meadow, he would certainly pass it by unnoticed as the familiar cinque-foil of our eastern hemisphere. The differences can only be observed when you look closely into the plant, and they are all of easy adaptive character. In fact, we have here just the same tendency as that which we noticed in the mountain species, only carried, perhaps, one step farther. In that instance, the differences were only sufficient for systematic botanists to rank the plant as a mere variety; in this case they are sufficient to give it the dignity of a distinct species. But at bottom nobody knows what is a variety and what a species, and it is a mere matter of individual judgment whether a particular form should be regarded as one or the other. It varies "according to the taste and fancy of the speller." Oakes considered the White Mountain potentilla a distinct American species, different from the Alpine kind in Europe, and christened it, accordingly, *P. Robbinsiana*, after the first person who discovered it on these chilly hill-tops. Asa Gray regards it rather as a mere variety, though he hesitates as to whether it comes nearer to the *P. frigida* of the Alps, or to the dwarf form known as *P. minima* (itself a very ill-marked species). It is always so when you come to compare the plants or animals over a large area. However distinct they may seem in particular localities, they shade off into one another by such imperceptible degrees at distant points that the task of drawing hard-and-fast lines, so lightly undertaken by the systematic biologist, becomes at last absolutely impossible.

This very Canadian cinque-foil, for example, runs into two extreme



forms, which have each been considered by confirmed "splitters" as distinct species. The first (*P. sarmentosa*, of Muhlenberg) grows for the most part on very dry soil, and like most plants of arid situations runs largely to pronounced hairiness; for it is a general rule that water-haunting kinds are smooth and glabrous, while dry or desert types are intensely hirsute (the reason for this wide distinction, though well known, would carry us too far away, this morning, from our main subject). The second form, erected by Michaux into a separate species (*P. simplex*) but reduced to subordinate rank as a variety by Torrey and Gray, belongs to moister soil or to deep meadows, where the lush grass prevents evaporation; and this type grows less hairy and greener, and attains a larger and more luxuriant stature. The two forms differ also in other ways, strictly dependent upon their differences of locality. *Sarmentosa*, the dry type, creeps squat upon the ground, as if to avoid the sun, and sends out long, rooting runners in every direction after the fashion of the strawberry-vine; whereas, *simplex*, the moister kind, has ascending stems, which rise in competition among the grasses around them, seldom if ever creep, and never produce summer runners. Again, *sarmentosa* begins to blossom early, and ends early—April to July in the latitude of New York; while *simplex* comes and stops a month or so later at either end—May to September in the same district. In other words, the dry-type flowers early in spring on its basking banks, but retires from the scorching heat of your American summer; while the moist type begins later in its shady habitat, but is less affected by the droughts of August.

Curiously enough, our common European cinque-foil (*P. reptans*), the exact analogue of your American plant, and fellow-descendant of the self-same pre-glacial ancestor, has also two well-marked forms usually considered as distinct species, but merging into one another by imperceptible gradations. The parent-type (*reptans* proper) grows in rich pastures or meadows, and answers best to your variety *simplex*, though it sends out long, creeping stems which root every now and again at the nodes; it has five large petals to each blossom, and the flowers are identical with those of the Canadian cinque-foil. But on open moors, heaths, and dry places, we have a smaller, closer, and more creeping form, the tormentil (*P. tormentilla*); it is silky-hairy, like your own *sarmentosa*, and its upper leaves have often only three leaflets instead of five, thus reverting to the ancestral type of foliage, when the plant was rather a tre-foil than a cinque-foil. But oddest of all, the small flowers have only four petals, arranged like a Maltese cross; whereas all their congeners have their full complement of five, in accordance with the old central plan of the entire rose family. Still, the first flower of all on each stem, produced when the plant is in its vigorous youth, has occasionally five petals; a reversionary fact of great interest. The tormentil has also an intermediate variety of its

own (*Tormentilla reptans* of the hair-splitters), which sometimes creeps like the true cinque-foil, and frequently breaks out into five-petaled blossoms. Even Mr. Bentham, that minute and conservative botanist, admits that "intermediate forms" sometimes occur which can not probably be referred to either species.

And yet, though the tormentil and the cinque-foil are thus intimately connected with one another, by imperceptible gradations, so great is the love of petty distinctions in the human breast, that Linnaeus actually erected this slight, four-petaled variety, not only into a distinct species, but even into a separate genus (*Tormentilla*).

Let us return, however, to our immediate subject, the American potentillas. The next species recognized by Asa Gray is the silvery cinque-foil (*P. argentea*), a pretty little plant, with small, bright-yellow flowers, confined, for the most part, to very dry, barren, or sandy spots, and with thin, wiry, almost woody stems. It is remarkable for the soft, white, silvery down, that clothes the under side of the five-leaved foliage. The use of this down I do not know, though I suspect it to be a protection from some caterpillar or other insect, which attacks leaves on their under surface. At any rate, it is an exaggeration of the usual downiness of dry-soil species. The silvery cinque-foil is common to Europe and America, and I do not notice any perceptible difference between my English and Canadian specimens. It seems, in fact, to be one of the very few plants which have not altered to any recognizable degree on either side of the Atlantic since the end of the great Glacial epoch. As a proof, however, of the narrow way in which this dry-soil species is restricted and limited to the very sandiest and most barren situations, I may mention that it grows on two spots, and two spots only, within reach of my own home here in Surrey, England. Both these spots are knolls of a peculiarly soft and friable sandstone, into which the rain sinks immediately; and they are the only two bits of that particular formation (a subdivision of the Folkestone sands) to be found anywhere in the neighborhood.

I was shown, at Kingston, Canada, a specimen of another more weedy potentilla (*P. paradoxa*), which has hardly, as yet, made good its place in the Eastern States, but which, nevertheless, possesses a certain interest for naturalists of the Atlantic shore, as a member of the flora by which before long they are almost sure to be overrun. The species belongs to the western half of the continent, but it is already well established as an immigrant along the banks of the Ohio and the Mississippi, and it has been observed near Onecida, and elsewhere on the shores of Lake Ontario. My own specimen was gathered on a common at Kingston, where it seemed to have established itself in full vigor. Now the interest of this species centers in the fact that until lately the weeds of the Eastern States and Canada were almost entirely of European origin; they were the cosmopolitan pests of civilization, which have followed agriculture from Western Asia along

the Mediterranean to the shores of the Atlantic, and, crossing the ocean with seed-corn and fodder crops, have clogged the steps of the intrusive white man through all his colonies and settlements elsewhere. These cosmopolitan weeds succeeded in America to the soil once covered by forest-trees, whose indigenous undergrowth could not stand the garish sunlight of the open clearings. But nowadays, the weeder types of the Western prairie-belt are moving eastward, as farms move west; and being accustomed by nature to open plains, they will probably, in many cases, succeed in establishing themselves side by side with the older plagues of the long-suffering farmer. *Potentilla paradoxa* is one of the first crop of these weedy immigrants, and its appearance already on the shores of Lake Ontario is the signal for its future advance in a formed phalanx against the tilled fields of New York and New England.

This Western immigrant departs widely in one respect from the type of all the potentillas we have yet considered, and that is in the arrangement of its five, seven, or nine leaflets. In the true cinque-foils, and all their like, the leaflets are arranged, as we say, palmately—that is to say, all start together, like the lobes of a horse-chestnut leaf, from one point. In the *P. paradoxa* they are arranged pinnately—that is to say, they start in opposite pairs or singly, from a common midrib, like the barbs of a feather, or the leaflets of a locust-leaf. The same arrangement, a more convenient one for long leaves, reappears in *P. Pennsylvanica*, which (in spite of the name incorrectly bestowed upon it by Linnaeus) is a Northwestern species. But as I have not seen this last-named plant in the living state, and as I do not like to write about what I have only examined in a dried-up herbarium (a bad habit of the old-fashioned, purely structural botanists), I will say no more at present about it.

On the rocky hills of the North and West there occurs in July a rather pretty, half-shrub-like potentilla (*P. arguta*), which presents several other interesting peculiarities. This plant has brownish, hairy stems, covered with a viscid, clammy exudation, something like that which covers the young branches and buds of the clammy rose acacia (*Robinia viscosa*). As I observed that insects are often caught in this clammy secretion, exactly as in the case of the common catchflies (*Silene noctiflora* Virginia, regia, etc.), I have not the least doubt that the potentilla eats and digests the creatures it entraps, in order to supply it with nitrogenous material for its own pollen, ovules, and seeds. This is the more probable, as the clamminess increases near the flower-buds and blossoms, and is scarcely at all noticeable near the base of the stem. How the potentilla digests its food I do not know, but long observation has fully convinced me that whenever a plant has viscid, glandular hairs or secretions upon its peduncles, pedicels, calyx, and flower-buds, it is invariably an insect-catcher, and an insect-eater too. The flowers are the part that require the

most nitrogenous food, and near the flowers the nitrogen-catchers are situated.

Another peculiarity of *P. arguta* lies in its flowers, which are clustered in large and conspicuous masses, and have petals that vary from pale yellow to primrose or almost white. This is a very interesting fact, because the native color of the potentillas is yellow; but the mountain species, and many other kinds, have varied to snow-white blossoms; and here we get a plant, as it were, in the intermediate or undecided stage between the two colors. Notice, too, that *P. arguta* is an herb of the rocky hill-sides, and therefore half-way toward becoming a mountain species.

Now, on the summit of Mount Willard, just above the Notch of the White Mountains, I found another very beautiful member of this pretty group, the three-toothed cinque-foil (*P. tridentata*). This is one of our most northerly and mountain-loving potentillas, unknown in Europe, inhabiting the coast of New England from Cape Cod northward, and the mountain-tops of the great chains, from the Alleghanies to the Maine ranges, as well as in Canada, Labrador, and the extreme north of the continent. The three-toothed cinque-foil carries a step farther the same characteristic, for its flowers are pure white, as so often happens with mountain blossoms. Just in the same way, while almost all lowland buttercups are golden yellow, some of the Alpine buttercups are white as milk, and among these very potentillas there are a few lovely snow-white mountain species in Europe and Asia. One beautiful kind that I gathered on the Maritime Alps at Mentone (*P. saxifraga*) has a blossom as delicately mountainous in type as the saxifrages themselves, from which it takes its scientific name.

Of course, I don't for a moment mean it to be understood that I think *P. tridentata* is directly derived from *P. arguta*, or that the latter species is now on its way to merge into the former. My Mount Willard plant has palmate leaves of only three leaflets, while the common *P. arguta* of the northern hill-sides has pinnate leaves of from three to nine cut-edged divisions; and in many other technical points they differ widely from one another. All I mean to suggest is merely that the yellowish-white *P. arguta* is now just passing through a stage which the ancestors of *P. tridentata* must have passed through long ago. On the whole, to put it briefly, the potentillas are a yellow lot; but a few advanced members of the race are white; and still fewer, like the ornamental *P. nepalensis* and *P. atropurpurea* of our gardens, are crimson, scarlet, or bright red. So far as I know, no potentilla is ever blue, which is the highest level of floral coloration.

The three-toothed cinque-foil has an almost shrubby and woody root-stock, and displays a tendency to assume the character of a true shrub. But its northern habitat and mountain manners keep it low and tufted, after the common fashion of upland vegetation. There is another of its kind, however (*P. fruticosa*), which really grows into a



regular shrub, with many branches, terminated by large trusses of bright-yellow flowers. Asa Gray says this plant is "common northward" in wet ground, but I was not lucky enough to hit upon it during my visit to America. However, I have seen living specimens from Teesdale in England, and from them I perceive that, in general habit, the plant greatly approaches the rock-roses (*Helianthemum*), which grow in very similar situations. The leaflets of the shrubby potentilla, long, narrow, and silky beneath, resemble, at first glance, the leaves of the rock-roses, thus showing how similar conditions tend everywhere to produce similar results, even when starting from the most unlike organic forms to begin with.

One other potentilla, the goose-weed or silver-weed (*P. anserina*), I must needs mention for form's sake, though I have nothing special to say about it. It is a creeping species, growing close to the ground, with long pinnate and prostrate leaves, silvery white below, with silky down. Both in Europe and America it is very common as a road-side weed, and in moist ditches; but with us it is a weedier and scurvier plant than with you—evidently a sufferer from our long civilization. In America it grows mostly by river-banks and in brackish marshes; in Europe, it belongs rather to waste places and stony pastures than to streams or mud-banks. Few temperate plants, however, have a wider distribution. It is a circum-polar-weed in both great continents, extending through Russia and Siberia to Alaska and British America, and it reappears once more, under like conditions, in the southern hemisphere. Nothing kills it out, and it will bear both inundation and trampling under foot to a greater degree than any other plant of equal importance.

The handsomest of your American potentillas, however, is the marsh five-finger (*P. comarum* or *palustris*), a very bold and elegant water-side plant, bluish-green in stem and leaves, and with loose corymbs of exceedingly pretty though dingy flowers. The calyx, inside, is lurid-red, and the large petals are tinged with a gloomy and peculiar purple. This fine ornamental plant loves cool northern bogs and marshes, being common in Canada and in the Scotch Highlands. But what gives it to me the deepest interest is its exact resemblance in hue and general aspect to a purple avens (*Geum rivale*), also common to either hemisphere. Both are plants of the cold swamps and peaty places; both depend for fertilization upon water-side insects; both have lurid-red calyxes, and both have large and dingy purplish petals. The inference seems to me irresistible that the color has been evolved in both cases by the special tastes of the upland water-creatures to whose aid both owe the impregnation of their ova. Indeed, it is often easy thus to classify flowers functionally by their color and the tastes of the particular insects that habitually visit them. In Europe, at least, I believe the particular insect in this case to be *Rhingia rostrata*, which I have observed in great abundance upon both flowers. Amer-

ican naturalists, please verify, or look out for, the corresponding American species.

On the Alpine summits of the White Mountains, and far to the north again in the Labrador region, there grows abundantly a little matted mountain plant, not recognized by the scientific world at large as a potentilla at all, and known by the name of *Sibbaldia procumbens*. But you may call the plant whatever you like without altering the undeniable fact that it is in all essentials a dwarfed and depressed mountain potentilla, with the flowers so reduced by chilly conditions that very few stamens or carpels remain, and with the usual dense, spreading, tufty habit common to all Alpine vegetation. It is clearly descended from a high hill-side potentilla not unlike the white *P. tridentata* of Mount Willard aforesaid (only with yellow flowers), for it has the same type of tre-foil leaves, with each leaflet three-toothed at the end, and the same general aspect and habit. Both plants, I do not doubt, are common descendants of a single antique Arctic ancestor. But little *Sibbaldia* has grown so very small and degraded in time that its flowers have dwindled away almost to nothing; the green calyx forms its most conspicuous part; the pale-yellowish petals are very tiny, and in many cases are entirely wanting. In the States *Sibbaldia* is confined to the higher summits of the White Mountains; but in the Scotch Highlands, as in the far north of British America, it often constitutes for miles together the main element of the low and matted mountain greensward.

Last among your American potentillas I may mention the wild strawberries. Though these at first sight seem somewhat different from the rest of the group, I have not the slightest hesitation in saying that to the evolutionary botanist they can not but appear as closely related species of one and the same natural genus. For the strawberries are only potentillas in which the receptacle of the fruit, instead of remaining hard and dry, swells out into a colored and pulpy mass, attractive to birds, who thus aid in dispersing the tiny "achenes" or nutlets (commonly, and for all practical purposes correctly enough, described as seeds). To us in Europe, the essential identity of the two types is made all the more evident, because we happen to possess a little three-leafleted white potentilla (*P. fragariastrum*) so exactly like a wild-strawberry vine in foliage and flower that few save botanists or close observers of Nature ever adequately distinguish between them. This white potentilla is, in fact, a strawberry in everything essential except the fruit; and the succulence of the fruit (or rather receptacle) is after all a matter of comparatively little importance except to the men and birds who eat it. I am fully convinced that if the strawberry had not been an edible berry it would always have been classed merely as a potentilla, and considered as very closely analogous to the *P. fragariastrum* or "barren strawberry" of Northern Europe. It is hardly more, indeed, than a mere variety.



You have in America two slightly divergent forms of the wild strawberry, erected into species by American botanists, for small differences in the appearance of the berry. Had these differences occurred in any other than an edible fruit they would, I am sure, hardly have been noticed: occurring there, they have been suffered to assume a factitious importance in the eyes of systematizers. One of these varieties (*Fragaria vesca*), which grows in fields and open places, is the common wild strawberry of Europe; but it bears somewhat larger berries with you than with us, and has a somewhat more erect and noble habit. Apparently it is proud of its American citizenship. It is distinguished by having the nutlets merely superficial on the outside of the berry, not sunk in pits, as in the second variety. This last-named form (*F. Virginiana* or *F. Canadensis*) is peculiar to America, and differs from the European type in the constricted or bottle-shaped neck of the berry, and in the deep depressions for the nutlets, the ribs between which accordingly give the fruit a distinctly pitted or spiny appearance. It is a woodland plant, native to your forests, and far more forestine in aspect and habit than our English vine. In flavor, also, it differs distinctly, and your cultivated Virginia scarlets are its final product in the gardeners' hands. The Western variety (*Illinoensis*), according to Gray, gives origin to Hovey's seedling, the Boston pine, and many other cultivated strains. No European strawberry can at all equal these native American fruits in delicacy of flavor.

There is a third species of strawberry, undoubtedly distinct, admitted by Gray as a naturalized American, which possesses for me a peculiar interest. This is the *Fragaria Indica*, or *Duchesnea fragarioides*, a Himalayan species, established in copses round Philadelphia and at various places in the Southern States. Some years ago a plant of this curious species was sent to me in a box for identification: I set it out, on the off chance of its living, in my garden at Dorking; and it now overruns the whole place, so that I have had abundant opportunities of observing its growth and development to my heart's content. I am certain that *F. Indica* is not a true strawberry at all; or, in other words, that it is not a common descendant with the other strawberries of any original white-flowered potentilla ancestor, but an independent development of the succulent habit all by itself. It has yellow blossoms, a very different calyx, and a most insipid, pulpy fruit. I have not the slightest doubt that this species has been developed from a yellow Indian potentilla, just as our strawberries have been developed from a white European potentilla, by the unconscious agency of birds in dispersing the nutlets. All that the two plants have in common (beyond their undoubted generic potentilla type) is the mere fact of a succulent receptacle, which might just as easily occur independently in the one case as in the other. If I had to remodel the genus *Potentilla* on my own account, I would certainly put

the common strawberry into the same division as the white-flowered European *P. fragarioides*, while I would put the Indian species into the same division with the yellow-flowered *P. frigida* of your Mount Washington range.

## THE RISE OF THE GRANGER MOVEMENT.

By CHARLES W. PIERSON.

SOME wise men of the press are saying that the Knights of Labor are like the Grangers. As the exact points of resemblance are not stated, the assertion serves merely to call up a recollection of the unique secret society, which, a dozen years ago, seemed far more powerful than ever the Knights of Labor were. The Grange still lives, but its glory is departed, and its history is recorded only in the distorted statements of partisans and of misinformed review-writers.

In the latter part of 1868 certain Minnesota farmers received a printed sheet which began as follows: "In response to numerous inquiries in regard to our order, this circular is issued. The order was organized by a number of distinguished agriculturists of various States of the Union at Washington in December, 1867, and since then has met with most encouraging success, giving assurance that it will soon become one of the most useful and powerful organizations in the United States. Its grand object is not only general improvement in husbandry, but to increase the general happiness, wealth, and prosperity of the country." As an aid in accomplishing its author's design, this circular was certainly a success. As a statement of truth it was a conspicuous failure. Instead of having "met with most encouraging success," the order had scarcely been heard of; while the "distinguished agriculturists" who had "organized" it comprised one fruit-grower and six Government clerks, equally distributed among the Post-Office, Treasury, and Agricultural Departments. Of these seven Immortal Founders, as enthusiastic Grangers were calling them a few years later, six are living. Nevertheless, it is difficult to determine just how much of the plan and its execution was due to each. The truth seems to be about as follows: In 1866 one O. H. Kelley, a clerk in the Agricultural Department, was sent by the Commissioner of Agriculture on a tour of inspection through the Southern States. Impressed with the demoralization of the farming population, he hit upon the idea of organization for social and educational purposes, as a means for these people to better their condition. An ardent Mason, he naturally thought of an organization similar to the Masonic, in whose ritual, secrecy, and fraternity he saw the secret of that permanence which all agricultural societies had failed to attain. A niece in Boston, to whom he first mentioned the idea, recommended that women be given membership, thus originating an important feature.

On returning to Washington, Kelley took the other six immortals into his confidence, and the seven set about developing the plan and constructing a ritual. It would be a long story to tell how, by two years' labor in the intervals of their regular work, they constructed a constitution providing for a national, State, county, and district organization, and a ritual with seven degrees; how the names—Patrons of Husbandry for the body in general and Grangers for the subordinate chapters—were finally hit upon, the latter being taken, not on account of its etymological meaning (Latin *gratum*), but from the name of a recent novel. Suffice it to say that on December 4, 1867, a day still celebrated as the birthday of the order, the seven assembled, and, with an assurance almost sublime, solemnly organized themselves as the "National Grange of the Patrons of Husbandry." There was none to dispute the title, and they enjoyed it alone for the next five years. It is hard to tell just what were the expectations of these men. Kelley has been called everything from an unselfish philanthropist to a scheming adventurer. One can not but admire the pluck with which he persevered through great discouragements, and the unselfish spirit in which he and his fellow-workers surrendered control of the movement when it had become a power in the land. Their first step was to organize a mock Grange among their fellow-clerks and their wives, to experiment with the ritual. The experiment proving satisfactory, Kelley resigned his clerkship and started out to proclaim the Grange to the world, armed only with a few dollars and a sort of introductory letter from the other six to mankind at large.

He was not a success as a lecturer. Moreover, he made the mistake of laboring in the larger towns, instead of in the country. The four or five Granges that he coaxed into life at once proceeded to die, and he finally reached Minnesota penniless, but not discouraged. Even while the six at Washington were becoming faint-hearted, and writing to him that the landlady was pressing them grievously for hall-rent, and that it would be wise to give up the whole business, he could issue the circular with which I began, dilating upon the success of the order and the distinguished agriculturists at Washington who founded it. At his home, near Itasca, he worked on furiously, now dodging a creditor, again obliged to postpone answering letters for want of means to buy postage-stamps, till finally signs of success began to appear. He had organized a few Granges in Minnesota, and was able to detect a growing interest in other States. The prime necessity now was to encourage this feeble beginning, and by all means to keep it under the delusion that it was part of a powerful national organization. To this end every cent that could be earned or borrowed was used in distributing photographs of the founders, along with a mass of circulars and documents purporting to come from the national office at Washington. Every important question was ostensibly referred by Kelley to the Executive Committee at the same

## WATER-LILIES.

THE inconstant April mornings drop showers or sunbeams over the glistening lake, while far beneath its surface a murky mass disengages itself from the muddy bottom, and rises slowly through the waves. The tasselled alder-branches droop above it; the last year's black-lil's nest swings over it in the grape-

crowled up the water-reeds, and, clinging with heads upward, (not downward, as strangely described in a late "North British Review,") have undergone the change which symbolizes immortality; the world is transformed from spring to summer; the lily-buds are opened into glossy leaf and radiant flower, and we

## Monthly Record of Current Events.

## POLITICAL.

OUR Record is closed on the 14th of January.—The official declaration of the vote cast for Governor of each of the following States at the November (1889) elections was: Iowa, Boies (Democrat), 180,111; Massachusetts, Brackett (Republican), 127,357; Mississippi, Stone (Democrat), 84,929; New Jersey, Abbott (Democrat), 138,245; Ohio, Campbell (Democrat), 379,423; Virginia, McKinney (Democrat), 162,654.

The Senate, December 18, 1889, confirmed the nomination of David J. Brewer as Associate Justice of the Supreme Court of the United States.

The Legislature of Montana elected (January 1st and 2d) Wilbur F. Sanders and T. C. Power as United States Senators.

Carlos I. was proclaimed King of Portugal at Lisbon December 28th.

Lord Salisbury presented an ultimatum to Portugal January 11th, demanding the withdrawal of all the Portuguese forces and officials of every kind from the African provinces in dispute, saying that a failure on the part of Portugal to answer within the next twenty-four hours would result in the withdrawal of the English legation. Portugal on the following day yielded to the demands, under protest,

sunshine with the answering beauty of the Water-Lily.

Days and weeks have passed away; the wild-duck has flown onward, to dive for his luncheon in some remoter lake; the tadpoles have made themselves legs, with which they have vanished; the cad-dis-worms have sealed themselves up in their cylinders, and emerged again as winged insects; the dragon-flies have

reserving all rights of the Portuguese Crown in those territories. The Portuguese Cabinet resigned January 13th.

The French Chamber of Deputies, December 17th, refused the proposition of an amnesty to Boulanger, by a vote of 338 to 61.

The provisional Brazilian government issued a decree, December 21st, banishing the ex-Emperor Dom Pedro, together with the royal family. The grant previously offered to the Emperor and his civil allowances were cancelled.

The Spanish ministry resigned January 8d. Señor Sagasta, finding it impossible to constitute a new cabinet, resigned January 7th.

## DISASTERS.

December 13, 1889.—Explosion in Belmez mines, Spain. Ten men killed.

December 18th.—Advices received of the wreck of the bark *Tenby Castle* at Holyhead. Eleven persons drowned.

December 20th.—Collision of British steamers *Clady* and *Ile of Cyprus* off the Isle of Wight. Thirteen persons drowned.

December 22d.—Sixteen lives lost by a cave-in in the Lane Mine at Angel's Camp, California.

the night,—for it is the worst nature of a night out-doors, that sleeping seems such a waste of time,—we watched the hilly and wooded shores of the lake sink into gloom and glimmer into dawn again, amid the low splash of waters and the noises of the night.

Precisely at half-past three, a song-sparrow above our heads gave one liquid trill, so inexpressibly sudden and delicious,



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### EDITORS DRAWER.

THE Drawer will still bet on the rose. This is not a wager, but only a strong expression of opinion. The rose will win. It does not look so now. To all appearances, this is the age of the chrysanthemum. What this gaudy flower will be, daily expanding and varying to suit the whim of fashion, no one can tell. It may be made to bloom like the cabbage; it may spread out like an umbrella—it can never be large enough nor showy

enough to suit us. Undeniably it is very effective, especially in masses of gorgeous color. In its innumerable shades and changing proportions, it is a triumph of the gardener. It is a rival to the aniline dyes and to the arabic feathers. It goes along with all conceits and fantastic unrest of the decorative art. Indeed, but for the discovery of the capacities of the chrysanthemum, modern life would have experienced a fatal hitch in its development. It helps out our age of plush with a flame of color. There is nothing shamefaced

in dodging a creditor, again obliged to postpone answering letters for want of means to buy postage-stamps, till finally signs of success began to appear. He had organized a few Granges in Minnesota, and was able to detect a growing interest in other States. The prime necessity now was to encourage this feeble beginning, and by all means to keep it under the delusion that it was part of a powerful national organization. To this end every cent that could be earned or borrowed was used in distributing photographs of the founders, along with a mass of circulars and documents purporting to come from the national office at Washington. Every important question was ostensibly referred by Kelley to the Executive Committee at the same

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Days and weeks have passed away; the wild-duck has flown onward, to dive for his luncheon in some remoter lake; the tadpoles have made themselves legs, with which they have vanished; the caddis-worms have sealed themselves up in their cylinders, and emerged again as winged insects; the dragon-flies have

crawled up the water-reeds, and, clinging with heads upward, (not downward, as strangely described in a late "North British Review,") have undergone the change which symbolizes immortality; the world is transformed from spring to summer; the lily-buds are opened into glossy leaf and radiant flower, and we have come for the harvest.

We lodged, last night, in the old English phrase, "at the sign of the Oak and Star." Wishing, not, indeed, like the ancient magicians, to gather magic berry and bud before sunrise, but at least to see these treasures of the lake in their morning hour, we camped last night on a little island, which one tall tree almost covers with its branches, while a dense undergrowth of young chestnuts and birches fills all the intervening space, touching the water all around the circular, shelving shores. Yesterday was hot, but the night was cool, and we kindled a gypsy fire of twigs, less for warmth than for society. The first gleam made the dark lonely islet into a cheering home, turned the protecting tree to a starlit roof, and the chestnut-sprays to illuminated walls. Lying beneath their shelter, every fresh flickering of the fire kindled the leaves into brightness and banished into dark interstices the lake and sky; then the fire died into embers, the leaves faded into solid darkness in their turn, and water and heavens showed light and close and near, until fresh twigs caught fire and the blaze came up again. Rising to look forth, at intervals, during the night,—for it is the worst feature of a night out-doors, that sleeping seems such a waste of time,—we watched the hilly and wooded shores of the lake sink into gloom and glimmer into dawn again, amid the low splash of waters and the noises of the night.

Precisely at half-past three, a song-sparrow above our heads gave one liquid trill, so inexpressibly sudden and delicious,



that it seemed to set to music every atom of freshness and fragrance that Nature held; then the spell was broken, and the whole shore and lake were vocal with song. Joining in this jubilee of morning, we were early in motion; bathing and breakfast, though they seemed indisputably in accordance with the instincts of the Universe, yet did not detain us long, and we were promptly on our way to Lily Pond. Will the reader join us?

It is one of those summer days when a veil of mist gradually burns away before the intense sunshine, and the sultry morning only plays at coolness, and that with its earliest visitors alone. But we are before the sunlight, though not before the sunrise, and can watch the pretty game of alternating mist and shine. Stray gleams of glory lend their trailing magnificence to the tops of chestnut-trees, floating vapors raise the outlines of the hills and make mystery of the wooded islands, and, as we glide through the placid water, we can sing, with the Chorus in the "Ion" of Euripides, "O immense and brilliant air, resound with our cries of joy!"

Almost every town has its Lily Pond, dear to boys and maidens, and partially equalizing, by its annual delights, the presence or absence of other geographical advantages. Ours is accessible from the larger lake only by taking the skiff over a narrow embankment, which protects our fairyland by its presence, and eight distant factories by its dam. Once beyond it, we are in a realm of dark Lethean water, utterly unlike the sunny depths of the main lake. Hither the water-lilies have retreated, to a domain of their own. Darker than these dark waves, there stand in their bosom hundreds of submerged trees, and dismantled roots still upright, spreading their vast, uncouth limbs like enormous spiders beneath the surface. They are remnants of border wars with the axe, vegetable Witheringtons, still fighting on their stumps, but gradually sinking into the soft ooze, and ready, perhaps, when a score of centuries has piled two more

strata of similar remains in mud above them, to furnish foundations for a newer New Orleans; that city having been lately discovered to be thus supported.

The present decline in business is clear revenue to the water-lilies, and these waters are higher than usual because the idle factories do not draw them off. But we may notice, in observing the shores, that peculiar charm of water, that, whether its quantity be greater or less, its grace is the same; it makes its own boundary in lake or river, and where its edge is, there seems the natural and permanent margin. And the same natural fitness, without reference to mere quantity, extends to its children. Before us lie islands and continents of lilies, acres of charms, whole, vast, unbroken surfaces of stainless whiteness. And yet, as we approach them, every islanded cup that floats in lonely dignity, apart from the multitude, appears as perfect in itself, couched in white expanded perfection, its reflection taking a faint glory of pink that is scarcely perceptible in the flower. As we glide gently among them, the air grows fragrant, and a stray breeze flaps the leaves as if to welcome us. Each floating flower becomes suddenly a ship at anchor, or rather seems beating up against the summer wind, in a regatta of blossoms.

Early as it is, the greater part of the flowers are already expanded. Indeed, that experience of Thoreau's, of watching them open in the first sunbeams, rank by rank, is not easily obtained, unless perhaps in a narrow stream, where the beautiful slumberers are more regularly marshalled. In our lake, at least, they open irregularly, though rapidly. But, this morning, many linger as buds, while others peer up, in half-expanded beauty, beneath the lifted leaves, frolicsome as Pucks or baby-nymphs. As you raise the leaf, in such cases, it is impossible not to imagine that a pair of tiny hands have upheld it, or else that the pretty head will dip down again, and disappear. Others, again, have expanded all but the inmost pair of white petals, and these spring apart at the first touch of the

finger on the stem. Some spread vast vases of fragrance, six or seven inches in diameter, while others are small and delicate, with petals like fine lace-work. Smaller still, we sometimes pass a floflila of infant leaves, an inch in diameter. All these grow from the deep, dark water,—and the blacker it is, the fairer their whiteness shows. But your eye follows the stem often vainly into those sombre depths, and vainly seeks to behold Sabrina fair, sitting with her twisted braids of lilies, beneath the glassy, cool, but not translucent wave. Do not start, when, in such an effort, only your own dreamy face looks back upon you, beyond the gunwale of the reflected boat, and you find that you float double, self and shadow.

Let us rest our paddles, and look round us, while the idle motion sways our light skiff onward, now half-embayed among the lily-pads, now lazily gliding over intervening gulfs. There is a great deal going on in these waters and their fringing woods and meadows. All the summer long the pond is honored with successive walls of flowers. In early spring emerge the yellow catkins of the swamp-willow, first; then the long tassels of the graceful alders expand and droop, till they weep their yellow dust upon the water; then come the birch-blossoms, more tardily; then the downy leaves and white clusters of the medlar or shad-bush (*Amelanchier Canadensis* of Gray); these drooping, the roseate chalcies of the mountain-laurel open; as they fade into melancholy brown, the sweet Azalea unclases; and before its last honeyed blossom has trailed down, dying, from the stem, the more fragrant Clethra starts out above, the button-bush thrusts forth its merry face amid wild roses, and the Clematis waves its sprays of beauty. Mingled with these grow, lower, the spiræas, white and pink, yellow touch-me-not, fresh white arrowhead, bright blue vervain and skulleep, dull snakehead, gay monkey-flower, coarse eupatoriums, milk-weeds, golden-rods, asters, thistles, and a host beside. Beneath, the brilliant

scarlet cardinal-flower begins to palisade the moist shores; and after its superb reflection has passed away from the waters, the grotesque witch-hazel flares out its narrow yellow petals amidst the October leaves, and so ends the floral year. There is not a week during all these months, when one cannot stand in the boat and wreath garlands of blossoms from the shores.

These all crowd around the brink, and watch, day and night, the opening and closing of the water-lilies. Meanwhile, upon the waters, our queen keeps her chosen court, nor can one of these mere land-loving blossoms touch the hem of her garment. In truth, she bears no sister near her throne. There is but this one species among us, *Nymphaea odorata*. The beautiful little rose-colored *Nymphaea sanguinea*, which once adorned the Botanic Garden at Cambridge, was merely an occasional variety of costume. She has, indeed, an English half-sister, *Nymphaea alba*, less beautiful, less fragrant, but keeping open her fashionable hours,—not opening (according to Linnæus) till seven, nor closing till four. Her humble cousin, the yellow Nuphar, keeps commonly aloof, as becomes a poor relation, though created from the selfsame mud,—a fact which Hawthorne has beautifully moralized. The prouder Nelumbium, a second-cousin, lineal descendant of the sacred bean of Pythagoras, keeps aloof, through pride, not humility, and dwells, like a sturdy democrat, in the Far West.

But, undisturbed, the water-lily keeps her fragrant court, with few attendants. The tall pickereel-weed (*Pontederia*) is her gentleman-usher, gorgeous in blue and gold through July, somewhat rusty in August. The water-shield (*Hydroptelis*) is chief maid-of-honor; she is a highborn lady, not without royal blood indeed, but with rather a bend sinister; not precisely beautiful, but very fastidious; encased over her whole person with a gelatinous covering, literally a starched duenna. Sometimes she is suspected of conspiring to drive her mistress

from the throne; for we have observed certain slow watercourses where the leaves of the water-lily have been almost wholly replaced by the similar, but smaller, leaves of the water-shield. More rarely seen is the slender *Utricularia*, a dainty maiden, whose light feet scarce touch the water,—with the still more delicate floating white *Water-Ranunculus*, and the shy *Villarsia*, whose submerged flowers merely peep one day above the surface and then close again forever. Then there are many humbler attendants, *Potamogetons* or pond-weeds. And here float little emissaries from the dominions of land; for the fallen florets of the *Viburnum* drift among the lily-pads, with mast-like stamens erect, sprinkling the water with a strange beauty, and cheating us with the promise of a new aquatic flower.

These are the still life of this sequestered nook; but it is in fact a crowded thoroughfare. No tropic jungle more swarms with busy existence than these midsummer waters and their bushy banks. The warm and humming air is filled with insect sounds, ranging from the murmur of invisible gnats and midges, to the impetuous whirring of the great *Libellule*, large almost as swallows, and hawking high in air for their food. Swift butterflies glance by, moths flutter, flies buzz, grasshoppers and katydids pipe their shrill notes, sharp as the edges of the sunbeams. Busy bees go humming past, straight as arrows, express-freight-trains from one blossoming cove to another. Showy wasps of many species flume uselessly about, in gallant uniforms, wasting an immense deal of unnecessary anger on the sultry universe. Graceful, stingless *Sphexes* and *Ichnemouon-fies* emulate their bustle, without their weapons. Delicate lady-birds come and go to the milkweeds, spotted almost as regularly as if Nature had decided to number the species, like policemen or hack-drivers, from one to twenty. Elegant little *Lecture* fly with them, so gay and airy, they hardly seem like beetles. *Phryganeæ*, (*nés* caddisworms) *Jacéflies*,

and long-tailed *Ephemere* flutter more heavily by. On the large alder-flowers clings the superb *Desmocerus palliatus*, beautiful as a tropical insect, with his steel-blue armor and his golden cloak (*pallium*) above his shoulders, grandest knight on this Field of the Cloth of Gold. The countless fireflies which speckled the evening mist now only crawl sleepily, daylight creatures, with the lustre buried in their milky bodies. More wholly children of night, the soft, luxurious *Sphinxes* (or hawk-moths) come not here; fine ladies of the insect world, their home is among gardens and green-houses, late and languid by day, but all night long upon the wing, dancing in the air with unwearied muscles till long past midnight, and supping on honey at last. They come not here; but the nobler butterflies soar above us, stoop a moment to the water, and then with a few lazy wavings of their sumptuous wings float far over the oak-trees to the woods they love.

All these hover near the water-lily; but its special parasites are an elegant beetle (*Doracia metallica*) which keeps house permanently in the flower, and a few smaller ones which tenant the surface of the leaves,—larva, pupa, and perfect insect, forty feeding like one, and each leading its whole earthly career on this floating island of perishable verdure. The "beautiful blue damselflies" alight also in multitudes among them, so fearless that they perch with equal readiness on our boat or paddle, and so various that two adjacent ponds will sometimes be haunted by two distinct sets of species. In the water, among the leaves, little shining whirlwigs wheel round and round, fifty joining in the dance, till, at the slightest alarm, they whirl away to some safer ballroom, and renew the merriment. On every floating log, as we approach it, there is a convention of turtles, sitting in calm debate, like mailed barons, till, as we approach, they plump into the water, and paddle away for some subaqueous *Runnymede*. Beneath, the shy and stately pickerel vanishes at a

glance, shoals of minnows glide, black and bearded pouts frisk aimlessly, soft water-lizards hang poised without motion, and slender pickerel-frogs cease occasionally their submerged croaking, and, dashing to the surface with swift vertical strokes, gulp a mouthful of fresh air, and down again to renew the moist soliloquy.

Time would fail us to tell of the feathered life around us,—the blackbirds that build secretly in these thickets, the stray swallows that dip their wings in the quiet waters, and the kingfishers that still bring, as the ancients fabled, halcyon days. Yonder stands, against the shore, a bitter, motionless in that wreath of mist which makes his long-legged person almost as dim as his far-off booming by night. There poises a hawk, before sweeping down to some chosen bough in the dense forest; and there fly a pair of blue-jays, screaming, from tree to tree. As for wild quadrupeds, the race is almost passed away. Far to the North, indeed, the great moose still browses on the *Blyssops*, and the shy beaver nibbles them; but here the few lingering four-footed creatures only haunt, but do not graze upon these floating pastures. Eyes more favored than ours may yet chance to spy an otter in this still place; there by the shore are the small footprints of a mink; that dark thing disappearing in the waters, yonder, a soft mass of drowned fur, is a "musquash." Later in the season, a mound of earth will be his winter dwelling-place; and those myriad muscle-shells at the water's edge are the remnant of his banquets,—once banquets for the Indians, too.

But we must return to our lilies. There is no sense of wealth like floating in this archipelago of white and green. The emotions of avarice become almost demoralizing. Every flower bears a fragrant California in its bosom, and you feel impoverished at the thought of leaving one behind. But after the first half-hour of eager grasping, one becomes fastidious, rather scorns those on which the wasps and flies have alighted, and seeks only

the stainless. But handle them tenderly, as if you loved them. Do not grasp at the open flower as if it were a peony or a hollyhock; for then it will come off, stalkless, in your hand, and you will cast it blighted upon the water; but coil your thumb and second finger affectionately around it, press the extended forefinger firmly to the stem below, and with one steady pull you will secure a long and delicate stalk, fit to twine around the graceful head of your beloved, as the Hindoo goddess of beauty encircled with a *Lotus* the brow of Rama.

Consider the lilies. All over our rural watercourses, at midsummer, float these cups of snow. They are Nature's symbols of coolness. They suggest to us the white garments of their Oriental worshippers. They come with the white roses and prepare the way for the white lilies of the garden. The white doe of *Rylstone* and *Andrew Marvell's* fawn might fity bathe amid their beauties. Yonder steep bank slopes down to the lake-side, one solid mass of pale pink laurel, but, once upon the water, a purer tint prevails. The pink fades into a lingering flush, and the white creature floats peerless, set in green without and gold within. That bright circle of stamens is the very ring with which *Doges* once wedded the *Adriatic*, *Venice* has lost it, but it dropped into the water-lily's bosom, and there it rests forever. So perfect in form, so redundant in beauty, so delicate, so spotless, so fragrant,—what presumptuous lover ever dared, in his most enamored hour, to liken his mistress to a water-lily? No human *Blanche* or *Lilian* was ever so fair as that.

The water-lily comes of an ancient and sacred family of white-robed priests. They assisted at the most momentous religious ceremonies, from the beginning of recorded time. The Egyptian *Lotus* was a sacred plant; it was dedicated to *Harpocrates* and to the god *Nofr Atmoo*.—*Nofr* meaning *good*, whence the name of our yellow lily, *Nuphar*. But the true Egyptian flower was *Nymphaea Lo-*



tus, though *Nymphaea carulea*, Moore's "blue water-lilies," can be traced on the sculptures also. It was cultivated in tanks in the gardens; it was the chief material for festal wreaths; a single bud hung over the forehead of many a queenly dame; and the sculptures represent the weary flowers as dropping from the heated hands of belles, in the later hours of the feast. Rock softly on the waters, fair lilies! your Eastern kindred have rocked on the stormier bosom of Cleopatra. The Egyptian Lotus was, moreover, the emblem of the sacred Nile,—as the Hindoo species, of the sacred Ganges; and both the one and the other was held the symbol of the creation of the world from the waters. The sacred bull Apis was wreathed with its garlands; there were niches for water, to place it among tombs; it was carved in the capitals of columns; it was represented on plates and vases; the sculptures show it in many sacred uses, even as a burnt-offering; Isis holds it; and the god Nilus still binds a wreath of water-lilies around the throne of Memnon.

From Egypt the Lotus was carried to Assyria, and Layard found it among fir-cones and honeysuckles on the later sculptures of Nineveh. The Greeks dedicated it to the nymphs, whence the name *Nymphaea*. Nor did the Romans disregard it, though the Lotus to which Ovid's nymph Lotis was changed, *servato nomine*, was a tree, and not a flower. Still different a thing was the enchanted stem of the Lotus-eaters of Herodotus, which prosaic botanists have reduced to the *Zizyphus Lotus* found by Mungo Park, translating also the yellow Lotus-dust into a mere "farina, tasting like sweet gingerbread."

But in the Lotus of Hindostan we find our flower again, and the Oriental sacred books are cool with water-lilies. Open the Vishnu Purana at any page, and it is a *Sortes Liliannæ*. The orb of the earth is Lotus-shaped, and is upborne by the tusks of Vesava, as if he had been sporting in a lake where the leaves and blossoms float. Brahma, first incarna-

tion of Vishnu, creator of the world, was born from a Lotus; so was Sri or Lakshmi, the Hindoo Venus, goddess of beauty and prosperity, protectress of womanhood, whose worship guards the house from all danger. "Seated on a full-blown Lotus, and holding a Lotus in her hand, the goddess Sri, radiant with beauty, rose from the waves." The Lotus is the chief ornament of the subterranean Eden, Patala, and the holy mountain Meru is thought to be shaped like its seed-vessel, larger at summit than at base. When the heavenly Urvasi fled from her earthly spouse, Purúvava, he found her sporting with four nymphs of heaven, in a lake beautified with the Lotus. When the virtuous Prahlada was burned at the stake, he cried to his cruel father, "The fire burneth me not, and all around I behold the face of the sky, cool and fragrant with beds of Lotus-flowers!" Above all, the graceful history of the transformations of Krishna is everywhere hung with these fresh chaplets. Every successive maiden when she dory woods is Lotus-eyed, Lotus-nombed, or Lotus-checked, and the youthful hero wears always a Lotus-wreath. Also "the clear sky was bright with the autumnal moon, and the air fragrant with the perfume of the wild water-lily, in whose buds the clustering bees were murmuring their song."

Elsewhere we find fuller details. "In the primordial state of the world, the rudimental universe, submerged in water, reposed on the bosom of the Eternal Brahma, the architect of the world, poised on a Lotus-leaf, floated upon the waters, and all that he was able to discern with his eight eyes was water and darkness. Amid scenes so ingenuel and dismal, the god sank into a profound reverie, when he thus soliloquized: 'Who am I? Whence am I?' In this state of abstraction Brahma continued during the period of a century and a half of the gods, without apparent benefit or a solution of his inquiries, a circumstance which caused him great uneasiness of mind." It is a comfort, however, to

know, that subsequently a voice came to him, on which he rose, "seated himself upon the Lotus in an attitude of contemplation, and reflected upon the Eternal, who soon appeared to him in the form of a man with a thousand heads": a questionable exchange for his Lotus-solitude.

This is Brahminism; but the other great form of Oriental religion has carried the same fair symbol with it. One of the Bibles of the Buddhists is named "The White Lotus of the Good Laer." A pious Nepalese bowed in reverence before a vase of lilies which perfumed the study of Sir William Jones. At sunset in Thibet, the French missionaries tell us, every inhabitant of every village prostrates himself in the public square, and the holy invocation, "Oh, the gem in the Lotus!" goes murmuring over hill and valley, like the sound of many bees. It is no unmeaning phrase, but an utterance of ardent desire to be absorbed into that Brahma whose emblem is the sacred flower. The mystic formula or "mani" is imprinted on the pavement of the streets, it floats on flags from the temples, and the wealthy Buddhists maintain sculptor-missionaries, Old Mortalities of the water-lily, who, wandering to distant lands, carve the blessed words upon cliff and stone.

Having got thus far into Orientalism, we can hardly expect to get out again without some slight entanglement in philology. Lily-pads. Whence *pads*? No other leaf is identified with that singular monosyllable. Has our floating Lotus-leaf any connection with padding, or with a footpad? with the ambling pad of an abbot, or a paddle, or a paddock, or a padlock? with many-domed Padua proud, or with St Patrick? Is the name derived from the Anglo-Saxon *paad* or *peithian*, or the Greek *παρίας*? All the etymologists are silent; Tooke and Richardson ignore the problem; and of the innumerable pamphlets in the Worcester and Webster Controversy, loading the tables of school-committee-men, not one ventures to grapple with the lily-pad.

But was there ever a philological trouble for which the Sanscrit could not afford at least a conjectural cure? A dictionary of that extremely venerable tongue is an ostrich's stomach, which can crack the hardest etymological nut. The Sanscrit name for the Lotus is simply *Padma*. The learned Brahmins call the Egyptian deities Padma Devi, or Lotus-Gods; the second of the eighteen Hindoo Puranas is styled the Padma Purana, because it treats of the "epoch when the world was a golden Lotus"; and the sacred incantation which goes murmuring through Thibet is "Om mani padme boum." It would be singular, if upon these delicate floating leaves a fragment of our earliest vernacular has been borne down to us, so that here the schoolboy is more learned than the savans.

This lets us down easily to the more familiar uses of this plant divine. By the Nile, in early days, the water-lily was good not merely for devotion, but for diet. "From the seeds of the Lotus," said Pliny, "the Egyptians make bread." The Hindoos still eat the seeds, roasted in sand; also the stalks and roots. In South America, from the seeds of the Victoria (*Nymphaea Victoria*, now *Victoria Regia*) a farina is made, preferred to that of the finest wheat,—Bonpland even suggesting to our reluctant imagination Victoria-pies. But the European species are used, so far as we know, only in dyeing, and as food (if the truth be told) of swine. Our own water-lily is rather more powerful in its uses; the root contains tannin and gallic acid, and a decoction of it "gives a black precipitate, with sulphate of iron." It graciously consents to become an astringent, and a styptic, and a poultice, and, banished from all other temples, still lingers in those of *Æsculapius*.

The botanist also finds his special satisfactions in our flower. It has some strange peculiarities of structure. So loose is the internal distribution of its tissues, that it was for some time held doubtful to which of the two great vegetable divisions, exogenous or endogenous,



it belonged. Its petals, moreover, furnish the best example of the gradual transition of petals into stamens,—illustrating that wonderful law of identity which is the great discovery of modern science. Every child knows this peculiarity of the water-lily, but the extent of it seems to vary with season and locality, and sometimes one finds a succession of flowers almost entirely free from this confusion of organs.

Our readers may not care to know that the order of Nymphaeaceae "differs from Ranunculaceae in the consolidation of its carpels, from Papaveraceae in the placentation not being parietal, and from Nelumbiaceae in the want of a large truncated disc containing monospermous achenia"; but they may like to know that the water-lily has relations on land, in all gradations of society, from poppy to magnolia, and yet does not conform its habits precisely to those of any of them. Its great black roots, sometimes as large as a man's arm, form a network at the bottom of the water. Its stem bears, an airy four-celled tube, adapting itself to the depth, though never stiff in shallows, like the stalk of the yellow lily; and it contracts and curves when seed-time approaches, though not so ingeniously as the spiral threads of the European Vallisneria, which uncoil to let the flowers rise to the surface, and then cautiously retract, that the seeds may ripen on the very bottom of the lake. The leaves show beneath the magnificer beautiful adaptations of structure. They are not, like those of land-plants, constructed with deep veins to receive the rain and conduct it to the stem, but are smooth and glossy, and of even surface. The leaves of land-vegetation have also thousands of little breathing-pores, principally on the under side: the apple-leaf, for instance, has twenty-four thousand to a square inch. But here they are fewer; they are wholly on the upper side, and, whereas in other cases they open or shut according to the moisture of the atmosphere, here the greedy leaves, secure of moisture, scarcely deign to close them. Nevertheless,

even these give some recognition of hygrometric necessities, and, though living on the water, and not merely christened with dewdrops' like other leaves, but baptized by immersion all the time, they are yet known to suffer in drought and to take pleasure in the rain.

We have spoken of the various kindred of the water-lily; but we must not leave our fragrant subject without due mention of its most magnificent, most lovely relative, at first claimed even as its twin sister, and classed as a Nymphaea. We once lived near neighbor to a Victoria Regia. Nothing, in the world of vegetable existence, has such a human interest. The charm is not in the mere size of the plant, which disappoints everybody, as Niagara does, when tried by that sole standard. The leaves of the Victoria, indeed, attain a diameter of six feet; the largest flowers, of twenty-three inches,—less than four times the size of the largest of our water-lilies. But it is not the mere looks of the Victoria, it is its life which fascinates. It is not a thing merely of dimensions, nor merely of beauty, but a creature of vitality and motion. Those vast leaves expand and change almost visibly. They have been known to grow half an inch an hour, eight inches a day. Rising one day from the water, a mere clenched mass of yellow prickles, a leaf is transformed the next day to a crimson salver, gorgeously tinted on its upturned rim. Then it spreads into a raft of green, armed with long thorns, and supported by a frame-work of ribs and cross-pieces, an inch thick, and so substantial, that the Brazil Indians, while gathering the seed-vessels, place their young children on the leaves;—*grapes*, or water-platter, they call the accommodating plant. But even these expanding leaves are not the glory of the Victoria; the glory is in the opening of the flower.

We have sometimes looked in, for a passing moment, at the green-house, its dwelling-place, during the period of flowering,—and then stayed for more than an hour, unable to leave the fascinating

scene. After the strange flower-bud has reared its dark head from the placid tank, moving it a little, uneasily, like some imprisoned water-creature, it pauses for a moment in a sort of dumb despair. Then trembling again, and collecting all its powers, it thrusts open, with an indignant jerk, the rough calyx-leaves, and the beautiful disrobing begins. The firm, white, central cone, first so closely infolded, quivers a little, and swiftly, before your eyes, the first of the hundred petals detaches its delicate edges, and springs back, opening towards the water, while its white reflection opens to meet it from below. Many moments of repose follow,—you watch,—another petal trembles, detaches, springs open, and is still. Then another, and another, and another. Each movement is so quiet, yet so decided, so living, so human, that the radiant creature seems a Musidora of the water, and you almost blush with a sense of guilt, in gazing on that peerless privacy. As petals by petals slowly opens, there still stands the central cone of snow, a glacier, an alp, a Jungfrau, while each avalanche of whiteness seems the last. Meanwhile, a strange rich odor fills the air, and Nature seems to concentrate all fascinations and claim all senses for this jubilee of her darning.

So pass the enchanted moments of the evening, till the fair thing pauses at last, and remains for hours unchanged. In the morning, one by one, those white petals close again, shutting all their beauty in, and you watch through the short sleep for the period of waking. Can this bright transfigured creature appear again, in the same chaste beauty? Your fancy can scarcely trust it, fearing some disastrous change; and your fancy is too true a prophet. Come again, after the second day's opening, and you start at the transformation which one hour has secretly produced. Can this be the virgin Victoria,—this thing of crimson passion, this pile of pink and yellow, relaxed, expanded, voluptuous, lolling languidly upon the water, never to rise again? In this short time every tint of every petal

is transformed; it is gorgeous in beauty, but it is "Hebe turned to Magdalen."

But our rustic water-lily, our innocent Nymphaea, never claiming such a hot-house glory, never drooping into such a blush, blooms on placidly in the quiet waters, till she modestly folds her leaves for the last time, and bows her head beneath the surface forever. Next year she lives for us only in her children, fair and pure as herself.

Nay, not alone in them, but also in memory. The fair vision will not fade from us, though the paddle has dipped its last crystal drop from the waves, and the boat is drawn upon the shore. We may yet visit many lovely and lonely places,—meadows thick with violet, or the homes of the shy Rhodora, or those sloping forest-haunts where the slight Linnea hangs its twin-born heads,—but no scene will linger on our vision like this annual Feast of the Lilies. On scorching mountains, amid raw prairie-woods, or upon the regal ocean, the white pagodas shall come back to us again, with all the luxury of summer fests, and all the fragrant coolness that can relieve them. We shall fancy ourselves again among these fleets of anchored lilies,—again, like Urvasi, sporting amid the Lake of Lotuses.

For that which is remembered is often more vivid than that which is seen. The eye paints better in the presence, the heart in the absence, of the object most dear. "He who longs after beautiful Nature can best describe her," said Bettine; "he who is in the midst of her loveliness can only lie down and enjoy." It enhances the truth of the poet's verses, that he writes them in his study. Absence is the very air of passion, and all the best description is *in memoriam*. As with our human beloved, when the graceful presence is with us, we cannot analyze or describe, but merely possess, and only after its departure can it be portrayed by our yearning desires; so is it with Nature: only in losing her do we gain the power to describe her, and we are introduced to Art, as we are to Eternity, by the dropping away of our companions.

## FIFTY AND FIFTEEN.

With gradual gleam the day was dawning,  
Some lingering stars were seen,  
When swung the garden-gate behind us,—  
He fifty, I fifteen.

The high-topped chaise and old gray pony  
Stood waiting in the lane:  
Idly my father swayed the whip-lash,  
Lightly he held the rein.

The stars went softly back to heaven,  
The night-fogs rolled away,  
And rims of gold and crowns of crimson  
Along the hill-tops lay.

That morn, the fields, they surely never  
So fair an aspect wore;  
And never from the purple clover  
Such perfume rose before.

O'er hills and low romantic valleys  
And flowery by-roads through,  
I sang my simplest songs, familiar,  
That he might sing them too.

Our souls lay open to all pleasure,—  
No shadow came between;  
Two children, busy with their leisure,—  
He fifty, I fifteen.

\* \* \* \* \*

As on my couch in languor, lonely,  
I weave beguiling rhyme,  
Comes back with strangely sweet remembrance  
That far-removéd time.

The slow-paced years have brought sad changes,  
That morn and this between;  
And now, on earth, my years are fifty,  
And his, in heaven, fifteen.

ROSA



*R. lucida*, most com Am. n. of dry soils; *Dwarf Rose*,  
varies greatly in wet soil, its leaves these having  
beca. desc. as diff. sp.; blooms May to July.

*R. Carolina* *Strawberry Rose*, blooms June to Sept. To Fla.

*R. blanda* *Bushy Rose*, nearly unarmed; glaucous calyx  
w. pink; extends E. to Cal. & to Hudsonsb.

*R. cinnamomea* *Cinnamon Rose*, closely related to *Rub.*; fd. in  
Eu. and in *P. Baccaro*; introd. in Am. as orn. pl. for old country pas-  
sions; brownish red bark, few prickles, small double but body  
shaped. fls. with cinnamon-like fragrance.

*R. setigera* *Prairie, Michigan or Climbing Rose*, only Am. Climbing  
rose native; bushes show 15-20" long in Am.; stem, peevish straight prickles;  
3-5 leaflets; abundant fls. in July, deep rose changing to white; unlike any  
other native sp. It has styles united into a column & projecting beyond calyx-tube.  
Common in wild soil to us to W.V. To it *Bowl Rose* at B. & others  
And the name of *Climbing* likely to Com. or the pub. by covering; best in the  
Queen of the Prairie, red, from in any soil  
*Baltimore Belle*

*R. rubiginosa*, *Sweetbrier* or *Sylvestris*, the last name applied to it,  
may be treated much higher

*R. wichuraiana*

*R. canina* *Dogrose* of Eu., the common briar of Eng., largely used  
as rose on which to bud the true roses; close to *Sweetbrier* but without aromatic  
plants; fd. thorny. Eu. & *R. lucida* in Eu. the rose hips are sep. to the hairy stems, no pubescent  
blossom in either's weight of sugar, used as vehicle for medicines.

*R. alba* *White Rose* far exceed Eu., very com. the dogrose; plants rise  
to semi white bush varieties of gardens

*R. eglantheria* *Yellow Briar* closely related to the *Sweetbrier*; produces  
double yellow, but varieties, best the  
*Hansel's Yellow*

*R. virginianella* *Bluish Rose* at com. Eu. Asia, parent of the prized  
*Scotch Roses*, little removed for the present, 1-2, exceedingly prickly, usually  
unarmed, mucous leaflets; anal fls. abdt. all along the stem, 2 cokes cardiac  
than other garden roses; 1st double var. com. to near *Bardet*, a large purple  
size by seed to 100-100 named white, pink & red varieties; as  
*Centrose of Glasgow* & *White*  
*Head*, *purple white*  
*Yellow Scotch*

*R. subspicata* *Yellow Rose* of Persia, the last rose, also called the  
*Rose of Persia*; large but double yet not, but, compound; heavily  
cut, little hairy, buds opening bet. opening

*R. Gallica* *Provence Rose*, the rose, source of many com. true gar-  
den varieties; red rose leaves of *Augusta* but resembling, to unimpaired that this (the *Provence* rose)  
*Green* black rose, *R. Ch. cinnamomea*, calyx-like shrub by a broad, serrated ovary,  
rather than by the true involucre of true roses

*R. coriaria* *Hundred-leaved Rose*, sometimes used as source of rose-water, fls.  
pink to 2 palms water plant in a 240; 1 fl. rose proper, flattened etc.  
*Cabbage Rose* den. to it

*Pampouze* or *Bureau Rose* also dwarf, small flower

*R. damascena* *Damask Rose*

*R. muscosa* *Mass Rose*; orig. var. introd. to Fla. by Eng. (1856); only 1  
kn. till this cy, a var. suggested by any of the 100 since, *Good rose* var.  
*Celine M.R.*  
*Loane's M.R.*





Leg'd ya by blacken; Eliza, believed on the loss of a favor, says, asked Jove to cut the only on  
5. leg. of his beauty; 1. 20. 116, 120. 121. 122. 123. 124. 125. 126. 127. 128. 129. 130. 131. 132. 133. 134. 135. 136. 137. 138. 139. 140. 141. 142. 143. 144. 145. 146. 147. 148. 149. 150. 151. 152. 153. 154. 155. 156. 157. 158. 159. 160. 161. 162. 163. 164. 165. 166. 167. 168. 169. 170. 171. 172. 173. 174. 175. 176. 177. 178. 179. 180. 181. 182. 183. 184. 185. 186. 187. 188. 189. 190. 191. 192. 193. 194. 195. 196. 197. 198. 199. 200. 201. 202. 203. 204. 205. 206. 207. 208. 209. 210. 211. 212. 213. 214. 215. 216. 217. 218. 219. 220. 221. 222. 223. 224. 225. 226. 227. 228. 229. 230. 231. 232. 233. 234. 235. 236. 237. 238. 239. 240. 241. 242. 243. 244. 245. 246. 247. 248. 249. 250. 251. 252. 253. 254. 255. 256. 257. 258. 259. 260. 261. 262. 263. 264. 265. 266. 267. 268. 269. 270. 271. 272. 273. 274. 275. 276. 277. 278. 279. 280. 281. 282. 283. 284. 285. 286. 287. 288. 289. 290. 291. 292. 293. 294. 295. 296. 297. 298. 299. 300. 301. 302. 303. 304. 305. 306. 307. 308. 309. 310. 311. 312. 313. 314. 315. 316. 317. 318. 319. 320. 321. 322. 323. 324. 325. 326. 327. 328. 329. 330. 331. 332. 333. 334. 335. 336. 337. 338. 339. 340. 341. 342. 343. 344. 345. 346. 347. 348. 349. 350. 351. 352. 353. 354. 355. 356. 357. 358. 359. 360. 361. 362. 363. 364. 365. 366. 367. 368. 369. 370. 371. 372. 373. 374. 375. 376. 377. 378. 379. 380. 381. 382. 383. 384. 385. 386. 387. 388. 389. 390. 391. 392. 393. 394. 395. 396. 397. 398. 399. 400. 401. 402. 403. 404. 405. 406. 407. 408. 409. 410. 411. 412. 413. 414. 415. 416. 417. 418. 419. 420. 421. 422. 423. 424. 425. 426. 427. 428. 429. 430. 431. 432. 433. 434. 435. 436. 437. 438. 439. 440. 441. 442. 443. 444. 445. 446. 447. 448. 449. 450. 451. 452. 453. 454. 455. 456. 457. 458. 459. 460. 461. 462. 463. 464. 465. 466. 467. 468. 469. 470. 471. 472. 473. 474. 475. 476. 477. 478. 479. 480. 481. 482. 483. 484. 485. 486. 487. 488. 489. 490. 491. 492. 493. 494. 495. 496. 497. 498. 499. 500. 501. 502. 503. 504. 505. 506. 507. 508. 509. 510. 511. 512. 513. 514. 515. 516. 517. 518. 519. 520. 521. 522. 523. 524. 525. 526. 527. 528. 529. 530. 531. 532. 533. 534. 535. 536. 537. 538. 539. 540. 541. 542. 543. 544. 545. 546. 547. 548. 549. 550. 551. 552. 553. 554. 555. 556. 557. 558. 559. 560. 561. 562. 563. 564. 565. 566. 567. 568. 569. 570. 571. 572. 573. 574. 575. 576. 577. 578. 579. 580. 581. 582. 583. 584. 585. 586. 587. 588. 589. 590. 591. 592. 593. 594. 595. 596. 597. 598. 599. 600. 601. 602. 603. 604. 605. 606. 607. 608. 609. 610. 611. 612. 613. 614. 615. 616. 617. 618. 619. 620. 621. 622. 623. 624. 625. 626. 627. 628. 629. 630. 631. 632. 633. 634. 635. 636. 637. 638. 639. 640. 641. 642. 643. 644. 645. 646. 647. 648. 649. 650. 651. 652. 653. 654. 655. 656. 657. 658. 659. 660. 661. 662. 663. 664. 665. 666. 667. 668. 669. 670. 671. 672. 673. 674. 675. 676. 677. 678. 679. 680. 681. 682. 683. 684. 685. 686. 687. 688. 689. 690. 691. 692. 693. 694. 695. 696. 697. 698. 699. 700. 701. 702. 703. 704. 705. 706. 707. 708. 709. 710. 711. 712. 713. 714. 715. 716. 717. 718. 719. 720. 721. 722. 723. 724. 725. 726. 727. 728. 729. 730. 731. 732. 733. 734. 735. 736. 737. 738. 739. 740. 741. 742. 743. 744. 745. 746. 747. 748. 749. 750. 751. 752. 753. 754. 755. 756. 757. 758. 759. 760. 761. 762. 763. 764. 765. 766. 767. 768. 769. 770. 771. 772. 773. 774. 775. 776. 777. 778. 779. 780. 781. 782. 783. 784. 785. 786. 787. 788. 789. 790. 791. 792. 793. 794. 795. 796. 797. 798. 799. 800. 801. 802. 803. 804. 805. 806. 807. 808. 809. 810. 811. 812. 813. 814. 815. 816. 817. 818. 819. 820. 821. 822. 823. 824. 825. 826. 827. 828. 829. 830. 831. 832. 833. 834. 835. 836. 837. 838. 839. 840. 841. 842. 843. 844. 845. 846. 847. 848. 849. 850. 851. 852. 853. 854. 855. 856. 857. 858. 859. 860. 861. 862. 863. 864. 865. 866. 867. 868. 869. 870. 871. 872. 873. 874. 875. 876. 877. 878. 879. 880. 881. 882. 883. 884. 885. 886. 887. 888. 889. 890. 891. 892. 893. 894. 895. 896. 897. 898. 899. 900. 901. 902. 903. 904. 905. 906. 907. 908. 909. 910. 911. 912. 913. 914. 915. 916. 917. 918. 919. 920. 921. 922. 923. 924. 925. 926. 927. 928. 929. 930. 931. 932. 933. 934. 935. 936. 937. 938. 939. 940. 941. 942. 943. 944. 945. 946. 947. 948. 949. 950. 951. 952. 953. 954. 955. 956. 957. 958. 959. 960. 961. 962. 963. 964. 965. 966. 967. 968. 969. 970. 971. 972. 973. 974. 975. 976. 977. 978. 979. 980. 981. 982. 983. 984. 985. 986. 987. 988. 989. 990. 991. 992. 993. 994. 995. 996. 997. 998. 999. 1000.

Myriam, in the same way, but it is not to be taken as a rose, but as a  
"The young sylphs that cause the air  
And bid the opening rose expand, had become the erect increase of its leaves."

In Origin, The Gr. Rose is an Alder from *Rhodon*, & the *Rosier*, both  
are originally Latin words; both names & plants thus come to Gr. thro' the  
Armenian & Phrygian thro' Media, *Rosha*, Media, to this the name is traced  
to Armenia; to Phrygia; to Thracia, indicated by Ptolemy's rose-planting there,  
& her eye Rhodope transf'd there; to Macedonia, where Sappho & subsequent, made it it;  
& the myths of the R. give an echo of the Phrygian, & Thracian, of nature, *Rosha*, & *Rosha*  
such early word *Rosha* means *Rosha*, or *Rosha*.

In the Bible, Hosea, vi, 5, 7th cy, - "I will be as the deer unto Israel  
& he shall bloom like the rose; *Luther's* rose; he shall grow as the lily," *Isaiah*;  
Hebr. *rosan, rosannah* = *rosan* = fire-lily. Rabbinal *rosan*, = rose is wrong;  
was followed by Luther regularly, *Hosea*,

Isa. lxxviii, 1, 2, "I saw a flower in Sharon, & a <sup>rose</sup> lily in the valley" *Luther's*;  
lily of the valley, Eng., = fire-lily. Rose of Sharon, a *Honey* *Hosea*,

Thus no true reference to the Rose in the Bible until the Apocrypha, of Gre-  
cious age. Gr. more than any other, or the R. than the Hebr. rose; hence it  
is not a feasible plant.

In Egypt, Absent in any painting & sculpture; hence not by the  
Cgyptians, except the flower of the lily (the *Rosha*), whose she feared *Antioch* to be  
covered 30 *Rosha* to R. *Rosha*, R. to R. were bred to sell in Rome in winter, *Antioch*.

In Persia, its home. Of *Behran*, *Ritter*, "The rose flourishes here in  
a perfection unknown elsewhere in the world. Nowhere is it so extensively  
planted, nor so highly valued. Gardens & courts are filled with R; roses  
are crowded with R pots, & R are between in the paths & completely removed  
for the ever blossoming bushes. Even the *kalium* (kind of hookah) of the  
poorest smoker in P is decorated with the *Rosha* R, & the color of R pendant.

In the Herodotus, Babylonians had the use of the R. In the Medo-Persians;  
in B. says H., "has on his staff the figure of either an apple, a rose, a  
*rosan*, an eagle or some other object."

In Syria Antiochus the Great, a true *Antiochian* deposed, after being  
in Rome, only the lily, had roses of silk embroidered, or gold put up on the *Antioch*,  
who is a *Antiochian* rose; & these enjoyed Lev money, even R in winter; the *Antioch*  
seen above *Antioch* rose; the *Antioch* by his own use; adds the *Antioch*, *Antioch*.



...  
[... of the R [Garden rose of the East] into it by six varieties which it  
poss. the Lily; from these both have spread without further change, one  
the world. In. It now varieties were paid, succeeding each other,  
that of Cypripedium first, of Praeneste last, thus keeping in them only  
all the year; Cypripedium the *Rose of the East*; Praeneste R were found  
ed for floral R to a y.

Florus' *Cassides*, in those *Rosa, rosea Rosa*, occurs as a term of exclamation;  
Cicero associates the rose with luxury, saying "The frugitude of  
Regulus made him happier than R Thonius willing would have."  
Virgil uses the rose by which to fence his highest compliments for the  
beauty of Juno's Veil.

Virgil, propitiator of Sily, in imitation of Ethiopian kings, rode in a litter,  
the cushions of which were stuffed w roses, & held to his nose a net of fine  
lace filled with roses."

Blagie poets & lyrics show the rose in it, as emblem of love & pleas-  
ure; "the fortune board is hidden under roses; lovers lie on roses; the floor  
is strewed with R; dancing flute players, by roses serve the wine, all are over-  
stated w R; drinker caroms himself & wine cup both w R; R the road  
of the senses are inseparable."

R also the fire of the tomb; R & tears symbolize the dead; proved to be con-  
sistent by nos, epigrams, "For the rose that issued to the blood of the dying  
god of nature is as fleeting as it is fair (*rose*); "If thou hast passed by a  
rose, seek it not again," for *rose*; "There is no rose at 100 d." "The R says  
the poet the *Rose of the East* culture of it, life, & for the sake of the rose  
were killed, (it is) killed for the roses of the world, by the pains shadow in  
the *Rose of the East*."

Rose in only essences, sweet victors & ornaments; *Rosea* & *Rosaria*  
in pharmacy & epicurean kitchens; *Rosarium* abundant, as did Lily beds;  
you dice of both sold by *Flowersellers*; Best fall *Repub*, *Vaine* advises  
suburban cult of R & lilies as profitable; extensive *shades* as *form* way  
as *Causonia* & *Pactum* great in the R to the rich's *own* capital."

*Luxury of Rump*; *Seneca* complains "Dost thou rob to desire R in  
winter live contrary to nature?" *Macedonia* mentions as parallel re-  
quirements of luxury, "Roses in summer & roses in winter." *Martial*  
reports winter R were first in ships for Eg, & that *Rallies* were *pro* and  
glad in Rome. *Emp* & *Illus Venus* invented a new kind of bed, stuffed w  
R lvs, for wh the white parts had been taken away; covered w a carpet of  
Lily leaves, the whole enclosed in a fine net. He lay at table on cushions  
stuffed w *Washed R* and *Lilies*. Still more extravagant was *Heliosphorus*,  
emperor of Syrian origin; caused all the *place* roses to be conveyed w R,  
Lilies, *Pinks*, *Hyacinths*, *Marigolds*; his guests were so dglly imbedded in the  
whol reclining at table, that some of them, being *poor* lury w wine, were  
unable to rise, & d. suffocated." The *recess* *ptg*, *Roses of Hell*, exhibited  
Feb 38 in NY, shows some of the *revelers* lying *bed* covered *and* *enclous*  
drip at a *sawdust*, on wh a *folks* *attend* *improved* by the *Emp* *palis*  
his nose, is *showing* more R by the *bushel* basket.

*LA AND EGES* A R Lily continued to be cult; medicinal pro-  
perties made abundant use of R in *deser*; both adopted for the *Virgin*, her  
beauty & piety, symbolized by the R, her heavenly purity the L,  
Catholic cult advanced to mystic R at *stose*; Used in heraldry; as the  
Red & White R of Eng;

The Golden Rose of the Pope; on 4th Sun in Lent the Pope in white,  
would consecrate on the altar of a chapel adorned with R, but the college of  
Cardinals a golden R; this was always granted as a blessing to princes  
& prelates, even to Christians. Pope dipped the R in balsam, sprinkled  
it w holy wine & incense, & prayed to Christ as the *King* of the *field* of the  
of the Valley. *Stly* bet *Refu*, *Frede* the *Wise*, elector of *Rax*, won the *Golden*  
*Rose* w late, to the ill-fated *Carlota* of *Mex*, & *Isabella II* of *Sp*. *Cur*  
rent traceable to time of *Lual*, 16th c; due to *ave* *Roma* conception of  
the R as symbol of life & inevitableness, rob in the hand of a *que* ex-  
pressed both his glory & joy, & his mortality & humility.

The *Rosalia*, female fairs or *synops* of the fields & woods in  
spring, among the White & rose of the Little Russians, *exp* *1862*  
by *Mildesich* to one origin & name to the *Roman* *Rosalia*, *Rosaria*, or  
R festivals, still celebr, shortly bet the fall, in May & June; when the *month*  
were *dear* w R, & *social* *travels* in wh R, *product* of the *season*, were *pre*  
*sented* to the *gods*. So long *lived* a *dile* of *Illyria* *pa*, & in  
*Parabe*, such *epg* & *social* *festivals* were held, *with* name *Rosa* *with* *par*,  
no doubt in *certain*, of *Dionysiac* sun, *festive* *travels* *and* *the* *Thy* *chae* *pyg*,  
& the enjoyment of R inseparable to them.

In *China*, *Whit* *month* *and* *and*  
in *May* & *inherited* the *Rosalia*; was called *pascha* *pascha* *or* *pascha*  
to this day is called by *Roman* *pascha* *pascha* *or* *pascha* *or* *pascha*  
*cupido*; & as *W-day*, the so-called *Roman* *de* *ros*, *R* were *let* *down* to  
the people for the *rest* of *chs*. *Att*, when in *6th* *cg*, *Slav* *crossed* *into*  
the *Ad* *in* *Danube* *etc*, having betw *heathenism* & *Christ*; the *Chr* *W-*  
*tide*, w *Rose* *feast*, naturally *fixed* to the *heathen* *Synops* of the *Thy*  
*barbarians*; and was called *Rosalia* *among* the *Slavs*, *Serbs*, *White*  
*Little* *Russians*, & *Slovaks*. The *Chr* & *Slav* *Slav* *slaves* *was* *bound*  
to *observe* & *integrated* self-invented *oacles* at this *feast*; & out of *old*  
*feast* was developed the *Rosalia*, their *mystic* *counterpart*.

In *Ger* too the *Sar* *R* & *Ital* *R* festival became mingled w the *Old* *German*  
notion of a *light* betw *Winter* & *Summer*; a *Ger* *word* the *fest* *R*  
*Rosalia* *may* *then* the *Celtic* *Roman* *Devo* (Italy).

In Turkey the old Persians used to say that the  
Constitutions, that the Turks did not let a Rose lie on the bed, below the  
R. spring in the days of sweet that spring to the woods here.

Now by the travels across the so-called grove of Allah's Blessing, near  
mid Balh, one Baotraj the wonder-working Red Rose, still survives,  
she really seemed to him to excel all else in color & cost, & she had been  
so planted elsewhere, as the local Ishamite legend says they do divine numbers.

### The Rose of Eden

An Arabic Legend

Fair Eve laid by the guarded gates, in the plain of the Barten's spring,  
She saw the flush of the Angels' sword & the sheen of the Angels' wings;  
She thought as the bold bee sipping breath, she could bear the happy sip  
Of the tiny violets that fed the mosses of Paradise,  
She knew how the birds were fluttering among the clustered flowers,  
And gurgling Worms and arching bees that shad the Eden's bowers,  
And she cried aloud in an agony of wild, remorseful prayer,  
'Give me one bud, but one, from the thousands that blossom there!  
He turned as he heard her piteous voice, in his grave angelic pose,  
And he looked with a wistful tenderness on the beautiful woman's face;  
And because it was it so beautiful, & because she could not see  
How fair were the pure white cyclamens, crushed dying at her knee,  
And because he knew this punishment that the weary years must bring,  
That thus all things sweet & good on earth her heart would for Eden bring,  
He plucked a rich, red ROSE that grew where the four great rivers meet,  
And hung it with frail fatal hands that clasped in plaining, wet  
No robe but the maugra's eye, not that rose in the dust but him,  
With her own voice it at her breast when she passed from life and pain  
There is never a daughter of Eve, but once, ere the tale of her day is done,  
She will know the scent of the Eden rose, just once beneath the sun!  
And whatever else she may win or lose, endure or do, or dare,  
She will never forget the enchantment it gave to the common air,  
For the world may give her content or joy, fame, sorrow or sacrifice  
But the brow that brought the scent of the rose, she lived it in  
Paradise!

Song of Roland

O Einhard, disclose The meaning & the mystery of the Rose!  
And trembling be made answer, In good sooth its mystery is love, its meaning, youth!

The odors from the censens white  
Of wave-sounding Lillies and of wind-sounding Roses!

Love comes like flowers in the night

Scatter upon me ROSE leaves, They cool me where my sleep,  
My cochato, creamy white, With ROSES under his feathers,  
Willscey, "Cleopatra"



**The Moon.**  
 Written for THE EVENING STAR.  
 June claims the rose,  
 But the May month knows  
 Who warmed his heart to blushes—  
 Who kissed it off.  
 With sunbeams soft  
 In depths of its green buxals.  
 May's silvery rain,  
 With low refrain,  
 Its tender petals parted;  
 May's poplars coy  
 To waltz by  
 Wood-roses crimson-hearted.  
 May's madrigal  
 (The sky-lark's call)  
 Thrilled virgin rose-buds sleeping;  
 Pure, white as snow,  
 Like vesals, grow  
 Such roses, vigil keeping.  
 May's moon-light glanced  
 Through leaves entranced  
 And flushed, like maiden dressing,  
 June's favorite flower,  
 In May's dim bowen,  
 Open to love's tender seeming.  
 June claims the rose;  
 But the May month knows,  
 And vows it o'er and over  
 To sun and moon,  
 To stars of June,  
 That May's the rose's lover.  
 —MARIE LE BARON.

**A DEAD ROSE.**

BY MRS. ELIZABETH BARRETT BROWNING.

O Rose! who dares to name thee?  
 No longer rosate now, nor soft, nor sweet;  
 But barren and hard and dry as stubble-wheat  
 Kept seven years in a drawer—thy tiles  
 shame thee.

The breeze that used to blow thee  
 Between the hedge thorns, and thence take  
 away  
 An odor up the lane to last all day—  
 If breathing now—unsweetened would forego  
 thee.

The sun that used to light thee,  
 And mix his glory in thy gorgeous urn,  
 Till beam appear to bloom and flower to  
 burn—  
 If shining now—with not a hue would dignify  
 thee.

The dew that used to wet thee,  
 And, while first, grew incarnadined, because  
 it lay upon thee where the crimson was—  
 If dropping now—would darken where it  
 met thee.

The fly that lit upon thee,  
 To stretch the tendril of its tiny feet  
 Along the leaf's pure edges after heat—  
 If lighting now—would coldly overrun thee,  
 The bee that once did suck thee,  
 And build thy perfume amber up his hive,  
 And swoon in thee for joy, till scarce alive—  
 If passing now—would blindly overlook  
 thee.

The heart doth recognize thee,  
 Alone, alone! The heart doth smell the sweet,  
 Doth view the fair, doth judge thee most  
 complete—  
 Though seeing now these changes that dis-  
 guise thee.

Yes, and the heart doth owe thee  
 More love, dead rose, than to such roses bold  
 As Julia wears at dances, smiling cold!  
 Lie still upon this heart, which breaks  
 below thee!

Boards of  
 Health nor



The fly is all in white, like a saint,  
 And so is no name for me;  
 And the daisy's cheek is tipped with a blush  
 She is of such low degree.

Jasmine is sweet and has many lovers,  
 And the broom's beribboned to the bee;  
 But I will pluck with the daisy rose,  
 For almost of all is she.

THOMAS HOON.



OWADAYS we are gather-  
 ing much in-  
 formation as  
 to the manners of our  
 far-distant ancestors,  
 the paleolithic man.  
 He defaced the paleolithic  
 landscape with untidy heaps  
 of bones and oyster-shells, but it  
 does not therefore follow that he  
 had no soul for the beautiful.  
 Perhaps the first flint-chippers  
 had gardens, though they had neither

as roses growing beside the brook." The sacred writer takes  
 the flower as an emblem of beauty and gladness when he says  
 that "the desert shall rejoice, and blossom as the rose."  
 Classic poets, Anacreon and Sappho, have sung the praise  
 of roses, though they knew the flowers before their evolu-  
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 tiful, as culture has made them nowadays.

Many legends of many lands account for the birth and for  
 the glowing color of "the queen of flowers." According to  
 one classic story, the rose sprang from the blood of Adonis,  
 white and odorless till golden  
 Venus trod on one of his  
 thorns and with her  
 blood gave it color  
 and perfume.  
 Spenser re-  
 fers to his  
 tradition in  
 the lines,

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 ally  
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 blood-  
 and in  
 is to  
 great-  
 rose  
 it  
 The  
 and

**The Queen of Flowers.**

branch of sweet-bird - Ah say heart!  
 The tender words unbidden start  
 Do weary, would you eyes;  
 I kiss the faded, fragrant spray,  
 And memories of a bygone day  
 Before my vision close.

Sweet Bird

Eglantine, Elar. 123, 124, 125, MND 2, Cybele 104, 92  
 Rose in part, Elar. 125-126, MND 27

Rose lucida, somewhat fed by bleeding, by a 56 bee thing <sup>most of</sup> up to 10; no more much of R.  
 Balling, lot of bee types of all no 10, same say in Dec. R. As feeper at the cher  
 old so R. Dec. 1000 say, as much as son of eye: ché var is in bed, or near of petals;  
 us of petals a color qu. constant. Form of 100, 23 a fresh of prickles, dip of singular  
 hairness, are close of an insect, or an oval; (it was in this, stay in petals, at  
 it angle in them, dark). M. into not only in bed, but, dipping in water, in 100, 100, by L.  
 in Dec. of Wild Rose, 100, 100, as Jimmy here.

All the roses in days, MND 124, 125

- 1 O hold red rose, what eye has stopped  
 Will not thy summer of delight!  
 Where did the eyes and when he hid  
 The heart on thing, these autumn nights?
- 2 O sweet red rose! O strong with wind!  
 The grassy roadside asks in seasons  
 Why you such secret summer hid,  
 Expecting calendars & seasons?
- 3 O hold red rose! In old, with wind!  
 In summer's wind, in autumn's ease,  
 The child lovers, in two hearts chosen  
 With secret which no words disclose.

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CYRUS CURTISS, Esq.,  
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 Dear Sir: - While examining the result of a policy in  
 the late Dr. Case, T. Child, I was much struck an error  
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 provide in your Company to be \$10,000, upon which  
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 Yours, very truly,



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 the flower as an emblem of beauty and gladness when he says  
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The Queen of Flowers.

The life is all in white, like a saint,  
 And so is no name for me;  
 And the daisy's cheek is tipped with a blush,  
 She is of such low degree.

Jasmine is sweet and has many loves,  
 And the broom's betrothed to the bee;  
 But I will pluck with the daisy rose,  
 For firstest of all is she.



WADSWORTH we are gather-  
 ing much in-  
 formation as  
 to the manners of our  
 far-distant ancestors,  
 the palatial man  
 He defaced the picture  
 landscape with  
 of houses and  
 does not  
 had no  
 Per-

Thomas Hood.



The Queen of Flowers.

The lily is all in white, like a saint,  
And so is no mate for me;  
And the daisy's cheek is tipped with a blush,  
She is of such low degree.

Jasmine is sweet and has many loves,  
And the beeom's betrothed to the bee;  
But I will plight with the dainty rose,  
For fairest of all is she.

THOMAS HOOD.

**N**OWADAYS we are gathering much information as to the manners of our far-distant ancestor, the paleolithic man. He defaced the paleolithic landscape with untidy heaps of bones and oyster-shells, but it does not therefore follow that he had no soul for the beautiful. Perhaps the first flint-chippers had gardens, though they had neither

Boards of Health nor Street-Cleaning Bureaus; and the next plowing may unearth a fragment of pottery graven with a rude picture of the first horticultural work. We can be certain had a garden he raised little ancestresses of the Jacqueminots of to-day. Wherever they gladden every region, from the equator to the frozen seas; and in all lands and in all times they have been cherished since

"High in Paradise,  
By the four rivers,  
The first roses  
blew."

Even the etymology of the name shows how blossom has been originally an which passed thence into English.

The oldest literature of allusions to the flower of India, written centuries before our era, say that Vishnu, lord of the world and god of life, found his wife, Pagoda Siri, in the heart of a rose. In the apocryphal Book of Wisdom, Solomon says, "Let us crown ourselves with roses e'er they be withered;" and in Ecclesiasticus occurs the passage, "Hearken to me, ye holy children, and bud forth

as roses growing beside the brook." The sacred writer takes the flower as an emblem of beauty and gladness when he says that "the desert shall rejoice, and blossom as the rose."\*

Classic poets, Anacreon and Sappho, have sung the praise of roses, though they knew the flowers before their evolution, when they were not so large, so fragrant, nor so beautiful, as culture has made them nowadays.

Many legends of many lands account for the birth and for the glowing color of "the queen of flowers." According to one classic story, the rose sprang from the blood of Adonis. It was white and odorless till Venus trod on one of its thorns and with her blood gave it color and perfume. Spenser refers to this tradition in the lines,

"While as the native rose before the change  
Which Venus' blood did on her leaves impress."

The "blush" rose was once white, also, till Cupid gave it color by holding it up to Psyche's cheek. Anacreon tells a different

THE AMERICAN BEAUTY.

tale, and says that the flower was dyed with nectar by the gods, when it was created. Yet another myth says that Cupid, while leading the dance (could it have been the German?) in Olympus, overturned a vase of nectar, and the contents, falling to earth, bedewed the white roses and dyed them red. Herrick inclines to this story:

"'Tis said as Cupid danced among  
The gods, he down his nectar flung,  
Which on the white rose being shed  
Made it ever after red."

The Turks believe that the red rose sprang from the blood of the great prophet Mahomet, and they reverence it accordingly. If a Turk sees a rose lying on the ground he picks it up, raises it to his lips, and carefully lays it in a place of safety.

"The Voyage and Travels of Sir John Manndeville," a famous book of the fourteenth century, gives yet another account of the rose's birth: A Jewish maiden was brought to the stake by the slanders of an incensed—because rejected—suitor. As the flames began to crackle about her, she prayed that, as she was not guilty of the crimes whereof she was accused, Heaven would make her innocence

\*The "rose of Sharon" was not, botanically speaking, a rose at all. It was either a sort of mallow, or, more probably, the wild red anemone of Eastern lands.

known unto all men. Immediately the fagots about her became a bed of roses,—the burning ones red, and those that were not yet kindled, white; and those were the first ones that ever "ony man saugh." Thus the rose became the flower of the martyrs.

In his "Travaile" Sir John seems to have met some Persian fire-worshippers, and to have utilized one of their legends as literary material. They believe that when the infant prophet Abraham was thrown into the fire, by order of Nimrod, the flames and the glowing embers instantly turned to red roses, amid which the child slept sweetly. In "Lalla Rookh" (which now reposes peacefully on the library top-shelf, powdered with dust) our mothers used to read,

"The plying heavens to roses turned  
The death-flames that beneath him burned;"

so among the many legends of the birth of the rose, Moore inclines to the Persian story.

An old Christian tradition says that a white rose bloomed at the foot of the cross, and the blood of the Redeemer, falling upon it, changed its petals to crimson. Oriental legend says that before sin and sorrow entered the world roses had no thorns. According to St. Ambrose and St. Basil, the roses of Eden were thornless; and Milton refers to this belief when he says that in the first and fairest garden there grew

"Flowers of all hues, and without thorn, the rose.

Christian art and story pay little heed to the rose, comparatively speaking. Classic art and story do it far more homage, and it played such an important part in classic life that one wonders how the Greeks and Romans could have worshipped, or held gala-day, or dressed, or dined, without it. It was dedicated to a number of divinities, who, it seems, possessed the queenly blossom in common, in a sort of Olympic socialism. Flora, goddess of flowers, was portrayed crowned with roses, and so was Ceres, god of feasts. The flowers were regarded as symbols of love and beauty, and so they wreathed the brows of Venus, queen of beauty, and of Cupid, god of love, while Aglaia, youngest, and presumably most charming, of the Graces, held roses in her hand.

The rose was dedicated to Aurora, goddess of the morning; the altars of Bacchus were wreathed with roses. They were also sacred to Harpocrates, god of silence, whom classic art portrays with his finger on his lips, so the flower became a symbol of silence, and hence, by an obvious association of ideas, a symbol of discretion. Even in those long-ago days there were many times when "the least said" was "the soonest mended;" so at Roman feasts a rose, or a garland of roses, was hung from the ceiling, in token that what transpired at table, among friends, was to go no further.

This custom extended to other lands and into modern times; for in 1587 the hanging of roses over the tables in parlors and dining-rooms is spoken of as "a common country custom" in England. In the succeeding century the rose was a "make-believe one," painted on the ceiling; and some ingenious person suggests that the plaster ornament called "a rose," which doubtfully adorns the center of the modern ceiling, is a reminiscence of "the tower of silence" of Roman dining-halls.

It is probably on account of its association with Harpocrates, the secret-keeper, that the rose has become one of the symbols of the Order of Free Masons; and we have a reminiscence of the suspended blossom above the feast-table, in the phrase "sub rosa,"—"under the rose," or, "in confidence."

In what is called "the classical period," roses seem to

have been required for every occasion, from birth to death, and to have made a part of every ceremony, public or private, joyous or somber. There were shops in Rome where nothing else was sold, and they were filled with fragrance and bloom every month of the year. The island of Rhodes obtained its name from the profusion of roses raised there, and most of them went to the Roman market.

Then there were the famous roses of Samos and Paestum, happy localities where the bushes flowered twice every year; and when the last autumn blossoms had faded, even in these sunny Mediterranean islands, ships came from Alexandria, laden with more roses, from countries nearer the equator. Many more of the favorite blossoms were raised at home, in the long Italian summers; and in the short, mild winters, roses were forced to bloom under cover, stimulated by hot water, which, it seems, was carried to them in pipes, much as it is in modern conservatories. In the time of Horace, just before our era, glass houses came into use. So Lucius was poor, indeed, if he could not buy Cornelia a rose for her hair, whatever the season.

Even in the comparatively simple days of the republic, revelers had their festive cups crowned with floating roses; and in the times of the empire, when Rome was pampering every sensuous appetite with the wealth of a vanquished world, the paths of her rich and noble citizens were literally strewn with roses. Gardeners and importers seem to have been wonderfully successful in keeping pace with the voracious demand for the flowers. In the reign of Domitian, the last of the Cæsars, the Egyptians offered the emperor's court roses in winter, as a princely gift; but the Romans smiled at the offer. "In every street," says Martial, "the odor of spring is breathed, and garlands of fresh-blown flowers are hanging. Send us corn, Egyptians, and we will send you roses."

On gala days the statues of gods and heroes, which adorned the streets of imperial Rome, were crowned with roses. The arches through which triumphing generals passed were adorned with the flowers, and wreaths of them were flung into the chariots. When Scipio came through the city in triumph, after the conquest of Carthage, the soldiers of the Eighth Legion, who had been the first to penetrate the enemy's camp, were ordered to carry bunches of roses in their hands, and thenceforward every soldier of that troop had a rose graven on his shield.

The Roman bride wore a wreath of roses and myrtle beneath her purple veil. The guests at feasts had crowns of roses on their heads, and chains of them about their necks. The making of these garlands, so much in demand, became a fine art; and though most of the Roman painters are forgotten, the name of Glycera of Lycium, a famous weaver of wreaths, has come down to us through a score of centuries. How must her artistic soul have been tried when she saw the blossoms and buds, so skillfully entwined by her deft fingers, surmounting the brows of a stout and elderly gentleman of bibulous complexion!

*Couleur de rose* pervaded the classic feasts at which that stout gentleman was a guest. In Empire days the company at great dinners reclined upon pillows stuffed with rose-leaves; more rose leaves and blossoms strewed the floor beneath them. When Antony was Cleopatra's guest she entertained him with daily feasts. On the last day, as a climax of hospitality, she gave him a feast of roses. The flowers, fresh and fragrant, covered the floor to the depth of eighteen inches, and a strong netting was stretched above them, so that people might walk on them without crushing them.

But even this entertainment was outdone by Nero's feast, at which he spent a sum equivalent to \$150,000 for roses,—a fine order for his nurseryman. They not only garlanded



the walls, wreathed the guests, filled the cushions, and covered the floor, but a rose-leaf pudding tempted the appetites of the revelers, while roses showered down on them from a hole in the ceiling.

Hellogabalus also invited some friends to dine under a rose-shower, but, in spite of the malice prepense of the host, or the stupidity of his servants,

success as to delight the critics. Hellogabalus bathed in an extract of roses, and he even had the public swimming baths filled with it. When a Roman noble entertained Nero, perhaps in social return for an invitation to the \$150,000 dinner, the host went to enormous expense to have all his fountains flinging up rose-water.

To encourage digestion after these extravagant feasts the Romans drank a beverage made of roses. If, notwithstanding, dyspepsia claimed them for its own, the doctor when he came, was wont to prescribe a rose-draught,—a classical example of the proverbial "hair of the dog that bit him." If the patient died, his cold brow was encircled with a crown of roses, for though a Roman law forbade all or namental show at funerals, an



the shower became a storm: the flowers rained down so heavily that several persons were suffocated under their fragrant abundance. This dinner is the subject of a painting by the great colorist Alma-Tadema. While the artist was at work his daughters took turns in showering rose-leaves before him, that he might catch the effect of light shining through them as they fell. This he has done with such

exception was made in favor of rose-garlands; and it is highly probable that his sorrowing relatives planted a memorial rose-tree on his grave.

In Oriental poetry the rose is mentioned again, and with it is associated the bullbul, or nightingale. The flower and the bird are lovers. She wakens at his voice, and all his melody is for her delight; and in her praise, Jami, the last great poet of Persia, says, "When the nightingales warble their enchanting notes, the veils of the rosebuds are rent." This may have suggested to Byron the pretty fancy in the "Glaour":

"For there the rose, o'er crag and vale,  
Sultana of the nightingale,  
The maid for whom his melody,  
His thousand songs are heard on high,  
Blooms, blushing, to her lover's tale."

The flower was much loved by the Arabs, and a book on agriculture, written in the twelfth century, by Ewn el Awan, gives many directions as to its care. But in Europe, after the downfall of the Roman empire, the cultivation of the rose perished in the same grave with other refinements of ancient civilization.

When the power of papal Rome arose out of the ruins of imperial Rome, the Fathers did not encourage the use of flowers for ecclesiastical or personal adornment, and the rose was

1. "BARONESS ROTHSCHILD."  
2. "CATHERINE MERMET."  
3 AND 4. "GENERAL JAQUEMINOT."

particularly out of favor, because it had been so closely connected with pagan rites. The Benedictine monks were so staunch and only ecclesiastical friends of the dethroned over-queen, and wherever there was a cloister of this Order there was a rose-garden near by. In the times of chivalry at the Crusades, the flower seems to have been taken back to public favor. When the soldiers of the cross returned from the East, they brought with them roses hitherto unknown in western Europe, and some of these were introduced and naturalized in France and Germany.

The beauty of these blushing immigrants seems to have made a great impression upon the Troubadours, for in the *Romaunt of the Rose*, "one of their most famous poems, a flower is given a lover. He does not even see the object of his devotion, only her mirrored face in glassy water, yet she burns and yearns and sighs for the rose till he gets it (at the end of twenty thousand verses), only to discover that he does not care for it, after all.

Knights in the Middle Ages wore a rose embroidered on their sleeves, in token that gentleness should accompany courage, and that beauty was the reward of valor.

The flower plays an important part in heraldry; and it is the national blossom of England, probably because it has been for five centuries the badge of the reigning family. Once there were two families, both desiring to reign, and both having the rose emblazoned on their heraldic

claim was just, as the king was descended from the fourth son of Edward III., while the duke traced his ancestry back to the third son of that monarch. The duke was powerful, bold, and popular, and in 1454, on occasion of the king's dim mind being altogether eclipsed, he got himself appointed Protector of England. When the king recovered, the duke declined to give up his power, and levied an army to support his claim. Then was fought the first battle of a dreadful civil war which embroiled England for thirty years. The badge of the House of Lancaster, to which Henry VI. belonged, was a red rose; while on the escutcheon of the House of York, a white rose was blazoned; and, like the lion and the unicorn, the roses "fought for the crown."

Out of that cruel War of the Roses, which cost so many lives, there has come to us a dainty verse, like a flower growing out of the grim walls of a fortress. It expresses the admiration, perhaps the love, of a forgotten gallant for a forgotten lady. The attachment was a Montagu-and-Capulet affair, for he was a Yorkist, and her family sympathized with the House of Lancaster; so he sent her a white rose with these verses:

"If this fair rose offend thy sight,  
Placed in thy bosom fair  
'Twill blush to find itself less white,  
And turn Lancastrian there.  
But if thy ruby lip it spy,  
As kiss it thou mayst deign,  
With envy pale 'twill lose its dye,  
And Yorkist turn again."

Meantime the relatives of these young people kept on fighting. Now one side was successful, and now the other, and the white rose triumphed so long that there were three Yorkist kings.

On Bosworth Field, in 1485, the roses had

their last fight, and the red rose won. When twilight fell on the day of the battle, Richard III., the last Yorkist king, lay dead on the trampled and blood-stained ground, under a

heap of slain. Then they set his crown upon the head of the Lancastrian heir, Henry Tudor, Earl of Richmond, who became King Henry VII. Henry married the niece of dead King Richard, beautiful Elizabeth of York, and it is more than rumored that he was not very kind to her.

After the wedding he blended the white rose and the red one into what is called the "Tudor rose." In the wonderful chapel of Henry VII., at Westminster, this Tudor rose is everywhere, — in relief



1. "ELRICH BRUNER."

2. "GLOIRE DE PARIS."




in stained glass, and in mosaic. It is made up of alternate rings of red and white petals, and sometimes it is surmounted by a crown.

Two interesting medieval customs connected with the rose have come down to our own days. In the sixth century, Medard,

Bishop of Noyon, instituted the festival of "La Rosière" which used to be celebrated annually at the village of Salency, not far from Paris. A crown of roses was publicly bestowed upon the girl generally acknowledged to be the sweetest and best in the village. To meet the expense of this pretty festival, the bishop set apart a portion of his own domain, and the land thus donated was called the "Manor of the Rose." Louis XIII. happened to be interested in the yearly ceremony at Salency, and was so much interested that he wished to attend in person. When the plan was frustrated by a fit of sickness, he sent a ring for the chosen maiden, saying: "This has long been the prize of honor; let it now become the reward of virtue."

After that time a ring, as well as a wreath, was bestowed upon some favored maiden every year. Madame de Genlis has taken this village ceremony as the subject of a charming little drama, called "La Rosière de Salency." When Salency dropped the custom it was taken up by the village of Nanterre

eight miles from Paris and there this honorable relic of the Middle Ages was flourishing on twenty-five years ago, the excessive practical epoch of steam and daily paper. At Nanterre the happy dancer received not only a wreath of roses but

- 
1. "PAPA GONTIER."
  - 2 & 4. "LA FRANCE."
  3. "MADAME CUSIN."

stantial purse of five hundred francs. The honors were toled upon her by the Lady Mayoress, and before all her folk and acquaintance, in the village church, at Whit-tide.

The fourth Sunday in Lent is known in Rome as "Rose nday." On this day the pope consecrates a rose of gold, ich is sent either to a church, to a crowned head, or to ne person who has rendered Catholicism an important vice. The first golden rose was given to Queen Jeanne, Sicily, in the year 1366. In more recent times one was

stunted shrubs." In Iceland, where vegetation is at times so scarce that the natives are compelled to feed their horses and sheep on dried fish, we find *rosa rubiginosa*, with pale, cup-shaped flowers; and natives of Lapland, seeking mosses for their reindeer, find the pretty fragrant May-rose, which enlivens the bleak northern regions of Europe, blooming almost underneath the snow.

All northern roses have five petals; but those which grow in the warm sunshine of southern lands "double" of their own accord. So the ancients do not deserve much credit for

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iests. The  
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pal favor  
in the



1. "MADAME DE WATTEVILLE." 2. "PERLE DU JARDIN."  
3. THE "BRIDE."

rm of a rose, to intimate  
at human life is as evanes-  
ent as a flower; it is wrought  
gold, the indestructible  
etal, to remind beholders  
at the soul is immortal.

It has been said that roses,  
ke the sunlight, are diffused  
l over the earth. "The  
squimaux," says Boltard,  
adorn their hair and their  
resses of fur with the beauti-  
l *rosa nitida*, which grows  
undantly under their

raising the "rose of sixty  
leaves" mentioned by  
Herodotus. This is sup-  
posed to be the familiar  
"hundred-leaved," or  
"cabbage," rose, originally  
a native of the Caucasus.

Early in the twelfth cen-  
tury, the Crusaders brought  
the beautiful "summer,"  
or June, rose from the  
Holy Land, and with it  
traveled a fair sister, the  
"Damascus," or  
"damask," rose.  
Tea-roses come  
from China, and get  
their name because  
the leaves, which  
have a fine fra-  
grance, are supposed  
to be used by the  
Celestials for flavor-

ing tea. We have another Chinese im-  
migrant which must not go, in the  
"Cherokee" rose. This favorite hedge-  
row shrub was brought from Asia to  
the Southern States, just before the  
Revolution. So the roses which our  
grandmothers used to cherish had their  
"claims of long descent;" but most of  
the darlings of modern hot-houses are  
upstarts, whose ancestors are unknown,  
and whose family history is lost in a  
labyrinth of confusion. We have now



about three thousand sorts, shading into one another so that the most expert florist can scarcely disentangle them. Next year there will be more, for new varieties come into the market every season.

Sometimes these strangers surprise the florist himself by appearing as "sports." A plant sends up a shoot, which, as it grows and blossoms, develops individual peculiarities. The first "moss" rose branched out from a Provence rose-bush, in this unexpected manner. The lovely white "Bride" rose made its first appearance as an offshoot of "Catherine Mermet;" and fashion's favorite, the "Duchess of Albany," is a "sport" from "La France." The snowy "Niphotos" blooms out to grow only upon dwarf bushes of compact build; but one of the plants, fired with ambition, threw out a branch which grew like the bean-stalk of fairy lore. Slips taken from it retained the same aspiring habits, so that the "climbing Niphotos" will sometimes grow twenty feet in a season.

"Sports" may change either the habit of growth or the color of the flower. They are constantly being produced, but there is much uncertainty as to the future behavior of the varieties which make their debut after this fashion. "You can never be sure," says an experienced rose-culturist, "that they will not hark back again." Even the moss-rose, which has been in cultivation for three hundred years, now and then reverts to the habits of its ancestress the Provence rose, and sends out a cluster of flowers unprovided with the green lace mantle which they are wont to wear.

When bushes grow close together, pollen is carried from flower to flower by insects, and thus natural crossing takes place; so by simply sowing the seeds of one fine variety, like the "General Jacqueminot," it has been possible to produce many distinct kinds of great value. Insects must have carried the pollen of some unknown rose to the pistils of Paul Neyron. For behold! one of the seedlings, when it burst into bloom, proved to be a beautiful stranger, the "Ulrich Bruner" rose, with deep carmine petals. The "American Beauty," that darling of fashion, did not even give any one the trouble of sowing her. She came up of her own accord, from seed which sowed itself in the rose-garden of Mr. Bancroft, the historian, at Washington. Fortune and the bees seldom work such pleasant miracles as this.

Artificial crossing is mainly relied on nowadays for new roses. A bud of some favorite sort is selected to be a parent of the new species, and, as soon as it blows, its stamens are cut away to prevent it from forming seed with its own pollen. Then pollen from another choice variety is carefully conveyed to its pistils with a fine camel's-hair brush, and the mutilated flower is covered with gauze to prevent the interference of insects. The seed which is the result of the union is saved and sown, and developments are awaited.

Many of the seedlings die, as they are delicate and subject to mildew. Many more, by a strange law well known to naturalists, are single roses, like their remote ancestors in the garden of Eden. Some prove mere repetitions of established favorites; and even if there be a new rose among them all, there may be no reason why we should admire or desire it. So the business of "manual hybridizing," as it is called, is fraught with uncertainty. Moreover, it is very expensive. The delicate little hybrids must have warmth, care, and greenhouse room, which means outlay for fuel, wages, and rent.—and four-fifths of them "up and die," after all. Uncle Sam's practical nephews generally prefer to raise the old favorites, which are sure to bring the florist a return for his time, pains, and capital.

The climate of Uncle Sam's domains is almost too dry for roses, which cannot be grown very successfully except in the seaboard States. New roses are generally raised in England or in France. They are introduced, or condemned,

as they may deserve, after the propagated plants have blossomed from cuttings. One can never rely upon the behavior of a seedling.

Yet, despite the difficulties besetting the rose-grower, so many new varieties have been introduced within forty years that our grandmothers' roses have been almost improved of the face of the earth. We will find them only in old-fashioned gardens, in rural spots where times and fashions change slowly. Where, for instance, are the once admired "York and Lancaster" roses, streaked with white and carmine? Most of grandmothers' roses had two or three rows of petals, and within them a broad ring of delicate golden stamens. Then "double" flowers came into vogue, and the gardeners aimed to produce an immense mass of petals no matter how crowded or how shapeless. Now they are turning their attention to the production of "artistic" roses with fewer petals, but with delicacy of texture, grace of form, and richness of tint. "Catherine Mermet" is admired for the exquisite outline of its buds; and the "American Beauty" for its size, its stiff, long stems, and the shapeliness of its thorns. Many of the new roses are described in the horticultural catalogues as "Hybrid Teas," that is to say, they had an old-fashioned tea-rose for their great-grandmother, and these please by the peculiar tea-rose fragrance, which is like nothing else in the floral world.

The French are the most successful rose-growers, and hence many of fashion's favorites have French names. The name of a new rose is generally the choice of the florist who introduces it. He may wish to compliment a member of his own family, or some person who is at the time prominently before the public,—a painter, an actor, a general, a politician, a professor, or a famous beauty. Sometimes the blossom's name commemorates a public event occurring at the time of its first appearance. "Niphotos" is a Greek word, and means "the snowy one."

"Madame Cusin" is just now the favorite rose for bouquets and is largely used for dinner and tea-table decorations and is so greatly admired that florists find it difficult to supply the demand. The flowers shade from white to shell pink, with deeper shadings of rose pink on the edge and in rays down the petals. These roses keep fresh for a long time after they are cut.

"La France" is one of the sweetest and loveliest of the tea-roses, and is a prime favorite for decorations of all kinds. Its blossoms are large and graceful, and the backward-curving petals are rich pink with a peculiar silvery luster. It was raised by a well-known French rose-grower, from the seed of a tea-rose.

"Papa Gontier" is a deep red rose, much admired for the graceful form of its pointed buds, which are very popular for corsage bouquets. It is said that these buds will grow if placed in water in a dark room.

The glowing "Jacques" are old favorites, too well known to need description. Their rich color is repeated in the "Ulrich Bruner" rose, but the petals of the newcomer have not the rich, velvety bloom which beautifies those of the "Jacqueminot." The "Ulrich Bruner" has a stiff stem, and lends itself readily to the present fashion of using very long-stalked flowers for decoration; and the "Perle du Jardin" has ingratiated itself with the "four hundred" by a like ability to hold up its head in all companies. Its sturdy stalks uphold great canary-colored flowers, which would be more appropriately called the "topazes," than the "pearls," of the garden. The petals are prettily curled at the edges, and from among them comes the "tea-rose" fragrance which is at once so delicate and so characteristic.

The flowers of the "Catherine Mermet" rose are shell pink in color, shading from a "tea" tint at the bottom of

the petals, which have the silvery luster and the backward curl so admired in "La France."

The pink, cup-shaped blossoms of the "Baroness Rothschild" are prized for their symmetry of form and beautiful foliage. They have but little fragrance. The "Gloire de Paris" is another choice pink rose, deeper in tint than the "Baroness Rothschild." The favorite white rose in the spring is the "Mabel Morrison," a "sport" from the "Baroness Rothschild."

The most popular variety for decoration is the "American Beauty." It is a lovely rosy red, its buds have the taper form which is considered so highly desirable, and the stems are very stiff and long, sometimes measuring four feet. But among all fashion's favorites none is dearer than the rose called "Madame de Watteville." Its cream-white

heard, soulless exotics, without history or traditions. But are not roses, like the angels' robes, too blessed and too dear to be subject to the caprices of the fickle goddess? They have been so long bound up with the memories of the race, they have been loved by so many generations, and they have bloomed in every cottage garden, gladdening the hearts of the poor. They were hymned by the first poets, the writers of the Vedas, who sang like birds in the morning twilight of the world; and so faithful are the poets to their first love, that the most modern and daintiest of rhymesters, Austin Dobson, has chosen the rose for the theme of the charming verses with which I close:



THE "MABEL MORRISON."

petals curl gracefully backward, and their edges look as if a painter's brush had splashed them with deep pink. The blossoms are very fragrant, they have the popular long, strong stems, and they last a long time after being cut.

Having produced flowers so excellent in all points, florists might rest content; but still they are unsatisfied. Prominent growers are now asking for a yellow rose of the size and form of the "Bride," and whoever succeeds in raising it may fill his purse and set the floral fashion.

But does not one rather resent the idea of a fashion in roses? It is fitting that there should be a fashion in orchids: they are upstarts, of which our grandmothers never

"The Rose in the garden slipped her bud,  
And she laughed, in the pride of her youthful blood,  
As she thought of the gardener standing by,—  
'He is old,—so old,—and he soon must die.'

"The full Rose waxed in the warm June air,  
And she spread and spread till her breast lay bare,  
And she laughed once more as she heard his tread,—  
'He is older now; he will soon be dead.'

"But the breeze in the morning blew, and found  
That the leaves of the blown rose strewed the ground;  
And he came at noon, the gardener old,  
And he raked them softly under the mold.  
And I wove the thing to a random rhyme,—  
For the rose is Beauty; the gardener, Time."

E. M. HARDINGE.





AFTER THE COFFEE.—DRAWN BY ALBERT E. STERNER.

BRONSON. "I overheard Count Impecune proposing to Alice last night. He said, 'Mees Henderson, I hear you haf a big heart. Ees eet larch and chencrous enough to accomodate one so unworthy as myself?'"

WITHERS. "And what did Alice say?"

BRONSON. "She asked him how much he wanted."

Another suborder of the Rose Family is the Pear Suborder, distinguished by its fruit which is a pome, as the apple. Over 200 species of this suborder are known. The most valuable are the Apple and Pear; other cultivated fruits are the <sup>Siberian</sup> Crab-apples, the Quince, and in the old world the Sorb, the Medlar and the Service-berry. Among those valued for beauty are the Korean-pear and Mountain Ash, the Shad-bush, the Hawthorn. Those found growing in the District are 10 in number, 2 kinds of Shad-bush, 5 of Hawthorn, and 3 of Chokeberry and Crab-apples.

The remaining suborder is the Rose Family Proper. Among its useful plants are the Strawberry, Blackberry, Dew-berry, Raspberry, Rubus, and many medicinal plants. There are

among common wild plants here, belonging to this suborder, the Five-finger, the Arons, and the Indian Physic or Gillenia. There are 6 species of Rose growing here native or introduced, of which the Swamp Rose and the Inuit Rose are the principal. From 18 or 20 species of Rose from Europe and Asia are in cultivation, in endless varieties. Among the principal cultivated species are the <sup>(including the Hermosa)</sup> Monthly Rose, the <sup>Bornilena, Cornelia Cook, Rose de Jersey,</sup> Tea Rose <sup>(including the Marechal Niel and the</sup> Niphotos) and the <sup>Rosa hybrida</sup> Hybrid Roses <sup>(including the Jacqueminot, La France, the Hundred-leaved Rose, the Dog-rose (abundant in the English gardens and hedges), and found here on High Island) the Moss-rose: the Climbing Roses (as the Baltimore Belle, the Prairie Queen, the Climbing Hermosa, &c.). The largest rose in cultivation is the new Hybrid Rose called "Her Majesty," thick double toward the center, and 6 inches broad.</sup>

Rose References  
 Brian, Illac, 30, 29  
 Rose, Wood 535-6, 538-60

ENDORING A NEW ROSE.

The Horticultural Society Lends Its Influence to a New Candidate for Public Favor.

At a meeting of the Horticultural Society Wednesday night, Mr. T. W. Fowler called attention to a statement in THE STAR of Monday last that crumbees were in bloom in the gardens, and asked if the members knew of any blooming

roses. Saul and Clark and Mrs. Quinn each answered that they had some. Mr. Fowler remarked if such were the case his ground must be too hard for them.

Mr. Fields brought in a basket of roses of the new species called the "American Beauty," stating this was the third crop this winter, that about January 1st having been superior to those.

Mr. Clark said this rose originated with a Mr. Grady of 24th street, who claimed it to be an accidental seedling. It was a cross of La France and one of Mr. Bancroft's imported roses. Mr. Grady at that time was in the employ of Mr. Bancroft. He did not know the value of it, for he had sold cuttings at fifty cents.

Mr. Fields said that they had grown it under glass, and found that it could be forced as easily as any of the tea roses. They believed that it could be raised easily outdoors, but had not yet set it out.

Mr. Clark said he thought the society had done good service in recommending good plants and flowers when there was so much fraud perpetrated by salesmen. He offered a resolution recommending to the community the new and beautiful rose, a seedling raised in this city and called the American Beauty.

Mr. Saunders said that fraud was not always perpetrated knowingly, for some plants will grow in some places and not in others, as is the case with certain grapes. He moved that the words "to be grown out of doors or under glass" be added to the resolution, and in this form it was adopted.

It was decided that each member should furnish a list of roses grown out doors for the June meeting.

most successful; rose with dark green leaves; contrast their flowers of pure unadorned  
 color; white, in three rows. It is not so coldish, the sweet lovely rose  
 that delight. This rose is a cross, raised with a white rose and a green rose  
 the result of a cross, but the green budling substituted in the form of a cross and

acquired April 1870 for the admittance of a room with  
 masses of rose leaves for people of rank in Egypt are cited.

Digitized by Hunt Institute of Botanical Documentation



One of the most remarkable new roses of 1835 was the "American Beauty", which is supposed to be a seedling originally produced by the horticulturist Mr. Geo. Bancroft, in the city of Washington.

Among the oldest of the species of Rose in common cultivation in America are the Damask, the Cinnamon, the Blush and Cabbage roses. The latter and the Musk rose are among the most fragrant. Of recent varieties, the American Beauty is remarkable for its fragrance. Many cultivated roses, like the Jacqueminot, are nearly or quite without fragrance. The sweet-brier rose is remarkable for the agreeable fragrance of its leaves especially in the morning.

Roses can be propagated by seed, layers, cuttings, or budding.

In raising from seed, it requires a year to vegetate, and flowers are not usually produced until the fourth summer. This method is valuable chiefly for the production of new varieties. Budding is valuable in raising the more delicate greenhouse varieties; but the plants so from lack durability. Buds of any or all varieties can be inserted on the stock of a strong stemmed species. The application to roses is a modern invention, introduced from Holland into this, and thence into Britain about 1700.

Roses have been considered the chief of flowers from the earliest times, and by all civilized nations. They vary from white, yellow, and variegated, pink, purple to scarlet and crimson.

The perfume of the rose has been long used as the highest type of the fragrance, so sweet the compliment, as sweet as a Rose; or their sweet is my love, or sweet. The leaves shut, fold on fold, Swathe up the odors of the rose, less sweetness hold.







some special peculiarity of its own, which has insured for it an advantage in certain situations over all its nearest congeners?

Clover is, of course, by family, a pea-flower, one of the great group of the *Papilionaceae*, a tribe of the vast leguminous race. Now, everybody knows the general appearance of the pea-blossom, a form of flower which reappears throughout the whole group, in such different plants as gorse, laburnum, peas, beans, vetches, wistaria, lupine, and acacia; and it is clearly this form of flower which gave the original ancestor of the papilionaceous plants its main advantage in the struggle for existence over almost all its competitors. In other respects, the various members of the pea-flower tribe differ widely from one another. Some of them are tall, woody trees, like the laburnum; some are bushy shrubs, like the broom; some are low, creeping herbs, like the clover; and some are lithe, trailing climbers, like the pea and the scarlet-runner. So again with their foliage: some have hard, spiky leaves, like furze; some have regular trifolios, like medic; some have long sprays of many leaflets, like the sainfoin; and some have clinging tendrils, like the peas and vetches. Once more, in the pod and seed there are infinite varieties of shape, size, and arrangement, as one may see by comparing peas with horse-beans, or the short, hairy pod of gorse with the long, smooth capsule of the vetch, the inflated globe of the bladder senna, and the twisted, snail-like spiral of the medic. In fact, there is hardly a single particular in which the papilionaceous plants do not differ from one another immensely, except only their peculiar flower. Clearly, then, it is the flower almost alone which has given them their fair start in the struggle for life. I say almost—not quite—alone, because, as we shall see hereafter, they owe much also to their relatively large and richly stored seeds. In this one point they early reached a state of equilibrium; in other points, they went on varying and adapting themselves to an infinite variety of external circumstances.

Though it is not my intention to deal at any length here with any of the papilionaceous tribe except the clovers, a few words must first be premised about this peculiar and successful type of flower. It consists, like most other blossoms of the dicotyledonous race, of five petals, inclosing ten stamens, and with a single ovary, or embryo pod, in its very center. But anybody who has ever looked at a pea-blossom knows very well that it is not regular and radially symmetrical like a dog-rose; it has its parts bilaterally arranged, so that an insect lighting upon the flower in search of honey necessarily brushes his breast against the stamens and pistil, and therefore cross-fertilizes the embryo pods by carrying pollen from one blossom to the sensitive surface of the next. The five petals have undergone special modification so as to suit this special mode of impregnation. The upper petal, known as the standard, is usually broad and expanded, serving as an advertisement to attract insects; and in many advanced species it is

variegated with convergent lines of different colors, which guide the bee toward the exact spot where the nectaries are engaged in elaborating honey for his benefit. The two next in order, called the wings, are generally shorter and smaller, and in most advanced types they possess two little indentations, one on each side, specially adapted to afford a foothold for the legs of the visiting bee, in the exact position that will enable him at once to reach the honey and to brush off the pollen against the sensitive surface. The two lowest petals of all are usually united by their under edge, so as to form a single organ, known as the keel, and closely inclosing the stamens and pistil. As a rule, too, all ten stamens are united into a single tube or sheath; or else the nine lower ones are so united, while the upper one is free. In spite of the general uniformity of floral type, however, many special modes of insect fertilization prevail among the various pea-flowers. Sometimes the blossom bursts open elastically when the bee lights upon it, dusting him all over with the ripe pollen; sometimes a small quantity is pumped out from the sharpened point of the keel by the weight of the insect's body; sometimes the pollen is deposited from his breast on the spirally curled summit of the pistil; sometimes it is swept off by a little brush of hairs, situated close beside the sensitive surface of the embryo pod. All that it is here necessary to bear in mind, however, is the general fact that the papilionaceous type of flower has gained its present high position as a dominant floral pattern by its beautiful and varied adaptation to insect fertilization.

Such being the general nature of the pea-flowers as a whole, we have next to inquire what are the special peculiarities which have enabled the clovers in particular to fill their peculiar niche in the existing economy of Nature. Clearly, the positions which clovers are adapted to adorn are not the high places in the hierarchy of vegetal life. They are not tall forest-trees or bushy shrubs; they are not long, creeping trailers or climbers; they are herbs of low and procumbent character, best fitted for filling up the interspaces of taller vegetation, and for vying with the grasses as elements of the close, tender, delicate greensward. The points which have enabled them to survive, therefore, are just those which allow a plant to thrive under such special conditions; and we must ask briefly what those points may be before we proceed to consider the specific characteristics of the various individual clovers.

In foliage the clovers are distinguished by their graceful trifoliate leaves which are an adaptation of the typical papilionaceous pattern to the special necessities of their humble situation. For the common form of pea-leaf consists of a long leaf-stalk, with one terminal leaflet, and with several pairs of lateral leaflets, arranged opposite each other along a central line. In the clovers, however, and in most other small field forms of papilionaceous plants, only one pair of lateral leaflets is developed; and this arrangement allows the leaf-stalk to be elevated



among the surrounding grasses in such a way as to get freely at the sun and air, which are necessary for the nutrition of the plant. But the chief peculiarity of the clovers is the arrangement of their flowers in dense heads. Instead of the blossoms growing separately or in pairs, as with most peas and vetches, or in long, loose bunches, as with laburnum and sainfoin, the flowers of the clovers, much reduced in size, are crowded into compact little bundles, for the most part at the end of a long stalk. What we ordinarily call the flower of a purple clover is, in fact, such a head of clustered flowers. This dense clustering of the flowers makes them, though individually small, very conspicuous in the mass to bees and other insects, and so largely increases their chance of cross-fertilization. For the same purpose they usually secrete abundant honey, and they possess in many cases the familiar fragrant clover perfume. Moreover, in most though not in all species the bases of the five petals have grown together into a narrow tube, inclosing the honey; and in the common purple clover this tube is so deep that no British insect except the humble-bee has a proboscis long enough to reach the nectaries. Such peculiarities are quite sufficient to give the clovers an immense advantage in the struggle for existence; and it is not surprising that they should have become exceptionally numerous in species and individuals, even among the richly endowed and dominant papilionaceous family.

Every race, however, has its weak as well as its strong points; and the weak point of the highly successful clovers lies in the unprotected position of their seeds and pods. Hence, in accordance with the general principles above laid down, it is in these particulars that we might expect to find the various species differ most from one another, since this is just the part on which natural selection of favorable varieties is most likely to be exerted. As in the papilionaceous family as a whole, the flower is the organ which remains almost identical throughout, because it is the organ which gives the family its true importance; so in the restricted clover group the trefoil leaflets and the clustered heads of flowers remain almost identical throughout, and for the like reason. But in any classification of the various species of clover, it will be seen by anybody who looks into the matter that all the distinctive characters are drawn from differences in the pod and calyx after flowering, because this is the weak point of the genus, and the one in which alone diversities of habit have been likely to arise and to be perpetuated by survival of the fittest. The other organs have long since reached their equilibrium; these organs alone remain in need of further equilibration.

And why is the pod a weak point? For this reason. The seeds of clover, though small, are very richly stored with starches and other food-stuffs for the growth of the young plant. Such richness is, of course, in itself an advantage to the race, because it allows the seedlings to start well equipped on the path of life, with some accumulated

capital handed on to them by the mother-plant. But what will feed a seedling will feed an animal as well; and it is just these rich little beans in the clover-pod which give it all its dangerous value as a fodder for cattle. Hence, in the wild state those clovers which have their seeds least protected are most likely to be eaten off and killed down by birds or animals, while those which have them most protected are most likely to survive and become the parents of future generations. Here, then, we have the basis upon which natural selection can act in differentiating the primitive ancestral clover into various divergent species. Whatever accidental variation happens to give any particular clover protection for its seeds in any special habitat will certainly be preserved and increased, while all opposite variations will be cut off and demolished at once. So far as their foliage and their flowers are concerned, the clovers as a body are practically in a state of stable equilibrium; so far as their fruit and seeds are concerned, they are still undergoing modification by natural selection.

Clearly to illustrate this fundamental point, let us first look at some neighboring and closely allied plants, which are not exactly clovers, but which resemble them in almost all important particulars. These also show the same devices for specially protecting their seeds and pods from birds or animals. Take, for example, the genus of the medics. These are mostly small greenward plants, with trefoil leaflets like the clovers, but with the flowers in rather tall, one-sided spikes or loose bunches. Their pods are usually long and many-seeded, but they have this curious peculiarity, that instead of growing straight like that of a pea or bean, they coil up spirally like a snail-shell. When ripe they fall off the plant entire, and thus defeat the hopes of birds and other creatures which wait patiently for the opening of the pods. The simpler medics, such as the agricultural lucern, have smooth, spiral pods alone, and therefore they can be employed successfully as fodder for cattle. But this, which proves an advantage from the point of view of the farmer, is naturally a disadvantage from the point of view of the plant in a wild state, because it insures the seeds being eaten; and hence the more developed and weedy medics have acquired stout protective prickles, fringing their globular spirals, and making them very distasteful morsels to cows or horses. We have two such prickly medics in England, one closely coiled and rolled round like a ball, and thickly set with curved hooks; the other loose like a corkscrew, with two rows of sharp bristles at the adjacent edges; and both these, as I learn from farmers, are extremely objectionable weeds in meadows, rendering the hay almost uneatable. Indeed, I am assured that cattle will never touch even fresh meadow-grass containing them except when absolutely driven by hunger. It is noteworthy that our two doubtfully native smooth medics (lucern and nonesuch) both grow naturally in rough, dry places, and are only largely found as "artificial grasses"—that is to say, were introduced and maintained

by human agency; while our two more truly wild species are meadow and pasture weeds, and are therefore amply protected by prickles against herbivorous animals. Again, bird's-foot trefoil, whose pretty yellow flowers form such ornaments to our sunny banks in summer, has a long, hard, dry pod, too stringy to be edible, and filled with pith between the beans; while lady's-fingers, a somewhat similar type, has an inflated hairy calyx completely inclosing the short pod in its protective and inedible capsule. Strangest of all, however, is the small, matted bird's-foot, whose pod never opens to shed the seeds, but divides between them into little joints or "articles," each inclosing a single bean, and so cheating the expectant birds of their promised food. These examples, which might be multiplied indefinitely, will sufficiently serve to show the importance of protection for the seeds as a basis of differentiation among the papilionaceous flowers.

With the restricted tribe of clovers the need for such protection has almost alone produced all the species into which the genus has long since split up. Originally, of course, we must suppose that there existed one united type of ancestral clover, differing from the other papilionaceous plants in the points which now distinguish the whole clover genus, but possessing none of the special distinctive marks which specifically divide one kind of clover from another. This hypothetical ancestor had probably rather large, purplish flowers, collected in compact heads on a common foot-stalk, with the five petals separate, and with a small three or four-seeded pod completely inclosed within the faded brown petals. From some such form the existing clovers have sprung by differentiations almost entirely affecting the pods and seeds, though they have also varied a little in color, according to the individual tastes of their particular insect visitors, as well as in the degree of union effected between their petals. Without going beyond the limits of our own native clovers, we will look first at those types in which the arrangement of the pod is simplest, and then pass on gradually to those in which it is more and more complex, till we arrive at last at that most marvelous English species which actually buries its own pods entire in the ground by a wonderful series of apparently purposive movements and gyrations.

Our common English purple clover (for convenience' sake I adopt throughout Mr. Bentham's vernacular names) may be taken as a good specimen of the simpler and less-protected kinds. The mere fact that it is grown extensively for fodder shows that it has no deterrent prickles or bristles to ward off the attacks of herbivorous animals; and indeed, throughout the clover group, it may be noted that birds and insects, rather than large mammals, seem to be the enemies especially guarded against by the majority of plants. Purple clover is a perennial, with long, hairy stems, the hairs serving to prevent ants from creeping up to the blossoms and uselessly rifling the honey

intended to attract the fertilizing bees. The young flower-heads are also inclosed in two papery wings or stipules, which effectually protect them from injury before they open. The petals are united into a very long tube, accessible only (as before noted) to the humble-bee; and in New Zealand, where our European humble-bee is unknown, it has been found necessary to import several nestfuls, in order to make the acclimatized clover set its seed for agricultural purposes. But the devices for the protection of the pod are here comparatively slight. Each pod contains, as a rule, only a single seed, and it is externally guarded simply by the wire-like calyx-teeth, which are long, thin, and awl-shaped, and fringed on either side by a row of thick-set hairs. The two lowest are longer than the others, apparently as a protection against crawling insects. After flowering, the petals remain upon the heads, turn brown, and inclose the ripening pod. These brown heads of overblown flowers have such a dead, withered appearance that they seem sufficiently to deceive all intending depredators. As a whole, the species seems to survive mainly because of its protected young flower-heads, its special attractions for fertilization, and its habit of inclosing the pods in the dry petal-tube. It should be noticed, however, that, though artificially propagated in meadows and pastures, it would not probably be a very successful plant if left entirely to its own devices. Man has intervened to give it his powerful aid by sowing its seed, and by fencing it off from cattle, so that it has now become, in spite of itself, one of our most abundant and ubiquitous clovers.

Next in order we may take a series of small, wild, purplish clovers, closely allied to this cultivated type, but more specially adapted for protection against animal foes. Of these the little knotted clover, which grows in our dry pastures and banks, is an excellent simple example. It is a small, tufted annual, often growing in very closely cropped, sheep-eaten crofts, and therefore with an acquired habit of creeping close to the ground, and spreading its foliage flat against the earth. Its calyx-teeth are short and almost prickly, and its little knotted heads grow so close in the angles of the leaves that even a sheep has hard work to bite them off with his nipping front teeth. The rough clover is another of these dwarf creepers, much like knotted clover in general appearance, but even more prostrate, and with its flower-heads still more closely wrapped up in the angles of the leaves, whose wings or stipules almost completely inclose them. The greatest difference, however, resides in the calyx, whose teeth here, after flowering, become broader and stiffer, curve backward, and give the whole plant a stringy, dry, innutritious look. This species or variety also grows mostly on sheep-bitten banks, and manages wonderfully to set its seed in spite of the manifold dangers to which it is exposed. Boccone's clover, confined in Britain to the Lizard Promontory in Cornwall, is a larger southern form of the same central type, closely



allied to the knotted clover. It grows much taller, but has an equally forbidding type of pods; and I notice in Southern France, where it is very abundant, that the dry stalks and oblong heads of fruit are always left uncropped on bare banks and road-sides where goats and sheep have been browsing—a fact which clearly shows that even those omnivorous grazers consider it an unpalatable morsel.

To the same group, I think, but in a more developed degree, belong three or four other British species, whose protections are somewhat less easy to understand. Of these, clustered clover appears like a still higher type of rough clover. It is a slender, creeping annual, with very small, globular flower-heads, almost buried in the angles of the stem and leaves; and it has short, broad calyx-teeth, rigidly curved backward after flowering, and with hard, sharp points. This, I take it, is a protection against browsing animals. The sea clover, on the other hand, seems rather to guard against birds or insects. In the flowering state, it looks almost exactly like a small purple clover; but as the seeds ripen it assumes a very different aspect. First of all, the calyx-teeth grow out into rather broad green leaves, so that the whole head looks more like a mass of foliage than a bunch of ripening fruit. The lower tooth, especially, becomes very long and leaf-like; and it may be remarked that, as a rule, the two lower teeth in clovers differ more or less conspicuously from the upper ones, pointing apparently to some special danger of attack from below. As the pod slowly ripens, two lips grow out on either side of the calyx, and finally meet on the top of the pod, so as to hermetically seal it, leaving only a tightly closed aperture in the very middle. Thus the calyx has, as it were, a false bottom, appearing to be empty when it is not really so, and by this means deceiving would-be intruders. It must be noticed, however, that such a deceptive device would be useless against a herbivorous animal, which could crop off the entire head; it would only serve against birds or insects, which might pick out the seeds one by one. That it does effectually protect the tiny beans is certain, for in no case will you find a calyx without a pod inside it. At the same time, so thoroughly has the calyx with its outgrowth of lips usurped the place of the primitive pod-covering that the real pod is reduced to a mere papery envelope, and can only be detected as inclosing the seed by a somewhat careful dissection. In this sea clover, too, the entire head, when ripe and dry, has a very forbidding aspect, the mass looking decidedly prickly and stringy, like a teasle; and I observe that it generally remains uncropped until the calyx and seeds fall of themselves, especially in Southern Europe, where it grows very tall. Why it should be confined to the neighborhood of the sea and of a few tidal rivers, more especially to salt-marshes, it would be hard to say; probably the special danger against which it defends itself is one found only under these circumstances, in which case it would there alone have any advantage over its competitors. Indeed, it must not be sup-

posed that all these questions are yet by any means finally solved. The sole object of the present paper is to point out the common principle running through the variations of the clover pattern, and to suggest such partial explanations of their causes as have yet occurred to a single observer.

Suffocated clover is another of the tiny creeping types, apparently protected for the most part against browsing quadrupeds. It is a wee tufted form, with minute flowers stuck close in small dense heads, as if gummed to the short stems, and very crowded along their course. We may regard it as the last effort of a very degraded race to keep up its existence in the most closely gnawed pastures, on sand or gravel, where only very dwarfed and scrubby plants can escape destruction. The reader will notice that under such circumstances two types of clover succeed, each in its own way. If the heads become very small, close, and inconspicuous, or tightly pressed against the wiry trailing stems, they escape the observation of browsing animals. If, on the other hand, though tall and noticeable, they develop prickly or stiffened teeth, they are rejected as unfit for food by the creatures which devour the surrounding herbage.

Reversed clover takes its name from a peculiarity which seems to be connected with its mode of fertilization, for it has its standard petal turned outward, instead of inward as in all other clovers. The meaning and object of this change I do not know; but its most marked feature is still one bearing upon preservation of the seed, for, after flowering, the upper part of the calyx becomes much inflated, and is traversed by large membranous veins. At the same time it arches over the lower half, leaving three small teeth below, and two swollen ones at the top, so as to form a sort of bladder-like capsule over the concealed pod. In this case, again, the protection is obviously designed against birds or insects. In the curious strawberry clover, common among dry meadows and road-sides in Southern Britain, the same device has been carried a step further. Each flower in the head is here surrounded by a long involucre of lobed bracts, and, after flowering, the calyx swells immensely, so as to transform the entire head into a compact globular ball of little bladders, each inclosing a single pod. This arrangement has been popularly compared to a strawberry, but it is much more like a raspberry, being a delicate pink in hue, and composed of twenty or thirty small round capsules. The upper half of the bladder is likewise thickly covered with fine down, doubtless very objectionable to the skin of the tongue, and the whole is netted and veined in the most delicate and beautiful fashion. Hardly any other clover possesses so advanced a plan for protecting its little pod.

Another type is presented to us by the large crimson clover, not truly indigenous in Britain, but commonly cultivated for fodder in the south of England. It is a soft, hairy plant, and, like other fodder-clovers, it does not possess any very advanced protective device. Still,



even here, the calyx has extremely long, narrow teeth, thickly covered with smooth hairs, which serve to keep its beans safe. The analogy of a prickly pear or a rose-hip will show how very unpleasant such hairs feel in the mouth. The beautiful, small harefoot clover derives its expressive name from a further development of the same principle. The long teeth of the calyx project beyond the flowers, and are enveloped in soft, downy hair, which gives the whole head a very dainty, feathery appearance. As soon as the flowers are faded, the head looks like a mere mass of soft fluff, unenticing to herbivorous animals, and effectually concealing the seeds from birds or insects. The starry clover of Southern Europe, naturalized in England at Shoreham and a few other spots, starts from much the same point, but has specialized itself both against large and small depredators. On the one hand, its smooth, woolly calyx, much like that of crimson clover during the flowering stage, spreads out after blossoming into a star-shaped pattern, and forms with its neighbors a dry, bristly, interlacing head, thickly studded with sharp hairs; and this suffices to protect it from cattle and goats. On the other hand, the mouth of the calyx, being thus exposed by the spreading of the teeth, is closed by a perfect *cheval-de-frise* of convergent tufted hairs, all meeting in the center of the throat; and this barrier answers the same purpose as that of the sea clover, though in a different manner, by forming a false bottom to exclude insects. Notice on the dry Mediterranean hills that these bristly heads are rejected by the goats and sheep, like those of Boccone's clover, and even donkeys refuse to eat them.

Turning to a somewhat different class, there are some clovers which protect their seeds in a quite distinct manner, by merely turning them out of sight. Common Dutch clover does this in a simple yet very noticeable fashion. It bears its pretty white flowers in tall globular heads on a lengthened footstalk, which renders them extremely conspicuous objects to the fertilizing bees. But each flower is stalked within the head, and, as soon as it has been fertilized, it turns downward, and fades brown against the common footstalk. Every head of Dutch clover thus habitually consists of two parts—an upper part, containing erect open flowers or flower-buds, not yet fertilized; and a lower part, containing overblown flowers, already fertilized, and now engaged in setting their seed. This plan combines two distinct advantages at once. In the first place, the bees lose no time in discriminating between the mature honey-bearing blossoms and those already rifled, which insures more frequent visits and a larger general average of seed-setting. In the second place, the fruiting pedicels and pods, being turned down and concealed, are less likely to be visited by small animal foes, such as flying insects, which might lay their eggs within, and let the grub feed (as often happens) on the growing seed. Dutch clover is a fodder-plant, and therefore, probably, in its native state does not grow much in places exposed to the ravages of large herbi-

vores. At the same time, the pod is many-seeded, and the plant spreads largely as well by creeping and rooting at the joints.

That the object of the turning down after flowering is distinctly to protect the pod, as well as to save time for the bees, may be seen, I think, from the analogous instance of the pretty little yellow hop clover. This common and graceful English plant has primrose-colored flowers, and (as usual with yellow blossoms) depends mainly for fertilization upon a smaller class of insects than Dutch or purple clover. But after the blossoms are fertilized, they turn down in the same manner as in Dutch clover, only far more markedly, giving the head a considerable resemblance to the hop-cones from which the species takes its name. After being thus reflexed, the faded but persistent petals close over the pod, and the standard becomes furrowed with deep marks, which seem to me intended to give a crumpled, withered appearance to the head. Simple as is this device, it nevertheless effectually conceals the pod within a closely imbricated set of scales or shields, each one folding over the next like tiles on a house, and entirely preventing the access of birds or insects to the seeds. The lesser clover and slender clover seem to me to be successively dwarfed and degraded states of the same plant, due apparently in part to bad soil, and in part to diminished need for special protection.

Last of all we come to the most advanced and developed type of any, the subterranean clover. In general appearance this plant closely resembles Dutch clover, from which, in all probability, it is a remote descendant. But, growing, as a rule, on dry, sandy, or gravelly pastures closely nipped by sheep or other herbivores, it has acquired a very remarkable and ingenious mode of escaping their depredations. Like the other species similarly circumstanced, it grows close to the ground, in small tufts; and it bears a few rather large white flowers, two or three together in a starved-looking head. Looked at closely in this stage, a number of small central knobs may be distinguished at the end of the common flower-stalk. These knobs are really the calyxes of undeveloped blossoms, completing the head. After flowering, the stalks lengthen and bend down to the ground, carrying the fertilized pods with them. Then the minor pod-stalks bend back, and the undeveloped central flowers grow out into short, thick awls or gimlets, with five finger-like lobes at their extremity, representing the five spreading teeth of the original calyx. These awls next begin digging their way into the earth by a slow, gyrating motion, and at last wear out a hole in which they bury the pod and bean entire. Thus the plant actually sows and manures its own seed, and so escapes all danger from the grazing animals. This extraordinary action may be considered as the high-water mark of ingenuity and foresight in the unconscious outcomes of natural selection among the clover kind.

In conclusion, it may be added that many of these clovers are very difficult to discriminate from one another in the flowering stage; it is



only when the fruit begins to ripen and the calyx to assume its characteristic shape, that they can be readily identified by safe specific marks. Throughout, in short, all the clover traits remain almost the same, except in the matter of the fruiting pods. This is the one weak point of the genus, and this is therefore the place where natural selection has been able to produce fresh differentiating effects. Such a brief consideration of one small group of plants may serve to bring the general principle with which we started into the definite relief of concrete application; and it may also serve to show the vast variety of detail with which Nature effects the self-same object, even within the narrow limits of a single family or genus.—*Gentleman's Magazine*.

### THE PROBLEM OF HIGHER EDUCATION.

By C. A. EGGERT,

PROFESSOR OF MODERN LANGUAGES IN THE UNIVERSITY OF IOWA.

FEW subjects have of late engaged the attention of the most thoughtful people of this country in a higher degree than the question prominently brought before the public by the recent attempt of the Harvard faculty to open the doors of that famous institution to applicants who might come prepared in all the branches hitherto required for admission, except Greek, for which study they would have had to offer an equivalent in scientific and mathematical work. It has been generally admitted that this work would have been more severe than that required for the Greek, but the opponents of the measure have, nevertheless, assured the public that to omit the Greek would be detrimental to American scholarship, and equivalent to building the educational structure on an unstable foundation. Some of these opponents have gone so far as to assert that the customary college degree, Bachelor of Arts, stands as definitely for Latin and Greek as the degree M. D. stands for the study of medicine. Now, inasmuch as the college is the school in which, according to the best authorities, our young people are expected to gain a higher degree of education than the lower schools, academies, and high-schools can give them, the question, What constitutes the basis of higher education? is answered by the opponents of the Harvard measure in favor of the traditional Latin and Greek course, and that only. But the very fact that men of such high standing in the domain of education as President Eliot and his associates hold a different view should be sufficient to entitle this view to respectful attention. It is, of course, easier to fall back on well-known authorities, and the usage of the past, than to examine carefully into a subject that evidently has at least two very characteristic sides: but if the subject is one that so greatly affects the rising gen-

### LEGUMES.

*Early cultivation of Pulses natural near that of the Flourfielding.*  
Grasses, peas, almost equal in value; either for nourishment for man or animals, or seed for fallow-ground; like them the better for the seeds can be kept long & sowed late. Beans, Lentils & Peas whose wild could be early sowed by shepherds as a cover of valuable seeds; a step more to a tubular out.

Lentils were product of pre-Indo-Germanic culture, & came to the European nations in the SE.

Peas were of Central Asia, & thence came past the Rarus into Europe. Lentils grew in Egypt; egypt in the half-Semitic brotherland of Pelusium & Clevech; the Delta, where was Phacussa, the lentil-town. Strabo saw trap-fragments of bean stone in heaps at the feet of the pyramids, in shape of lentils; pebbles were said by the people to be the petrified remains of the meals eaten by the builders; he, the most ancient of man's meals, that of the lentil-eaters.

In the Bible, lentils occur; for a dish of vob, Esau sold his birthright; David's friends brot him in the desert wheat & barley & dour & parched corn & beans & lentils & parched pulse. Old Hebrew name for L, adashim, is still used by Arabs, & adopted by Persians. Thucydides does not mention L; but it was custom of common people at Athens to eat L in the middle 5th cy. BC. Aristophanes writes: "Never was he in which he will no longer eat lentils." Grec called the lentil-bean & its pottage, *Lacyn*; the plant a like seed *granos*; an obscure word, without its analysis or analogy, & was not reached in Italy. In Italy, Romans served lentils & salt at funeral banquets; calling L, *lentis*, a word of no known source. For it, it went over the Alps to Ger, & to the Lithuanians & Slavs; the word producing the Greek *Lensi*, *lense*, *lenu*, *lentis*, *lent*, *lento*. Slavs also have for it, *le*: *sovieo*, Russian *caccorica*, Polish *coaccorica*; to be compared to Old Prussian *licutekers* lentils, & *kokkers*, peas; these lost to being an echo of Lat. *cicer*, Ger. *kicke*, It. *cice*, Fr. *cichie*.

*Erumb*, the genus of L; and climb; pl. or round stalk, abt 1/2 ft high; for wgd, each ends in a tendril; fls pale purple; pods flat, dur, seeds 2-3, rd, flat.

*Pea* lentil larger, better pl. Neither are raised in Eng. unless for food for cattle; but as more of Central cult for man; seeds used in swigs not readily softened by & mixed to water, ming to it a chocolate-colored pottage. In RC ces the kidney-bean, lentil are now cult than they, on acct of their medicinal use, & vegetable oils, as the diet of the many meagre ds.

DC p 321-3 kind 315

ERVILLIA fadder pl. of Ital Gr. *Erville*, *Erville*, L.  
DC, p 107-8







SWEET PEA *Lathyrus odoratus* "one of the most esteemed of garden plants" for "sweet scent & beauty of its fls" Rh.

EVERLASTING PEA *Lathyrus*

OCHROS, *hik Creta* a wood Gr; TAPISOTS of Catalonia; *L. ochrus* DC;

CHEEKLING VETCH, *Lathyrus sativus*  
Rhind p 317 DC p 110

FLAT PODED PEA, *Lathyrus Cicera*, L; Mochl in It.  
DC p 109

BLOTTER VETCH *Orobis tuberosus*  
Rhind p 316-7

*Orobis luteus* Fallen stalks (of the Indian

of India - *hik*  
BAMBARRA GROUND-NUT, *Glycine subterranea* L.  
DC p 347-8

SALINEUM, *Hedysarum corymbosum*  
Rhind p 317 DC 101-5

SOY *Dolichos soja* L; D & G. *Soyex*; *Phaseolus* in the Pharsalus; heel 444;  
DC p 330-2

LALAB, WALLI, *Dolichos Lalab*, L.

LUBIA, *Dolichos Lubia*, Forst. DC 347

MELLOT, SWEET CLOVER, *Mellilotus* honey lotus, "being the  
the lotus; *M. officinalis* (of the Eng. ptes wh give the yerk odor to *kyay*  
is that flavory in part of the Swiss cheeses called *Gruyere*."

LUCERN *Medicago sativa*  
Rhind p 318-9 DC 102-4

YELLOW LUCERN *Medicago falcata*  
Rhind p 319

HOP-TREFOIL *Medicago lupulina*, see that is the Ir. Shamrock;  
perennial; larger than the yel clover wh it res.



IV. *Ulmus excelsus*, towering tree in Britain forests; barked or dry  
the sweetest part of the trunk, it cleaveth in vasa in the highest; The wild fig  
by the way of apples, it cleaveth itself in a hole like of the fig, and so as need-  
gested seed pass thro' body of a bird-yearly on the fig; say of the bird let  
said it into full fig; now in turn it creates of its own sap to vines the  
seeds of all birds does on itself; the vines so bear out of fruit, and the mo-  
va lumps & does use its trunk. *Narcissus*, Raises its all year cup like a high the  
trunk does a white bill bet him; wood made denser than air; is or will be  
ingit in chief; *Schomburgk* in the Pacific ocean, this great tree in case as  
to not timber for the grandest fleet. *Fraxinus*.

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LOGWOOD *Hæmatoxylon campechianum*

Rhind p 494-7  
Harem, stony tree, 1st disc in Yuc, Campechy; because in part decreased 1661, cause they learned-cutters to settle there, ejected by Sp (1688) but terra these sps.

INDIGO *Indigofera*, var sp

Rhind p 498-9-506  
Hæmatoxylon p 192+ of *I. tinctoria* the most oft cult'd, knotty, slanting 2° high, lvs winged, smooth, sds, etc. also, anal seeds figs, grow in rows to each, 0 also, pods 1/2-1/3 inch, red, w cool gel seeds. They a smooth wide, well filled, not too dry and moist; must be w v-teary + 60°. Seed sown in furrows 1° apart, 2-3" deep, up in 3-4 d, gathered in 2 mo, cut w siddle a few sbs no flag; aft 6 or 8 wks a 2d crop.

RED SAUNDERS WOOD *Pterocarpus Santalium*

Rhind p 508

DEER'S BROOM *Genista tinctoria*

Rhind p 518

SUNN, INDIAN HEMP, *Crotalaria juncea*, Rhind 420

CESALPINIA § a genus name to birds bearing, for the rest of the Red dyewoods

*C. ovata* furnishes best dye; kn as BRAZIL-WOOD; abundant in Brazil; flowers; pods dry pls w dry gel; trunk large, cold, full of knots; use the pod + lvs are small, never in luxuriant foliage; fls beaut red, frage; thick bark, not pithy pt of trunk used; the hard close-grained heartwood also contains color mte; snts used in tanning, takes a gd polish; chief use as a red dye; pvs a vy fleet crimson tint; add acids it produces a lassy orange or gel that. *Hæmatox.*

Rhind p 497 Most of the red dyewoods are of genus *C*, *Hæmatox*,

*C. vesicaria*, BRAZIL-WOOD  
Rhind p 498

*C. sapan*, JAPAN-WOOD  
Rhind p 498

*C. —* NICARAGUA or ESCH WOOD  
Rhind p 498

*C. —* CAM. WOOD  
Rhind p 498

MIMOSA SENSITIVE PLANT Rhind 602

*Eurospatia*

As at the rising of a herd of deer in the track of the prairie,

Far in advance are closed the leaves of the shrubby Mimosa.

Whence Like the Mimosa, shrinking to the sight of some familiar danger

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ACACIAS; "the delicately beak-nosed Mimosa, unrolled along the side  
of glass in the smooth elegance of the foliage." "Is more the best ever known  
for its beauty of unbroken shape, smooth like that of the fir tree, & the dry blue-grey tinge  
through the leaflets. It is delicately vivid the finest catbry; has an extremely  
pleasant effect."

*Sensitivae Pteris*; large group of Brazil are also com-  
mon there; the young of a plant  
20-30 the next one is more like it by shape. The catbry of one small fern  
this fern is growing in the field, among the ferns of Darwin & Dainton  
about near the ferns.

*Catechu*, *Acacia catechu*, Rhind 530; an attempt to a small tree in the mtns.  
*Gum Arabic*, *Acacia*, Rhind 556, EGYP TIAN THERON

*Thorny Acacias*; A large tree in Buffalo Plains, a low shrub-  
shrub in N Carolina, a little tree, beset at top by a pair of thorns set  
opposite each other, like the leaves of  
sage, sharp as a needle, 2-3' lg, thick at the base than the stem they grow on.

A *Conocarpus* has thorns so large as to be called *Supple-Nail* by Eng, a *Elephant-Thorn*  
by Arabs.

## RANUNCULACEÆ

**Characteristics** Some of the most com. & not highly dev.  
of the *Ranunculaceæ*; simply diff. in some color as *Asarum*, *Thalictrum*, *Scilla*, *Delphinium*,  
in some genus, as *Delphinium*.

**Herbs** usually dicots  
lvs. usually reniform, or petiole dilated & forming a sheath with clasping lobes  
Pet. usually corolla-shaped; if apertures, the sepals petaloid  
S 3-6 P 3-15 St + C +  
Fruit of dry tuberosity; or a berry; or a follicle  
Juice acrid, caustic, not milky

### Related Families

*Rose* Fam., very the petal approx. the + at a petiole; the fruit achene  
or berry-like follicle; the lvs. divided; diff. in *Rose* the sepals calyx, contrary  
follicle are acid, lvs not sheathing, true sepals present,  
*Smilacaceæ* Fam., like the *Rose* exo. w. definite stamens.

Small Closely Allied Families; the *Ranunculaceæ* of *Lily* and *Magnolia*,  
*Anemone*, *Pulsatilla*, *Ranunculus*, *Pulsatilla*, *Pulsatilla*, *Pulsatilla*, *Pulsatilla*,  
of the *Ranunculaceæ*. Also allied more distantly are *Dioscoreaceæ* (*Lily* p 433)  
*Arisarctaceæ* (*Lily* p 459); also links to *Barberry* & thus *Fumariaceæ*,  
*Piper* & *Delphinium* Fam., and on the other hand to *Waterbury* Fam.

### Importance

1000 sp. of 41 gen. *Lily*; no fruits are edible  
Plts; very common as *Asarum*; many of medicinal use as *Asarum*,  
*Clematis*, *Thalictrum*,  
*Delphinium*,  
" of literary fame, as *Asarum*, *Clematis*,  
*Delphinium*.

Order *Ranunculaceæ*, acrid, caustic, poisonous are not of the sp.; some are  
harmless. The caustic pils, DC to *Krafft*, in *Lily* is so very caustic  
as to be edible, easily dispersed by simple drugs. Infusa in water or boiling;  
it is urticant and alkaline; is incised by acids, sugar, honey, wine, spirit, &c.;  
is effectually deacid only by mucus & opiate acids.

*Delphinium*; largest *Delphinium* in Euro; wh. has one tube 1/5; NH 1/2, lat  
100, 200 1/2 *Lily*, very few in Afr. exo. or *Medit* zones; 18 sp, DC, no dist.

*Clematis* - sept. is cool, damp; 100 in the lowlands; in tropics are in  
arctic sides & summits.









TRILLIUS L.

TRAUFEWERTERIA

HEGEMONE Bunge

ERANTHIS Salisb.

HELIOPHOBUS Adanson, the only vivacious still in use in the East, Lf.

H. nigra, BLACK H, CHAMODAS ROSE, Rhind B. 167 (dark rose, of some Sax. localities),  
H. frigidus, EGARS ROSE

In winter, the rose, is not of Boscovich's story made to appear at Christmas by Louis, he writes to the mother of a girl who had a dream of a beautiful lady playing her these flowers in the winter, the child dream was fulfilled, she saw her. From this plant some at their time. Do you know the CA? in fact, it is more proper, for only the winter is to be in it. In fact, it is old the old, however, in the Netherlands, it is old the CA but it being the Netherlands, the rose says that it is as large as the H. frigidus, is now white, quite unchanged on a delicate, it is a little more hard at winter, some are useful to the flowers as to the, and see it for the child of an fact of some, for wonderfully beautiful it is. The the old person in the spectra of the lady person - in case in winter all, from Boscovich - have seeds multiplied in the land, & acc. to universality which that in fact is cracked, many a miracle!

CORYS Salisb. GONDTERRAD

C. trifida, root a juice & petal bitter, not any narcotency; popular name - hills for  
aphthous affections in the mouth, Lf.

NIGELLA Thunberg

Nigella, seeds are oft used instead of pepper; it is said the perfume SIAH DANA  
& seed used by Alpinus to stave curies is a N. x the Black CUMIN of Sax.

AQUILEGIA Tournefort, Birds-tooth.

B. 15 S. 15

Chapman in play of 1600 refers to it as evidence of improvidence;

What's that a C? No, that doubtless denotes privet not in my garden.

Apres, qu'il Hervey, The C, by loads, was denoted taken  
It then described in such as were taken.

Don't, Male her a goodly chaplet of azure Co,  
And conceals about her coronet of white sweetest yplantine.

As name Cult-ent-coppy, & As culture a dove a rose; Hervey; for petals

via a circle of doves drinking for the same dish? or each petal a dove? Hervey,  
Last name, some say for Aquila for cluster of heart spurs, red, talons; or aqua clips to  
color, for petals as it is stem-recurved; but petals hang down, & seed-pod only red to  
Forsk. decorative design; a border-cyan illum. MS in 19<sup>th</sup>; once was combined  
to the red rose as badge of Leinster, & rep'd, that, in Boscovich as badge of their  
rapier house.

DELPHINIUM Tournefort, the Scaphisapria, LDC.

D. Scaphisapria is venesidial, caustic, drastic, emetic, in seeds.

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## ANONACEAE

Characterized 1789 by Jacquin. Trees or shrubs; fls. fragr. or heav. of. tropical both worlds; few S & N of them. Great char. is perfid. aromatic taste & smell in all pts. 26 p. 300 sp.

## UVARIA L. or ASIMINA Adanson, the PALAW Rhind 323

*U. trigonoloba*; its yields being tapped & mixed with rubber in the form of a fragrant gum.  
*U. rubra*; seeds emetic; for used w/ hyaliquid abscesses to a head.  
*U. lobata* (the old Fruto de Buroo), the Ind. in Orinoco use it as an emetic.

## ANONA L. Rhind 376

*A. squamata* for fr. a heavy disagreeable odor; seeds are a highly acid resin fatal to infants; the flowers powder them & with those of *Glarea*, no *Clusia arctica* tree only, usually this tree. SUGAR SUEZ; SUGAR APPLE, DC 162 CUSTARD APPLE of Rhind.

*A. polytricha* has been obtained, fit for tanning, called *Arabic Araticu do Brasil* in Brazil fruit good for dessert.

*A. muricata* used in Brazil for medicine.

*A. muricata*, *Elliptica* still not in *Acetico-china*.

*A. trigonata*, *Chicomora* of Peru; for a var. *atropicea* of *Neues Hainke*, its taste, qu. *incomparable*, *Reichard*, collected at *Huanuco*, on 14-16/4 *Reichard* says, bread taste as the he; wind-pipe, so anal tubercles; core a *small* fruit juicy pulp, very like *the* *helo*. Deltoid skin to fruit, 200 high; dorsal dull green.

*A. muricata*, SUEZ, 200, CUSTARD APPLE of Am; DC 175

*A. reticulata*, CUSTARD APPLE (LAMI), BULLOCKS HEART of El; DC 174

*A. cherimolia*, CHIRIMOLIA, DC 174

XYLOPIA *secina*, large tree on Rio, PINDAIBA; highly aromatic fruit, so some of *Reichard* see *Illy* p 42

X. *glabra*, BITTER-WOOD in WI, see *Illy* 42.

DURZELLA *guianensis*, LANCE-WOOD of coast waters, the PARI of Guiana; stgy, elastic.

MONODORA *argentina*, CALABASH NUTMEG, wood of *tree* for *varicella*.

LANCEWOOD, *Qualechya piqueta*, Rhind 447

## DILLENIACEAE

Characterized by DC, 1818. Trees, shrubs, under-shrubs, usually herbs, fls. fragr. or heav. of. tropical both worlds; few S & N of them. Great char. is perfid. aromatic taste & smell in all pts. 26 p. 300 sp.

*Dillenia* L., rot of six large trees, milk hard, ductile, oil, ductile, Ind. sp. are also also of great beauty; wood for *grain* of foliage & magnificence of fls. Y<sup>g</sup> calyx of 7 sp. are *pleasant*, used in *bad* *cancers*. Bark is acid; added to *myrrh* make a *rough* *mixture*; ripe *lets* *laxative*, even *produce* *diarrhoea*.

*Davilla elliptica*, *aristata*, *lucida*, the *varieties* of *SIMBALENGHA* in Brazil; *D. rugosa* used in Brazil in *swells* of the legs.

*Tetrastemon* used as *Drugs*; also is *LIANE ROUGE*, *diabetic* &c.

*Cucullata* 3 *varieties* used by *various* in Brazil.









b, Distinctions from Related Families.

The Teasel Family has the compound flowers and the involucre of the Composite Family, but with distinct stamens. Examples are the Teasel, the Scabious and Mourning Bride of <sup>the</sup> gardens; they have always opposite leaves

Some of the Leguminosae, as the Red and White Clover, are often mistaken for members of the Composite Family by those who <sup>take these species for</sup> ~~take these species for~~

Some of the Valerian family have a feathery pappus, and a little tend to form heads. Examples are the Mountain Heliotrope or Balm of a Thousand flowers of old gardens; the Greek Valerian, and the Earle Valerian of High Island.

c. Importance.

The Composite Family is important principally from its numbers, over 10000 species, being the largest family of flowering plants; and 2d, from its beauty; but besides ornament, it <sup>as the Chrysanthemum, Daisy, Dahlia, Zinnia, Pansy, Carnation, Edelweiss</sup> ~~is the Chrysanthemum, Daisy, Dahlia, Zinnia, Pansy, Carnation, Edelweiss~~ and the production of lettuce, saladify, chicory, artichokes, amica and wormwood. The order is <sup>however</sup> of less use to man than might be thought from its numbers, and it contains a great many troublesome weeds, as the Thistles, Horseweed, Stick-tight, Chickweed, Burdock, Ragweed, Mayweed &c

d. Particular Species.

One largest genera in the Composite Family are Aster, 41 <sup>native</sup> ~~and~~ and 129 <sup>American</sup> ~~foreign~~ species, and Solidago or Golden-rod, 31 <sup>native</sup> ~~and~~ and 78 <sup>American</sup> ~~foreign~~ species, and Helianthus or Sunflower, 20 native and 40 <sup>American</sup> ~~foreign~~ species. The largest genus, Senecio or Groundsel, contains nearly 900 <sup>American</sup> ~~foreign~~ species, only 59 American represented here by the Golden Ragwort.

Against her ankles as she stood The lady Buttercup did nod  
I leaped again upon the gate to see;

The sweet thing looked but did not speak; a dimple came in either cheek;  
And all my heart was gone from me,  
Jean Ingelow

Sweet are the lanes and the hedges —

the fields made cool with the daisy,  
With tall field-sorrel and daisies  
and golden Buttercup's glowing;

Sweet to the way through the woods  
where at sundown maiden and lover  
linger by stile and by bank  
where wild Clematis is growing;

Pair is our world when the dew's the dawn  
thick the half-drooped ROSES,  
then when the corn fields grow warm  
With poppies in morning's gleaming

Face throbs the long afternoon,  
when ripples & hay fields the dreaming,  
Pure as a beginning of the best <sup>CONVALLARIA</sup> daisy

Scent of GELANUM and MALL That in cottage windows rise red,  
Breath from the field throbs down in the meadows each side the highway;  
Murmuring wind throbs the leaves Bent over the meadows by-way;  
Deep of cool shadow & gleams of light in high <sup>CLM</sup> roses shining,  
Such peace in the dim green vale As the town save in dreams knows never!

O my heart my heart, so to be out in the sun, sing! E. Nooit  
O birds, sing loud in the sky! These are none to glad as I, I had Coleridge.

Oh happy day, refuse to go! Hang in the heavens forever!  
Forever in mid-afternoon — Ah happy day, do not fly due!

Pure as thy sunshine on the hill, The tiny wood with perfume fill,  
And breathe across the shining sea, Hand-scattered breeze that shall be  
Sweet as the garden that they pass, Where children tumble in the grass!

Ah happy day, refuse to go! Hang on, <sup>in the soft bosom of the west;</sup>  
And long rest in thy blushing nest <sup>With all the stars upon her track!</sup>  
But bid gray evening get her back <sup>The mystery of the midnight blue,</sup>  
Forget the daisy, forget the dew, <sup>While summer here enchantment flings!</sup>  
And only spread the <sup>stars</sup> <sup>Hamlet R. O. J. J. J.</sup>

Don't Daisies that shine like silver gold  
In meadow and grassy lane,  
You are as picked as many as hands can hold  
'Till you are gone of again E. Nooit

A garden so little was, region and like that you would to prize it to be all the wilderness,  
Every little my hand Goss home led on a 1807 Recursion, Alcott  
There was never a garden but it found in the flowers Andrew Marvell

... as appear  
to be his  
this is C. J.  
is, Merhans

... in your eyes  
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... myrtle ...





However the verse contained in this volume may meet readers of opposing tastes, it is as far removed from commonplace as from the fastidious modeling to which our younger verse-makers—British or American—seem devoted. It is written mostly in familiar metrical forms. Some of it is poetry of a delicate and penetrative order, and all is plainly the work of a true, if somewhat uneven, poet. There are technical faults here and there which the finish and melody of certain pieces forbid us to attribute to any defect of Mr. Albee's ear or voice. Taken together, his poems have the air of verse composed at different stages in the life of an imaginative, sympathetic thinker. Their inequality may be the result of a disinclination to revise the outgivings of former moods, lest the honest expression of those moods should be lost in the process.

## FLOWERS IN THE GRASS.

By Mary Gardiner.

After dandelions, buttercups;  
After buttercups, clover;  
One blossom follows another one,  
Over, and over, and over.

And the sweet satisfying green  
Is round about them all;  
First to be here in Spring-time,  
Staying last in the Fall.

Just as God's love is first and last,  
With human loves between,  
Successive blossoms which He sends  
Through His all-present green.

Only when cometh the clover,  
Lifting her honeyed crest,  
Always within our heart's choice,  
We like the dandelions best.

So here and there in Autumn time,  
Their lonely faces smile,  
Like likenesses of vanished things,  
Which we had lost awhile.

After dandelions, buttercups;  
Then daisies and clover,  
One blessing touches another one,  
Over, and over, and over.

But O, behind, beyond, around,  
Between them and above,  
Rises the satisfying green,  
The Everlasting Love.

"Rose-Gerardia" is another attractive poem in blank verse, and a good illustration—as are "The Swallows," "Arbutus," and other lyrics in lighter measures—of the author's close acquaintance with mother Nature. This, it may be added, is a manifest quality in his work; he is one of Nature's lovers, and his sense of out-door life and beauty does not come at second-hand. His treatment of a simple theme is often perfect in its way:

## DANDELIONS.

Now dandelions in the short, new grass,  
Through all their rapid stages daily pass;  
No bee yet visits them; each has its place,  
Still near enough to see the other's face;  
Unkennd the bud, so like the grass and ground  
In our old country yards where thickest found,  
Some morn it opens a little golden sun,  
And sets in its own wreath when day is done,  
In few days more 'tis old and silvery gray,  
And though so close to earth it made its stay,  
Lo! now it findeth wings and lightly flies,  
A spirit form, till on the sight it dies.

The lines in italics are very charming and original. The image which ensues may be compared with Miss Ellen Hutchinson's exquisite and still more subtle rendering of the same fancy, in her poem of "Harvest":

In the meadow grass  
The innocent white daisies blow,  
The dandelion plume doth pass  
Vaguely to and fro—  
The unquiet spirit of a flower  
That hath too brief an hour.

It is perhaps more strange that Mr. Lowell's poem to the Dandelion should have stopped short of the migration of the flower's seed than that his two successors should have thus conceived it.

*Taraxacum* Deas-Lion's (the Dandelion, *Herp de Lion*) of conell mednal use as purgative, dehydrating aperient, & diuretic; very useful in chronic diarrhoea, Malaria. *Taraxacine* is added to various processes of the Mac-Alagat crystals, by M. P. L. & Co.

Kind 556  
Rational, etc. to 1893.  
The yellow buds are beautiful. The bee in view see blowing, and gentle winds are playing. Along the grassy edge, around the city in mountain, and down the passy side, let notice, etc.

However the verse contained in this volume may meet readers of opposing tastes, it is as far removed from commonplace as from the fastidious modeling to which our younger verse-makers—British or American—seem devoted. It is written mostly in familiar metrical forms. Some of it is poetry of a delicate and penetrative order, and all is plainly the work of a true, if somewhat uneven, poet. There are technical faults here and there which the finish and melody of certain pieces forbid us to attribute to any defect of Mr. Albee's ear or voice. Taken together, his poems have the air of verse composed at different stages in the life of an imaginative, sympathetic thinker. Their inequality may be the result of a disinclination to revise the outgivings of former moods, lest the honest expression of those moods should be lost in the process.

Mr. Albee's poetry, in fact, seems less the product of a life occupied with song than the overflow of a finely poetic nature, usually at its best with the best occasion—successful, also, with the best form, inasmuch as a marked excellence of handling appears in his blank verse and the kindred rhymed measures. Few poems have lovelier thought and movement than "The Perfect Gift," which opens this volume. "Chauncy Creek," another and longer piece of blank verse, is a scene-play, the musings of one keenly alive to Nature and to all human associations, as his merry drifts with the tide far up an estuary upon the historic New-Hampshire coast. Here is a realistic picture of a worn-out fishing village, occupying ground once the domain of the Channeys and Champenownies, and now passing away in turn:

Here now the squall'd fisher lands his boat,  
Calls wife and children from his little cot,  
Perched on the rocks and imaged in the stream,  
His scanty fare upon the flakes to spread,  
Too small to sell, too little for his board.  
Where once men canvassed oft of Church and State,  
And ladies, stiff in low, laced bodices,  
Gossiped of men and merry wedding days,  
Seated in porch or window's embrasure,  
Flicking their samplers with some much loved name,

Which gallants, o'er their shoulders looking down,  
Saw well-pleas'd; now rough speech is only heard,  
Of fares of fish, and boats and winds and tides;  
And housewives lean and sluttish, hair unkempt,  
And dress undone for tugging baby lips,  
And dress undone for tugging baby lips,  
Show limp and hungry breasts of leathery hue  
Which starve each year the yearly boy or girl.

From this scene, "homeward turned beside the forest pines," the poet hears

—That voice of ocean feminine,  
The softer seas which murmur in their tops;  
And soon the old familiar beat far off,  
And soon the dark blue, clear and always pure,  
Bathing the world, each day itself twice bathed,  
Led by the trink maiden moon at eve,  
And morn to crystal chambers of the deep.

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In our old country yards where thickest ground,  
*Some morn it opens a little golden sun,*  
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*Taraxacum Dactyloides* the Dandelion, (*Her de lica*) of conchil medical use as a cathartic, diuretic, aperient, & diuretic; very useful in chronic diarrhoea, *Hæmorrh.* *Taraxacine* is a diuretic in low doses; or it is a cathartic, especially, *very at a dose*  
Mind 556  
Reviv'd, & be to eggs  
The yellow buds are breaking, the fair in order see blowing,  
And gentle winds are playing, Along the grassy side,  
Around the city in the plain, And down the passy side,  
Let nature, bid.



## 13, 1886—DOUBLE

## JEFFERSON AS A NATURALIST.

## What His Influence Did for Science in America.

HIS CONTROVERSY WITH AND VICTORY OVER BUFFON—BRINGING FOSSIL BONES TO THE CAPITAL—WHAT MR. GOODE SAID IN HIS ADDRESS.

Mr. G. Browne Goode, president of the Biological Society, in his annual address in "The Beginnings of American Natural History" before that body last Saturday night, referring to Thomas Jefferson, said: "Had he not been a master in statecraft he would have been a master of science. It is probable that no two men have done so much for science in America as Jefferson and Agassiz—not so much by their direct contributions to knowledge as by the immense weight which they gave to scientific interests by their advocacy. Many pages of Jefferson's 'Notes on Virginia' are devoted to the discussion of Buffon's statements (1) that the animals common to both continents are smaller in the new world, (2) that those which are peculiar to the new are on a smaller scale, (3) that those which have been demonstrated in both have degenerated in America, and (4) that on the whole America exhibits fewer species. He successfully overthrows the specious and superficial arguments of the eloquent French naturalist, who, it must be remembered was at this time considered the highest authority living in such matters.

## HOW HE CONVINCED BUFFON.

"Not content with this," continued Mr. Goode, "when minister plenipotentiary to Europe, a few years later, he forced Buffon himself to admit his error. The circumstances shall be related in the words of Daniel Webster, who was very fond of relating this anecdote: 'It was a dispute in relation to the moose, and in one of the circles of the *bon-vivants* in Paris, Mr. Jefferson contended for some characteristics in the formation of the animal which Buffon stoutly denied. Whereupon Mr. Jefferson wrote from Paris to General John Sullivan, then residing in Durham, New Hampshire, to procure and send him the whole frame of a moose. The general was no little astonished at a request he deemed so extraordinary, but well acquainted with Mr. Jefferson, he knew he must have sufficient reason for it; so he made a hunting party of his neighbors, and took the field. They captured a moose of unusual proportions, stuffed it to the bone and sent the skeleton to Mr. Jefferson, at a cost of fifty pound sterling. On its arrival Mr. Jefferson invited Buffon and some other *seigneurs* to a supper at his house and exhibited his dear-bought specimen. Buffon immediately acknowledged his error. 'I should have consulted you, monsieur,' he said, 'before publishing my book on natural history, and then I should have been sure of my facts.'

## JEFFERSON'S SCIENTIFIC FORESIGHT.

"In still another matter in which he was at variance with Buffon he was manifestly in the right. In a letter to Mr. Madison, of William and Mary college he wrote: 'Speaking one day with M. de Buffon on the present ardor of chemical inquiry, he affected to consider chemistry but as cookery and to place the tools of the laboratory on a footing with those of the kitchen. I think it on the contrary, among the most useful of sciences, and big with future discoveries for the utility and safety of the human race.'

It was the scientific foresight of Jefferson, so

DE L'E. WILD MANDRAKE; *Leafy sage called*

manifest in such letters, which led him to advocate so vigorously the idea that science must be the corner-stone of our republic.

In 1789 he wrote from Paris to Dr. Wellard, president of Harvard college:

"What a field have we at our doors to signalize ourselves in! The botany of America is far from being exhausted. Its mineralogy is untouched and its zoology totally mistaken and misrepresented. \* \* \* It is for such institutions as that over which you preside so worthily, sir, to do justice to our country, its productions and its genius. It is the work to which the young men you are forming should lay their hands. We have spent the prime of our lives in procuring them the precious blessing of liberty. Let them spend theirs in showing that it is the great parent of science and of virtue, and that a nation will be great in both always in proportion as it is free."

To Jefferson's influence was due the organization of the first government exploring expedition. As early as 1780 we find him anxious to promote an expedition to the upper portion of the Mississippi valley, and offering to raise 1,000 guineas for the purpose from private sources, and while he was President, he dispatched Lewis and Clark upon their famous expedition into the northwest—the precursor of all the similar enterprises carried on by the general government, which have culminated in our magnificent geological survey.

Jefferson's personal influence in favor of science was of uncalculable value. Transferred from the presidency to the Presidency of the scientific society to the Presidency of the nation, he carried with him to the Executive Mansion the tastes and habits of a scientific investigator.

Mr. Luther, in his recent essay upon Jefferson as a Naturalist, has shown that during his residence in Paris, he kept the four principal colleges, Harvard, Yale, William and Mary, and the college of Philadelphia, informed of all that happened in the scientific circles in Europe. He wrote to one correspondent: "Nature intended me for the tranquil pursuits of science by rendering them my supreme delight." To another he said: "Your first gives me information in the line of natural history, and the second promises political needs. The first is my passion, the last my duty, and therefore, both desirable."

## CARRYING BONES TO PHILADELPHIA.

"When Jefferson went to Philadelphia to be inaugurated Vice President he carried with him a collection of fossil bones which he had obtained in Green Brier county, Virginia, together with a paper in which were formulated the results of his studies upon them. This was published in the *Transactions of the American Philosophical Society*, and the species is still known as *Megalonyx Jeffersoni*.

"The spectacle," remarks Luther, "of an American statesman, coming to take part as a central figure in the greatest political ceremony of our country, and bringing with him an original contribution to science, is certainly one we shall not soon see repeated."

"When Jefferson became President, his scientific tastes were the subject of much ridicule as taste tastes of bitter opposition among the people well as of those eyes, even in that day, science was considered synonymous with atheism. William Cullen Bryant wrote a satirical poem, since suppressed, in which the popular feeling seems to have been voiced.

"Go, wretch, resign the presidential chair,  
Disclose thy secret measures, foul or fair;  
Go search with curious eyes for horned frogs,  
Mid the wild wastes of Louisianian bogs,  
Or where the Ohio rolls his turbid stream  
Dig for huge bones, thy glory and thy theme."

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L. MANDRAKE; Leaf says called  
 cathartic; lvs. poisonous; whole pt

by Hunt Institute for Botanical Documentation

117 2 Ellet 2 May 3 Mandrake, old world, JEFFERSONIA



AD

... MIZY APPLE, WILD MANDRAKE; Leaf saqs called  
WILD LEMONS for its acid fruit; de ure cathartic; lvs. poisonous; whole pte  
narcotic.

Digitized by Hunt Institute for Botanical Documentation

MANDRAKE of old world, Mandragora, 5 hier 6, Ellac 117

ASTER of *Naxosides* was prob *Loula Eubonius*.

1. *A. Villoi* prob the *Aster Ansellii* given in H, Sic, & 1 abt Athens.  
L, 1237, descr bet 10 pp; Wild 1806, 107; DC, 1836, 150; Sims, At, 200 in Ann. Anth.  
So.

*A. patens* Sp. by Meckan; Fruits 1st l brs are short, with a slender pedicel;  
at dist, no slender branches 2-6 l lg, with push out horizontally 2 at rt angles to main  
stem; pinnate or bipinnate; generally few-flrd cypd to 2-3; when in single brcted  
condition, a dist or one dist may oft be 10 cypd at once, for a crowd bunch of flrd or  
beaut buds. "By the gl'ous & by effort's feature in our beaut, art, scenery."

Habitat; Deep, shady woods; also in fields in Ach., Army, dry soil; with, dry  
soil N2; 1806, moist soil; Duxbury, moist woods, Uxore, when cult. in  
open sunny borders.

*A. longifolius* Sp. by Sprengel & deca by Hervey, in *A. Naxosides*?



Earl Marble

C. roses-blends by cluster so In quiet fence-corner & in vices  
Of hedges that a dream of power Ye seem; soft, dainty dainties  
Of blushing ears, from distance viewed; Of leaves that seem the father there,  
When winds shall prove more sweet & ease, And stars in azure tiers less like

Three Head Goodale

Walled in with hse on either hand I walk the lovely wood-road there;  
The mistles hang above my head, And spaces where the wind has staid  
About my feet the living red Are filled with broken blue.

And crowding close along the way The purple Aspens blossom here;  
In full perfection, for I see, They fill the path on every side,  
In loose confusion, multiplied To endless harmony!

And still beside the shady glen She holds the office of the skies;  
Along the purpling wayside sleep She hangs her serpents passing deep,  
And meadows devoted to happy sleep Are lit by stargazy eyes!

GOLDEN-ROD *Aster*,

Bryant, D of the Plains

The Wind blew & the Violets they powdered lips,  
 And the *Bianca Rose* & the *Orchid* died among the mossy ferns;  
 But on the hill the Golden-rod, & the *Aster* in the woods,  
 And the yellow *Saxifrage* by the brook in autumn's beauty stood,  
*Miscanthus*, *Aster* & *Golden-rod* in "Vases"

I know the lands are lit  
 With all the autumnal blaze of *Golden-rod*;  
 And everywhere the *Bright Asters* <sup>the road</sup>  
 And *bind* & *wave* & *lit*.

But when the names I hear  
 I never picture how their parent lies  
 Spread out in tender stateliness of prime  
 The fairest of the year.

I only see one world  
 A wooded neck half sun half shade—  
 Where on I live his footsteps sudden stray,  
 And whisper, "Darling, God!"

Two oak leaves, vivid green  
 Hung low between the ferns, & parted <sup>children</sup>  
 While purple *Aster* stars close side by side  
 Like faces peered between.

Like maiden faces set  
 In vine-crawled winding waiting thy & glad  
 For joys whose dim mysterious promise had  
 But promise been, as yet.

And purple *Asters* <sup>or</sup> *Saxifrage*  
 Of *Hills* <sup>or</sup> *Mountains* <sup>or</sup> *Cliffs* <sup>or</sup> *Mountains*  
 Like north-east <sup>or</sup> *South-west* <sup>or</sup> *South-west*  
 Great branching stalks of *Golden-rod*.

<sup>Belton, Miss.</sup>  
 The *Golden-rod* is yellow  
 In every mountain nook,  
 And *Aster* by the roadside  
 Make <sup>the</sup> *mountain* <sup>the</sup> *road*.

<sup>Ill. or Miss.</sup>  
 Whiter than *lilies* in *decumbens*  
 Along the *river's* <sup>the</sup> *summit* <sup>the</sup> *sculpt*  
 The *solitude* <sup>the</sup> *lives* <sup>the</sup> *Aster* <sup>the</sup> *noisy*  
 And *travels* <sup>the</sup> *on* <sup>the</sup> *solid* <sup>the</sup> *stall*  
 The *hoar* <sup>the</sup> *plume* <sup>the</sup> *of* <sup>the</sup> *golden-rod*.

## GOLDEN-ROD

Says *Machon* "No piece or dose of *Aster* attains the rod be complete root herb  
 as an exact part thereof. . . This rich gel. of the *G* being so the duty for do  
 much wood the roots for unassured beauty, with *Aster* 'ant se an' 90."

In *Old* *W* only *102*, *S. Pigeon-culture*, which has a *viopete* *chang*, & *102* is *in*  
 there as *Golden-rod*; it is also native in our N. One *Aster* *poeta* has near 50  
 sp. only 7 in Cal. *Germ.* *Flores* *Virginia* 1762 no 3 sp; *Muhlenberg* in his  
 catalog 1813 no 43; for all *N. Am.* *Nuttall* no 49, 1819; *Wood's* *Class* *Bl.* doses  
 48 B of *Miss.*

*Solidago* *poeta* by *L.* is by him considered to *Violant* a *poeta* of the *gen.* *but*  
 sd. to be *L. solidus*, *robis*, *solidi* *de* *maed* *repp*, *Salmus*, *localise* *de* 1810,  
 It is | of the not noble *Wound-Heals*; *unus* *Wounds* *unus*. Also *quies*  
*luna* *at* *elyc*. Says *Culpeper* "Unus *unus* *thin* *herb*, It is a balsamic *unus*  
 any herb, is famous for wood *unus* & *houses*. *Unus* *unus* *is* *betw* *than* *a* *tea*  
 of the herb for this service; & the egg *unus*, *poeta* *unus*, *for* *the* *not* *unus*." *Unus*  
 puts it in *unus* *Medicina* *unus* a *unus* *unus* *unus*.

And like *pearl* *loves* *best*  
 In *veps* *conveys*, as *knigs* *wight* *over*,  
 Tall *Golden-Rods*, *back* *heads* *in* *the* *day*,  
 Above the *Aster* *loot*.

Ah me! *lands* *will* *be* *lit*  
 With every autumnal blaze of *Golden-rod*,  
 And purple *Aster* everywhere will nod  
 And *bind* *and* *wave* *and* *lit*;

Until like *ripened* *seed*,  
 This little earth *is* *one* *unus*, shall *dot*  
 Off into *sp*, as *they* *stains* *motif*,  
 Which *unus* *but* *God* *will* *beat*

But never *unus* *will* *be*  
 Sweet *Aster* *peeping* *that* *that* *branches* *of* *oak*  
*Unus* *unus* *precious* *unus* *as* *downy* *unus*  
 That *unus* *day* *unus*.

Like a *unus* *of* *unus* *joy*  
 Sounds the *will* *of* *the* *wheels*;  
 I lean *unus* *of* *the* *wind* *unus*  
 To the *left* *of* *the* *right*.

To my *friendly* *in* *the* *fields* *of* *the* *woods*,  
 For a *unus* *of* *unus*;  
 The *unus* *of* *unus* *and* *unus* *of* *unus*,  
 And that *stray* *unus*, *unus* *of* *the* *fields*,  
<sup>unus</sup>

All is left for *unus*! *unus* *are* *the* *shaves*  
 By *unus* *unus* *unus* *unus* *unus*,  
 And *unus* *in* *all* *the* *fields* *unus* *Golden-rod*  
<sup>unus</sup>, *unus*.



*S. ulmifolia* Muhl. Sp. by Moench; trees to grow in half shaded woods  
The Wood; not strictly close to its large open branching stalks. Muhl. says it  
diff. specimens and this is, & Willdenow publ. it. Th. etc. in FLOR. LIND. G.

## GOLDEN ROD.

BY MARY CLEMME AMES.

I've reached the land of Golden Rod,  
Afar I see it wave and nod,  
But yesterday in fiery street  
I heard the tramp of tired feet;  
Now on the heart of August noon  
Wood waters lapse in rippling tune,  
The curtains of the mossy burn  
Wear fringes deep of fragrant fern,  
The arches of its shining sluice  
Are slender spirals of the spruce,  
While far above I see them stir  
The lances of the stately fir,  
And on the down I see it nod  
And beckon me, the Golden Rod.

But yesterday it seemed to me  
That I could never turn and flee,  
Or ever find that quiet spot  
Where greed and gain and noise are not,  
Now far away the vexing strife,  
The turmoil and men misname life,  
Now here I wait till sunset dyes  
Steal through the azure of the skies,  
And soaring hill and circling plain  
Flash radiant with their rosy stain.

I wait till twilight, brooding deep,  
Takes earth within her arms asleep,  
And only low half-tones are heard:  
The flutter of the dreaming bird,  
The brooklet's rune below the pine;  
Low-leaping trout that spring and shine;  
The squirrel's rustle by the road,  
The farm-horse bearing home his load;  
The patter of the dropping burr,  
Grasshoppers in their holes astir;  
The cricket and the catydid  
Calling, in leafy houses hid;  
The bleat of lambs upon the hill,  
The cow-boy calling, keen and shrill,  
The cow-bells' answering, tinkling trill—  
The murmurs of a world at peace  
That stir and thrill and softly cease.

O, peaceful realm of Golden Rod!  
O, kingdom of the clovery sod!  
Thy tiny people of the ground  
Do reign devoid of jarring sound.  
Thy murmuring nations of the air  
Fulfill their fate, all free of care;  
They carry into God's good plan  
None of the loud ado of man.





all the shades that red can stain. There were chrysantheums with petals rolled up in a wide and straight band with petals curling at the tips like cravat tendrils; and there were a few tall of chrysantheums whose white, yellow, and red double blossoms were like most thin-petaled but giant thistles, or like bunches of willow plumes.

These chrysantheums in tents were only a foretaste of what followed after one had walked on through a grove, where dwarf maples were waving branches of their crimson across a riding court, along the shore of an old lotus pond and up a low hill to the chrysantheum garden proper. In that garden there were over sixty feet long, where the tall chrysantheum bushes bore bouquets of huge flowers of every possible shade. Adjoining it was a smaller tent where three full spreading bushes of chrysantheums were enthroned by themselves. These were the pieces of resistance, the miniature emblems of the garden, the one stalk that came from the ground as the root of each bush spreading out until one bore 173 flowers, another 222, and the third 382 full and evenly blown blossoms of a pale dull red, half shading into yellow. No one knows how it is done, the living plants stand close together, and the blossom of one plant being pure white, and as thickly set as if it were one great snow mound.

On another side of the chrysantheum garden was a long tent where the gardener had tried a different plan. Each plant had but the one stalk and a single flower, but that flower was a miracle and perfection, large, full, and spreading out 6, 8, and 10 inches or more in diameter, and exhibiting such wonderful colors, shades, and combinations that the end seemed reached. But on a third side of this great garden was a tent filled with bushes 5 and 6 feet high, which had been grafted with chrysantheums of different colors. One had bouquet-like white, yellow, and deep red flowers springing from the one root. Another had white daisy-like flowers, and a third had variegated flowers all together.

Fascinating as these floral wonders were, one could not stand at them long, when the celebrities of Japan were strolling about the garden. The chamberlains ran to and fro, the members of the government came to themselves in lines facing the first flower tent, Japanese officials drew up in another long line, and the hand in a grove beyond struck that of the Japanese national hymn, and the Minister of the Household appeared in the gateway, preceding the Emperor, the Empress, and the suite of the latter in the Chinese military uniform, and greeting first the Chinese Minister who is the dean of the diplomatic corps at Tokio, and then the other envoys and ambassadors from the other foreign Ministers.

The Empress who walked alone a few steps behind the Emperor, wore a gown of pearl-gray silk, low front in plain white, which lay laid between each plait, and a full back drapery of gold brocade. Bright and warm as the sun was, the autumn air had a keenness that the Empress wore a mantle of brown striped plush. Her bonnet was black velvet, with a cluster of shrimp pink ostrich tips, and the delicate white feathers of her dress. The Empress stands the change from Japanese to Parisian dress better than any of the princesses who accompanied her, and she is delicate, as high-bred, and refined in appearance as when the special hair dressing and the superfluous brocades were laid out as the fashion in Japan. Her hair is cut down close in a straight bang across her forehead, and drawn in bonnet and a bonnet strings, her complexion is that of a delicate white, with a pale-olive complexion, thin aquiline nose, well-eyes, where the different shapes of the blossoms cut mouth, and calm, quiet eyes. The Empress is too little worried to be called beautiful, but she has a great seriousness and dignity that impress one in that way. An English

servy officer, who has been in the Japanese army for some years, and is now returning to England, was presented to the Emperor and the Empress by Gen. Saigo. She accepted his advances with a graceful little bow, and the Imperial party then passed to admire the flowers, and receive the salutations of a line of higher officers of the army, whose uniforms, modelled after those of the European army, have given unlamented upon them and are among the handsomest of military uniforms.

The American Minister was not present, the Japanese preventing him from attempting the long walk through the palace grounds, and the American Consul-General was absent, but there was a representation of the government in the form of the secretaries of the Legation, the Vice Consul-General and a group of naval officers with their families. The Chinese Minister, in a blue and red native dress, was a dazzling figure of the day, and her blue satin gown with its borders of embroidered butterflies, and the deep blue and red of the skirt, which were distanced by a tight cap of gold filigree set with pearls that fitted closely over one-half of her head. The Korean Secretary of Legation, and another bright touch to the diplomatic group with his flowing blue gown with its bright red sleeves, and another with his bright red dress and his hair with a glittering tinge of amber beads.

### "The Queen of Autumn."

SOMETHING ABOUT THE POPULAR FAVORITE, THE CHRYSANTHEMUM.

From the Proceedings of the Horticultural Society. The increased attention which is being given to the cultivation of this exquisite flower cannot have escaped the notice of the least observant of our readers. No florist's collection is complete without it, and in most of our gardens its blooms light on the gloom which is caused by the absence of the favorites of the summer and early autumn. When the red of the rose has faded and the haunting daisies has withered on its stalk, the "queen of autumn" displays her bright colors in banks of blue, yellow, and in defiance of the early frosts. From all parts of the world we get the news of progress in the growing of this plant; in Belgium and other European countries are rivals in the race for perfection in its culture; and to those whose memories of the chrysantheum of the autumn have a general it may seem a little less than miraculous to behold the wonderful improvement which has been made in the form, size and color of its blossoms and their profusion. Despite all that has been done for the rose and the lily, they have not shown their gratitude and recognition to the cultivator who exceeds the rose in the delicacy of its delicacy of its shade, and surpasses the lily in the purity of its whiteness. In fact, all colors but blue may be found in its collection of these flowers, and one does not know which to admire the most, the cream white, ivory white, snow white or the yellow buff, sulphur, the pink, the yellow, the mine, pink, peach, purple, scarlet, bronze and a score of others; the sight is simply bewildering.

The introduction of this flower in England began, we are told, in 1762, the plant having been brought over from China; but the loss of the plant through some accident soon followed its introduction, and it was as late as the beginning of this century that any more attempts were made to introduce it; we do not know when the plant began to be known in our country. In 1808 there were some nine or ten varieties of the flower, produced by cultivation in bonnet and a bonnet strings, her complexion is that of a delicate white, with a pale-olive complexion, thin aquiline nose, well-eyes, where the different shapes of the blossoms cut mouth, and calm, quiet eyes. The Empress is too little worried to be called beautiful, but she has a great seriousness and dignity that impress one in that way. An English

the edges of whose flowers are involute and coherent, looking like small tubes; and the anemone flowered, which have a center like a sunburst, and a flat, rounded top, surrounded by a ray of flat florets. It seems almost wonderful when we remember that most of the superb chrysantheums which flourish in our culture should have come from a simple daisy-like flower, first brought from Chusan, an island on the east coast of China. It is an illustration of what an ardent, a facile love for flowers, combined with patience in their cultivation and close observation of their habits of growth, can accomplish in the production of new forms of floral beauty. It were worth the study of years to have produced a flower like the Mrs. G. Bunde, the splendid white bloom so well known to most of our readers, or the "Mrs. Halliburton," with its florets slightly curled, beautifully incurved, and its deep bloom of a primrose-white color, or the "James Sligh" with its rose-like, curled florets, the admiration of all frequenters of the famous London chrysantheum shows.

The Japanese variety of this flower is of a much later introduction than the Chinese, and to our sadist, not half so lovely, though the present fashion has decreed that it should prove more attractive to the general public. The first specimens which were sent to England struck everybody by their oddity. Some were spotted and striped; others were fantastically formed and called dragons, while one was a curiously fringed white bloom, which looked more like a Japanese pink than a chrysantheum. The petals of one were like long, thick hairs of a very pale yellow color, and the fringe of a shawl, while others were remarkable for their immense size and brilliant color. The distinctive attraction of the Japanese is claimed by the growers to be their endless diversity of form and color. One writer speaks of seeing the anemone-flowered Japanese as large as saucers and of all colors from white to crimson, scarlet and purple, though all the shades of sepia, primrose, yellow, buff and red. One of the great joys of the variety is, in addition to their large size, peculiarity of form or strangeness of color, that they bloom later and remain longer in bloom than the Chinese kinds, so that it is possible to have the flowers up to almost midwinter. For decorative purposes they are invaluable, and this is, perhaps, one of the reasons why they are being introduced more and more by our florists. Chrysantheum exhibitions are as popular abroad and in Boston, New York and Philadelphia, as are the spring and summer rose shows, and the American growers of the plant are not excelled by their foreign brethren in quality of blooms, however it may be as to quantity.

It is not necessary, however, that one should be a professional florist in order to be a successful grower of the chrysantheum. Any one who has a small conservatory, or even a large, well-lighted window or two, may find room for a few plants which have been allowed to grow out-of-doors during the summer and removed inside after the buds are tipped with color and before the sharp frost can touch them. After that, with ordinary care, they will do well, and prove a source of great delight when other flowers are faded and gone. The growing of this flower, in its highest perfection, is not yet, but has begun in this country, yet a great degree of success has been reached.

*Chrysantheum indicum*.—Banks' *Illustrations* are devoted to a painted copy, and a colored woodcut is printed on a line on page 75.

*Chrysantheum japonicum*.—CORN MARSHALL has kindly sent me a copy of the *Illustrations* of the *Chrysantheum japonicum*, and a copy of the *Illustrations* of the *Chrysantheum japonicum*.

A TALK ABOUT CHRYSANTHEMUMS  
The Discussions of the Horticultural Society—Rare Plants from China.  
A regular meeting of the District of Columbia Horticultural society was held at German hall, 11th, near F street, Wednesday evening; Mr. John Saul president, and Mr. W. J. Cogan secretary. There were on the tables, from Dr. W. Lee White, plants of Lawrence, Baronne De Meilo and Josephine de Meillo pears, wild apples, walnuts (American) and persimmons.  
Dr. Basil Norris, U. S. A., second vice president of the society now in California, through Mr. J. T. C. Clark, presented the society with some forty specimens of Chinese vegetables and garden seeds. These vegetables were regarded with much interest, most of them being unlike anything ever seen here before; 1 of them being no Chinaman present little could be learned of their quality or uses.  
Votes of thanks were passed to Dr. Norris for this exhibit, and to Dr. White for his gifts.

Col. S. S. Sull, of Sulland, Md.; Dr. D. J. Russell, of County Va.; and Mr. James Beall, of Sulland, D. C., were, on the recommendation of Dr. White, elected members.

Mr. Clark presented a resolution, which was adopted, expressing sympathy with Mrs. Mary A. Quinor, one of the oldest members, who is ill.

Mr. Saul, referring to the Clinton grape exhibited at the preceding meeting by Dr. White, said that it had a tuberos root, and came from a field, and that it did not grow in the open and put out again in the spring, but that it was rather too cold for it. He had, however, had some success with it by taking up the vines and keeping them in the hot house during the freezing weather and setting them out in the spring.

Mr. J. T. C. Clark remarked on the chrysantheum bloom this season as being better and fuller than he had ever before seen it. It, too, was in great demand, so much so that he had seen recently a two horse wagon load delivered at one of our hotels.

Mr. Saul said that the bloom this year was excellent and there had been much improvement. The Chinese and Japanese varieties were beautiful. The chrysantheum was easily protected and easily spoiled. Any loose straw or leaves thrown over the plant would protect it. Staking it with rotted manure is all that is needed.

Mr. Clark remarked that the chrysantheum was probably the most neglected of all the plants and generally it was left to the care of itself. It was really a handsome flower, and he hoped that more attention would be paid to it.

Mr. Fowler said that while he liked the color, form and scent of the flower, he certainly did not like the straggling growth of the plant. His favorites were the tuberos and the persimmons and with most of these he had been successful. He desired to ask if there was any possible way to grow to perfection the tuberos begonia. He had read of some with flowers six inches in diameter, but he would be satisfied if he could get flowers one-third that size.

Mr. Saul answered that they could be grown to produce flowers of six inches; that it was a native of the Andes, the climate being humid. They needed a shady place and all the rain possible, and could not be kept in the house under glass. He would recommend the use of slats to break the rays of the sun.

Mr. Clark said that he had noticed that when he dried off his cyclamens he lost many and was troubled with the black ants, but having forgotten to dry them off last year he now found them doing well. He had lost but few and was not troubled with the ants.  
Mr. Dr. Fowler remarked that the bulbs planted near the surface of the soil did well.



















ERICACEÆ.

Character: 2 called another species by pines. Shrubs, Evergreen:  
 lvs rigid, entire, unbordered or opposite; 0 stipules, Sg-5, P4-5 St 20 or more, C  
 Seeds minute. Fruit a capsule, w central placenta, loculicidal or septicidal.

Related Families. ERICACEÆ of the S, & RUTACEÆ & GENTIANÆ.

EBICAL alliance of Lily araliae of *Fumariaceae*, *Fraxinaceae*, *Epacridaceae*,  
 besides *Pyrolaceae* & *Mitostegaceae* now included in *Ericaceae* see end of *Ericaceae*.  
 Cf. *Cornaceae*, *Caprifoliaceae*, *Ericaceae*.

Importance 12 & 850 sp. "Com. com. of the most beaut. pts of which bo  
 any tree" by Brit. West + at CGdH, only imm. tracts; com. in Eur, N. Asia, in S. part of trop;  
 less com. in N. Am. & Ind.; when in trop. as daisy, only on highlts; also in Austr. where repl. by *Epiphan*  
 Properties diff. in the two sections as dio. by debiscence, made 2 orders by Justice, types *Erica*  
 and *Rhododendron*; but see in next, 2d. *Chapman, naxoticis*.

Important - the heath is covering & beautifying barren lands & moors

- " the *Rhododendron*, *Asplen*, esp. in *Erica*, *Calluna*, *Epiphan*, as objects of cultn; hence <sup>sp. l.</sup>
- " the *Heath* *Archives* as object of sale
- " many other wild species, as the *Rhodora*, objects of beauty & eagerly sought
- " the *Whitegum*, for aromatic leaves, essence & oil, bearing extract; sold
- " medicinal value, as *Van Dues*
- " in *Whiteberry* section, for berries for human & other food, sauces & preserves











RHODORA

RHODODENDRON 2. Angobodendron Koidob, Thei, Sald, Hymenanthus, Plum, p. Rhind 605

R. chinensis - a Chinese tree, not very common, growing on the side of mountains, the flowers in white clusters; call in various parts of the country; in the mountains of the north of China, a delicate perfume is said to be produced by the flowers, but it is not yet ascertained whether it is the same as the perfume of the flowers of the same tree in the mountains of the north of China.

R. pruriens - the Chinese "Swampy Shrub"; it is the plant to which the bees of Prussia collected the honey that produced the extraordinary symptoms of poisoning described as attacking the bee during the former harvest of the RHEU. Xen says afterwards, it is the men full employed in all things, but the field of the bee is not very common. *Linnaeus* takes *Arctostaphylos* pruriens as the cause.

R. mucronatum - said to be certainly a poison, by its name, not by its fruit.

R. ferrugineus, Swartz sp. near *variegatus*; an oil from its buds is called in Piedmont *medusa* *Olio di Macera* to judge in value of the fruit.

R. arboreum, Swartz eaten by hill people of India; formed into a jelly by *Diels* & *Wieg.*

R. campylocarum, its ferrugineous leaves used as snuff by Hindus; so, *DC.* in *US* is the *Arceuthobium* of *Ro.* & *Halmis*.

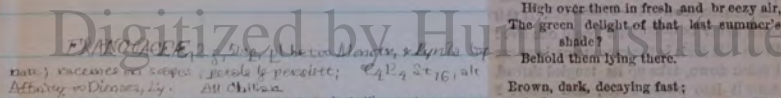
R. occidentale, in the West of the *Mariposa* *Gen.* 46, the large, thick, pink or white, red or crimson *BB* *Thayer*

Digitized by Botanic Institute for Botanical Documentation



IN UNUSUAL PLACES? possibly on ends of grass stems  
fls in terminal spikes etc or 1; Sg. 5 Pq. 5-6 P. 10 4-5  
Stig. broad-ovoid, succulent, 0.2-5 called at base, 1 at apex, pro. 5 P.  
Seeds +, held to Pyrothae by delin. cause of author's? the curious  
In Eng. Am. Mex., in cool of rocky woods. Sd. small, etc. V.  
6 g. 10 9.

Camelopardalium Russel  
Phacelium, Nivalis  
Schizanthus, the Anemopsis of Submontis  
Pterocarya acer. Nivalis see ad. to use fr. and  
Hypochaeris Bill, the Ochroschrota of Almut  
Monarda, Nect.  
M. Hypochaeris, powder of its leaves to steep with

Digitized by  for Botanical Zoology

FRANGULAEOIDES? *fr. in the wood, in Eng. & India*  
nan; recesses the corolla; petals 16 pericarp; C. R. 2 St. 16, etc.  
Activity in Dishes, Ly. All China.  
Eranthis, var. Julia ad to be held in Dill as only & seeds to  
Teilla Dc. called CULANPILLO & TETA DE CAPEA; and to T

PYROLACEAE 5g 20p. herbs, woody undershrubs;  
timbered top; fls 1 or in terminal racemes; Sg. C<sub>5</sub>+10 C<sub>2</sub>  
minute simple seeds & delicate styles. In Eng. Mex., N. Asia,  
Chloranthus Engg. C. baccatus is closely link to E.  
Chloranthus Engg. C. umbellata var. sect. dimeris  
applied to stem etc. etc. etc. etc.  
C. maculata, from Am. det. say to be really insert; ad. to be pollinifer. in  
Sog. narcotic. But fresh says to be active; hence Wood's Barbe. this cause

MONOTROPA

by MARY E. ATKINSON.

The woods are wet with dew,  
It hangs upon the leaves in glittering  
tears;  
And see, the damp dead oak-leaves pushing  
through,  
A group of flowers appears.  
Flowers cold and deathly pale,  
No flush upon their alabaster cheek;  
They feel no sun nor bend to any gale,  
No bees their white bells seek.  
They do not smile and glow,  
Or wave green leaves upon the summer  
air;  
Their bended heads are still and white as  
snow,  
And exquisitely fair,  
They seem not real, live flowers,  
But phantoms of last summer's lily-  
bells—  
Pale ghosts, revisiting the forest-bow,ers,  
Haunting the lonely dells.

Where are the leaves that played  
High over them in fresh and breezy air,  
The green delight of that last summer's  
shade?  
Behold them lying there.

Brown, dark, decaying fast;  
And these wan spirit-blossoms chillily  
grow  
Where those dead leaves were scattered by  
the blast  
And trampled by the snow.

Do you wind-roses thrill  
And shudder, think you, when they see  
their white  
And ghostly faces, and with inward chill  
Turn to the sun's warm light?

Rather, they bend and say,  
With love and pity: "Ah! dear souls of  
flowers,  
Ye bloomed so fair your fleeting summer  
day,  
Come ye and look on ours!"

"And if ye come to call  
Us where our heaven, the rainbow,  
spans the skies,  
Joyous we seek, while rosy petals fall,  
The Flower's Paradise!"

Shorea, Dec. 1862.

Romance of a Little Flower.  
EPISODE IN THE LIFE OF A BOTANIST—THE  
"SHORTIA GALACIOPOLIA."

A Boston special to the New York Tribune  
says: Prof. Gray, the veteran botanist of Har-  
vard college recently received from friends a  
beautiful vase in commemoration of his 76th  
birthday. Last Thursday morning each of those  
persons who gave toward the vase received a  
charming note of recognition from Prof. Gray,  
who alludes in this letter to the flowers asso-  
ciated with his name or with his special studies,  
which were embossed on the vase. Connected  
with one of these, the *Shortia Galacipolia* there  
is a romance from a botanist's point of view.  
A good many years ago the doctor was study-  
ing in Paris, and in a herbarium there came  
across a small, broken and imperfect specimen  
marked simply "From America," which inter-  
ested him much. From the fragments before  
him he reconstructed the whole plant. His  
work was approved by the botanists about him  
and he named the little plant, *Shortia Galacipolia*  
in honor of Dr. Charles W. Short the distin-  
guished botanist. But no live specimen of the  
plant could be found. Years passed on and it  
had never been seen. At last a botanist at work  
in Japan found and named a plant which  
seemed to be of a genus closely allied to the  
*Shortia*. Dr. Gray corresponded with the bot-  
anist and it was concluded that the doctor had  
been in error and had mistaken a specimen of  
the Japanese genus. So the *Shortia* was gener-  
ally left out of lists of plants by systematic bot-  
anists.

But twenty years after this, as Dr. Gooden  
and Prof. Watson were one day in the library  
at the university, they heard a shout of triumph  
from the herbarium and rushed in to find Dr. G.  
Gray waving a small plant about in the wildest  
enthusiasm.

"Look at it! What is it?" he cried.  
The two botanists examined it as dropped  
and recognized the characteristics of the much  
discussed plant.

"It is the *Shortia*!" they exclaimed.  
The specimen had been sent by a horse in the  
south which made a business of putting up  
medicinal herbs. It had been brought in from  
some hitherto unexplored nook in the moun-  
tains by one of their collectors and sent to the  
professor for identification. It proved indeed  
to be the *Shortia*, which was therefore once  
more reinstated in the floral family, greatly to  
Dr. Gray's delight.  
"Look at it! What is it?" he cried, as he took the small plant  
in his hand. "It is the *Shortia*!"

Monarda, Salvia.

Galax. L. the *Stephanandra*, *M. Rich*, *Solenandra*, *Salix*, *Elaeagnus*, *Andros*, *Vitis*, *Calla*, *Nich*, *Bolander*, *Tonno*

OF ADVERTISING.

**DIANTHACEAE** prostrate on crests of grass slopes; stems few or many; leafy; herb;  
 fls. in terminal spike or c. 1;  $2\frac{1}{2}$  -  $5$  -  $8$  -  $10$  -  $12$  -  $15$  Sepals distinct, in a spiral;  
 Stems basal, stipules evident, 0.4-5 called at base, 1 at apex; 5 perianth segments. Capsule dry, loculicidal.  
 Seeds +. Seed to Pyrolae by debris cause of authority. The curious tree scaly leaved *Epidia ophylla* connects them  
 In East Asia, in crevices of the woods. See small at Wilkes coll. No. 1.  
 G. g. 10 sp.

- Cosmopolithus* Kunth
- Phacelium*, Nutt. all.
- Schizanthus* Nutt., the *Alamogordo* of Schwinitz.
- Pterispora* Nutt. - Nuts used as a tonic fr. and sometimes as an emetic & diaphoretic.
- Hippolytia* Willd. the *Orebarachoides* of Alcock.
- Moronea*, Nutt.  
*M. Hippolytia*, powder of its bark used to steep when added by capsules.

Shorea Zucc. & Gr.

WELCOME NEWBORN TO THESE DISSEMINATED SEEDS...  
 I have the honor to acknowledge the receipt of your kind letter of the 10th inst. in relation to the seeds of the above named plants, which I have the pleasure to forward to you by this mail. I am, Sir, very respectfully,  
 Yours, J. H. CHESBROUGH

Digitized by Hunt Institute for Botanical Documentation

**FRANGULACEAE** fls. 4, 5, 6, 7, 8, 9, 10, 12, 15, 20, 25, 30, 35, 40, 45, 50, 55, 60, 65, 70, 75, 80, 85, 90, 95, 100, 105, 110, 115, 120, 125, 130, 135, 140, 145, 150, 155, 160, 165, 170, 175, 180, 185, 190, 195, 200, 205, 210, 215, 220, 225, 230, 235, 240, 245, 250, 255, 260, 265, 270, 275, 280, 285, 290, 295, 300, 305, 310, 315, 320, 325, 330, 335, 340, 345, 350, 355, 360, 365, 370, 375, 380, 385, 390, 395, 400, 405, 410, 415, 420, 425, 430, 435, 440, 445, 450, 455, 460, 465, 470, 475, 480, 485, 490, 495, 500, 505, 510, 515, 520, 525, 530, 535, 540, 545, 550, 555, 560, 565, 570, 575, 580, 585, 590, 595, 600, 605, 610, 615, 620, 625, 630, 635, 640, 645, 650, 655, 660, 665, 670, 675, 680, 685, 690, 695, 700, 705, 710, 715, 720, 725, 730, 735, 740, 745, 750, 755, 760, 765, 770, 775, 780, 785, 790, 795, 800, 805, 810, 815, 820, 825, 830, 835, 840, 845, 850, 855, 860, 865, 870, 875, 880, 885, 890, 895, 900, 905, 910, 915, 920, 925, 930, 935, 940, 945, 950, 955, 960, 965, 970, 975, 980, 985, 990, 995, 1000, 1005, 1010, 1015, 1020, 1025, 1030, 1035, 1040, 1045, 1050, 1055, 1060, 1065, 1070, 1075, 1080, 1085, 1090, 1095, 1100, 1105, 1110, 1115, 1120, 1125, 1130, 1135, 1140, 1145, 1150, 1155, 1160, 1165, 1170, 1175, 1180, 1185, 1190, 1195, 1200, 1205, 1210, 1215, 1220, 1225, 1230, 1235, 1240, 1245, 1250, 1255, 1260, 1265, 1270, 1275, 1280, 1285, 1290, 1295, 1300, 1305, 1310, 1315, 1320, 1325, 1330, 1335, 1340, 1345, 1350, 1355, 1360, 1365, 1370, 1375, 1380, 1385, 1390, 1395, 1400, 1405, 1410, 1415, 1420, 1425, 1430, 1435, 1440, 1445, 1450, 1455, 1460, 1465, 1470, 1475, 1480, 1485, 1490, 1495, 1500, 1505, 1510, 1515, 1520, 1525, 1530, 1535, 1540, 1545, 1550, 1555, 1560, 1565, 1570, 1575, 1580, 1585, 1590, 1595, 1600, 1605, 1610, 1615, 1620, 1625, 1630, 1635, 1640, 1645, 1650, 1655, 1660, 1665, 1670, 1675, 1680, 1685, 1690, 1695, 1700, 1705, 1710, 1715, 1720, 1725, 1730, 1735, 1740, 1745, 1750, 1755, 1760, 1765, 1770, 1775, 1780, 1785, 1790, 1795, 1800, 1805, 1810, 1815, 1820, 1825, 1830, 1835, 1840, 1845, 1850, 1855, 1860, 1865, 1870, 1875, 1880, 1885, 1890, 1895, 1900, 1905, 1910, 1915, 1920, 1925, 1930, 1935, 1940, 1945, 1950, 1955, 1960, 1965, 1970, 1975, 1980, 1985, 1990, 1995, 2000, 2005, 2010, 2015, 2020, 2025, 2030, 2035, 2040, 2045, 2050, 2055, 2060, 2065, 2070, 2075, 2080, 2085, 2090, 2095, 2100, 2105, 2110, 2115, 2120, 2125, 2130, 2135, 2140, 2145, 2150, 2155, 2160, 2165, 2170, 2175, 2180, 2185, 2190, 2195, 2200, 2205, 2210, 2215, 2220, 2225, 2230, 2235, 2240, 2245, 2250, 2255, 2260, 2265, 2270, 2275, 2280, 2285, 2290, 2295, 2300, 2305, 2310, 2315, 2320, 2325, 2330, 2335, 2340, 2345, 2350, 2355, 2360, 2365, 2370, 2375, 2380, 2385, 2390, 2395, 2400, 2405, 2410, 2415, 2420, 2425, 2430, 2435, 2440, 2445, 2450, 2455, 2460, 2465, 2470, 2475, 2480, 2485, 2490, 2495, 2500, 2505, 2510, 2515, 2520, 2525, 2530, 2535, 2540, 2545, 2550, 2555, 2560, 2565, 2570, 2575, 2580, 2585, 2590, 2595, 2600, 2605, 2610, 2615, 2620, 2625, 2630, 2635, 2640, 2645, 2650, 2655, 2660, 2665, 2670, 2675, 2680, 2685, 2690, 2695, 2700, 2705, 2710, 2715, 2720, 2725, 2730, 2735, 2740, 2745, 2750, 2755, 2760, 2765, 2770, 2775, 2780, 2785, 2790, 2795, 2800, 2805, 2810, 2815, 2820, 2825, 2830, 2835, 2840, 2845, 2850, 2855, 2860, 2865, 2870, 2875, 2880, 2885, 2890, 2895, 2900, 2905, 2910, 2915, 2920, 2925, 2930, 2935, 2940, 2945, 2950, 2955, 2960, 2965, 2970, 2975, 2980, 2985, 2990, 2995, 3000, 3005, 3010, 3015, 3020, 3025, 3030, 3035, 3040, 3045, 3050, 3055, 3060, 3065, 3070, 3075, 3080, 3085, 3090, 3095, 3100, 3105, 3110, 3115, 3120, 3125, 3130, 3135, 3140, 3145, 3150, 3155, 3160, 3165, 3170, 3175, 3180, 3185, 3190, 3195, 3200, 3205, 3210, 3215, 3220, 3225, 3230, 3235, 3240, 3245, 3250, 3255, 3260, 3265, 3270, 3275, 3280, 3285, 3290, 3295, 3300, 3305, 3310, 3315, 3320, 3325, 3330, 3335, 3340, 3345, 3350, 3355, 3360, 3365, 3370, 3375, 3380, 3385, 3390, 3395, 3400, 3405, 3410, 3415, 3420, 3425, 3430, 3435, 3440, 3445, 3450, 3455, 3460, 3465, 3470, 3475, 3480, 3485, 3490, 3495, 3500, 3505, 3510, 3515, 3520, 3525, 3530, 3535, 3540, 3545, 3550, 3555, 3560, 3565, 3570, 3575, 3580, 3585, 3590, 3595, 3600, 3605, 3610, 3615, 3620, 3625, 3630, 3635, 3640, 3645, 3650, 3655, 3660, 3665, 3670, 3675, 3680, 3685, 3690, 3695, 3700, 3705, 3710, 3715, 3720, 3725, 3730, 3735, 3740, 3745, 3750, 3755, 3760, 3765, 3770, 3775, 3780, 3785, 3790, 3795, 3800, 3805, 3810, 3815, 3820, 3825, 3830, 3835, 3840, 3845, 3850, 3855, 3860, 3865, 3870, 3875, 3880, 3885, 3890, 3895, 3900, 3905, 3910, 3915, 3920, 3925, 3930, 3935, 3940, 3945, 3950, 3955, 3960, 3965, 3970, 3975, 3980, 3985, 3990, 3995, 4000, 4005, 4010, 4015, 4020, 4025, 4030, 4035, 4040, 4045, 4050, 4055, 4060, 4065, 4070, 4075, 4080, 4085, 4090, 4095, 4100, 4105, 4110, 4115, 4120, 4125, 4130, 4135, 4140, 4145, 4150, 4155, 4160, 4165, 4170, 4175, 4180, 4185, 4190, 4195, 4200, 4205, 4210, 4215, 4220, 4225, 4230, 4235, 4240, 4245, 4250, 4255, 4260, 4265, 4270, 4275, 4280, 4285, 4290, 4295, 4300, 4305, 4310, 4315, 4320, 4325, 4330, 4335, 4340, 4345, 4350, 4355, 4360, 4365, 4370, 4375, 4380, 4385, 4390, 4395, 4400, 4405, 4410, 4415, 4420, 4425, 4430, 4435, 4440, 4445, 4450, 4455, 4460, 4465, 4470, 4475, 4480, 4485, 4490, 4495, 4500, 4505, 4510, 4515, 4520, 4525, 4530, 4535, 4540, 4545, 4550, 4555, 4560, 4565, 4570, 4575, 4580, 4585, 4590, 4595, 4600, 4605, 4610, 4615, 4620, 4625, 4630, 4635, 4640, 4645, 4650, 4655, 4660, 4665, 4670, 4675, 4680, 4685, 4690, 4695, 4700, 4705, 4710, 4715, 4720, 4725, 4730, 4735, 4740, 4745, 4750, 4755, 4760, 4765, 4770, 4775, 4780, 4785, 4790, 4795, 4800, 4805, 4810, 4815, 4820, 4825, 4830, 4835, 4840, 4845, 4850, 4855, 4860, 4865, 4870, 4875, 4880, 4885, 4890, 4895, 4900, 4905, 4910, 4915, 4920, 4925, 4930, 4935, 4940, 4945, 4950, 4955, 4960, 4965, 4970, 4975, 4980, 4985, 4990, 4995, 5000, 5005, 5010, 5015, 5020, 5025, 5030, 5035, 5040, 5045, 5050, 5055, 5060, 5065, 5070, 5075, 5080, 5085, 5090, 5095, 5100, 5105, 5110, 5115, 5120, 5125, 5130, 5135, 5140, 5145, 5150, 5155, 5160, 5165, 5170, 5175, 5180, 5185, 5190, 5195, 5200, 5205, 5210, 5215, 5220, 5225, 5230, 5235, 5240, 5245, 5250, 5255, 5260, 5265, 5270, 5275, 5280, 5285, 5290, 5295, 5300, 5305, 5310, 5315, 5320, 5325, 5330, 5335, 5340, 5345, 5350, 5355, 5360, 5365, 5370, 5375, 5380, 5385, 5390, 5395, 5400, 5405, 5410, 5415, 5420, 5425, 5430, 5435, 5440, 5445, 5450, 5455, 5460, 5465, 5470, 5475, 5480, 5485, 5490, 5495, 5500, 5505, 5510, 5515, 5520, 5525, 5530, 5535, 5540, 5545, 5550, 5555, 5560, 5565, 5570, 5575, 5580, 5585, 5590, 5595, 5600, 5605, 5610, 5615, 5620, 5625, 5630, 5635, 5640, 5645, 5650, 5655, 5660, 5665, 5670, 5675, 5680, 5685, 5690, 5695, 5700, 5705, 5710, 5715, 5720, 5725, 5730, 5735, 5740, 5745, 5750, 5755, 5760, 5765, 5770, 5775, 5780, 5785, 5790, 5795, 5800, 5805, 5810, 5815, 5820, 5825, 5830, 5835, 5840, 5845, 5850, 5855, 5860, 5865, 5870, 5875, 5880, 5885, 5890, 5895, 5900, 5905, 5910, 5915, 5920, 5925, 5930, 5935, 5940, 5945, 5950, 5955, 5960, 5965, 5970, 5975, 5980, 5985, 5990, 5995, 6000, 6005, 6010, 6015, 6020, 6025, 6030, 6035, 6040, 6045, 6050, 6055, 6060, 6065, 6070, 6075, 6080, 6085, 6090, 6095, 6100, 6105, 6110, 6115, 6120, 6125, 6130, 6135, 6140, 6145, 6150, 6155, 6160, 6165, 6170, 6175, 6180, 6185, 6190, 6195, 6200, 6205, 6210, 6215, 6220, 6225, 6230, 6235, 6240, 6245, 6250, 6255, 6260, 6265, 6270, 6275, 6280, 6285, 6290, 6295, 6300, 6305, 6310, 6315, 6320, 6325, 6330, 6335, 6340, 6345, 6350, 6355, 6360, 6365, 6370, 6375, 6380, 6385, 6390, 6395, 6400, 6405, 6410, 6415, 6420, 6425, 6430, 6435, 6440, 6445, 6450, 6455, 6460, 6465, 6470, 6475, 6480, 6485, 6490, 6495, 6500, 6505, 6510, 6515, 6520, 6525, 6530, 6535, 6540, 6545, 6550, 6555, 6560, 6565, 6570, 6575, 6580, 6585, 6590, 6595, 6600, 6605, 6610, 6615, 6620, 6625, 6630, 6635, 6640, 6645, 6650, 6655, 6660, 6665, 6670, 6675, 6680, 6685, 6690, 6695, 6700, 6705, 6710, 6715, 6720, 6725, 6730, 6735, 6740, 6745, 6750, 6755, 6760, 6765, 6770, 6775, 6780, 6785, 6790, 6795, 6800, 6805, 6810, 6815, 6820, 6825, 6830, 6835, 6840, 6845, 6850, 6855, 6860, 6865, 6870, 6875, 6880, 6885, 6890, 6895, 6900, 6905, 6910, 6915, 6920, 6925, 6930, 6935, 6940, 6945, 6950, 6955, 6960, 6965, 6970, 6975, 6980, 6985, 6990, 6995, 7000, 7005, 7010, 7015, 7020, 7025, 7030, 7035, 7040, 7045, 7050, 7055, 7060, 7065, 7070, 7075, 7080, 7085, 7090, 7095, 7100, 7105, 7110, 7115, 7120, 7125, 7130, 7135, 7140, 7145, 7150, 7155, 7160, 7165, 7170, 7175, 7180, 7185, 7190, 7195, 7200, 7205, 7210, 7215, 7220, 7225, 7230, 7235, 7240, 7245, 7250, 7255, 7260, 7265, 7270, 7275, 7280, 7285, 7290, 7295, 7300, 7305, 7310, 7315, 7320, 7325, 7330, 7335, 7340, 7345, 7350, 7355, 7360, 7365, 7370, 7375, 7380, 7385, 7390, 7395, 7400, 7405, 7410, 7415, 7420, 7425, 7430, 7435, 7440, 7445, 7450, 7455, 7460, 7465, 7470, 7475, 7480, 7485, 7490, 7495, 7500, 7505, 7510, 7515, 7520, 7525, 7530, 7535, 7540, 7545, 7550, 7555, 7560, 7565, 7570, 7575, 7580, 7585, 7590, 7595, 7600, 7605, 7610, 7615, 7620, 7625, 7630, 7635, 7640, 7645, 7650, 7655, 7660, 7665, 7670, 7675, 7680, 7685, 7690, 7695, 7700, 7705, 7710, 7715, 7720, 7725, 7730, 7735, 7740, 7745, 7750, 7755, 7760, 7765, 7770, 7775, 7780, 7785, 7790, 7795, 7800, 7805, 7810, 7815, 7820, 7825, 7830, 7835, 7840, 7845, 7850, 7855, 7860, 7865, 7870, 7875, 7880, 7885, 7890, 7895, 7900, 7905, 7910, 7915, 7920, 7925, 7930, 7935, 7940, 7945, 7950, 7955, 7960, 7965, 7970, 7975, 7980, 7985, 7990, 7995, 8000, 8005, 8010, 8015, 8020, 8025, 8030, 8035, 8040, 8045, 8050, 8055, 8060, 8065, 8070, 8075, 8080, 8085, 8090, 8095, 8100, 8105, 8110, 8115, 8120, 8125, 8130, 8135, 8140, 8145, 8150, 8155, 8160, 8165, 8170, 8175, 8180, 8185, 8190, 8195, 8200, 8205, 8210, 8215, 8220, 8225, 8230, 8235, 8240, 8245, 8250, 8255, 8260, 8265, 8270, 8275, 8280, 8285, 8290, 8295, 8300, 8305, 8310, 8315, 8320, 8325, 8330, 8335, 8340, 8345, 8350, 8355, 8360, 8365, 8370, 8375, 8380, 8385, 8390, 8395, 8400, 8405, 8410, 8415, 8420, 8425, 8430, 8435, 8440, 8445, 8450, 8455, 8460, 8465, 8470, 8475, 8480, 8485, 8490, 8495, 8500, 8505, 8510, 8515, 8520, 8525, 8530, 8535, 8540, 8545, 8550, 8555, 8560, 8565, 8570, 8575, 8580, 8585, 8590, 8595, 8600, 8605, 8610, 8615, 8620, 8625, 8630, 8635, 8640, 8645, 8650, 8655, 8660, 8665, 8670, 8675, 8680, 8685, 8690, 8695, 8700, 8705, 8710, 8715, 8720, 8725, 8730, 8735, 8740, 8745, 8750, 8755, 8760, 8765, 8770, 8775, 8780, 8785, 8790, 8795, 8800, 8805, 8810, 8815, 8820, 8825, 8830, 8835, 8840, 8845, 8850, 8855, 8860, 8865, 8870, 8875, 8880, 8885, 8890, 8895, 8900, 8905, 8910, 8915, 8920, 8925, 8930, 8935, 8940, 8945, 8950, 8955, 8960, 8965, 8970, 8975, 8980, 8985, 8990, 8995, 9000, 9005, 9010, 9015, 9020, 9025, 9030, 9035, 9040, 9045, 9050, 9055, 9060, 9065, 9070, 9075, 9080, 9085, 9090, 9095, 9100, 9105, 9110, 9115, 9120, 9125, 9130, 9135, 9140, 9145, 9150, 9155, 9160, 9165, 9170, 9175, 9180, 9185, 9190, 9195, 9200, 9205, 9210, 9215, 9220, 9225, 9230, 9235, 9240, 9245, 9250, 9255, 9260, 9265, 9270, 9275, 9280, 9285, 9290, 9295, 9300, 9305, 9310, 9315, 9320, 9325, 9330, 9335, 9340, 9345, 9350, 9355, 9360, 9365, 9370, 9375, 9380, 9385, 9390, 9395, 9400, 9405, 9410, 9415, 9420, 9425, 9430, 9435, 9440, 9445, 9450, 9455, 9460, 9465, 9470, 9475, 9480, 9485, 9490, 9495, 9500, 9505, 9510, 9515, 9520, 9525, 9530, 9535, 9540, 9545, 9550, 9555, 9560, 9565, 9570, 9575, 9580, 9585, 9590, 9595, 9600, 9605, 9610, 9615, 9620, 9625, 9630, 9635, 9640, 9645, 9650, 9655, 9660, 9665, 9670, 9675, 9680, 9685, 9690, 9695, 9700, 9705, 9710, 9715, 9720, 9725, 9730, 9735, 9740, 9745, 9750, 9755, 9760, 9765, 9770, 9775, 9780, 9785, 9790, 9795, 9800, 9805, 9810, 9815, 9820, 9825, 9830, 9835, 98











VISCARIA Ruhl. Abs. Hymenanth. Fend.

CORCHARIA L.

AGROSTEMMA (the Siboga) Desf. **CORN-COCKLE**. Shows the poisonous by Holagora & McBrout.   
 but not sure to show any poison. Saprine here only in roots, purple & seeds.   
 July 4. 1860 93

HEBELIMA Hochst.

LYCHNIS Ruess. CROWEFLOWER of Siboga (C. H. 51) **RAGGED ROBIN** and in Eng.   
 In dioica on Sappora, as do L. chalcidica, & this-cucull. L. dioica & L. chalcidica are poisonous.

LLICEBRACE: constituted 1777 in Cat. Garden of Paris, as *Trorachina*; as *Melcebrace*, 1810; by

R. Brown; as *Paronychia*, by St. Hilaire, 1827. made a new order by Lindley as *KNOXOCHLORIS*.   
 Herbs or half-shrubby; lvs sessile, entire, oft falcate; scarious stipules; mature fls or scarious   
 bracts; 2s 2s 5s, C. Seeds 1-seed. Divided by C. Agropyri by stipules; fr. Purshiana by position of   
 the stamens bet the sepals not before the petals; fr. Houslecker by no discrete carpels; often agree in   
 habit; Spergularia is link to Eriact. 24p. 160 sp.   
 S of Eur & N of Afr are the same; these grow in most barren pls, coverg on thk vepa soil wh. is in cap-   
 able of anything else. A few at Cape GH; N Am & Mex have 2. Only sensible property is a   
 trace of astringency.

*Hevelaria Thunbergi*.   
 *Illecebrum Robertsii*. I. *Paronychia* was found by Sibthorp to be quite the P of *Ellygonia*, at April end of pl. at the   
 the same history.   
 Decagentia of Alg. *ARABIDOPSIS* much used in Egypt as beverage & as emetic for weak digestion.   
 *Paronychia Jusq.* (the *Arachis* of L. C. R. 1816) Hippocretia of Link, d. 3778. C. s. 1320, 1321, 1322, 1323, 1324, 1325, 1326, 1327, 1328, 1329, 1330, 1331, 1332, 1333, 1334, 1335, 1336, 1337, 1338, 1339, 1340, 1341, 1342, 1343, 1344, 1345, 1346, 1347, 1348, 1349, 1350, 1351, 1352, 1353, 1354, 1355, 1356, 1357, 1358, 1359, 1360, 1361, 1362, 1363, 1364, 1365, 1366, 1367, 1368, 1369, 1370, 1371, 1372, 1373, 1374, 1375, 1376, 1377, 1378, 1379, 1380, 1381, 1382, 1383, 1384, 1385, 1386, 1387, 1388, 1389, 1390, 1391, 1392, 1393, 1394, 1395, 1396, 1397, 1398, 1399, 1400, 1401, 1402, 1403, 1404, 1405, 1406, 1407, 1408, 1409, 1410, 1411, 1412, 1413, 1414, 1415, 1416, 1417, 1418, 1419, 1420, 1421, 1422, 1423, 1424, 1425, 1426, 1427, 1428, 1429, 1430, 1431, 1432, 1433, 1434, 1435, 1436, 1437, 1438, 1439, 1440, 1441, 1442, 1443, 1444, 1445, 1446, 1447, 1448, 1449, 1450, 1451, 1452, 1453, 1454, 1455, 1456, 1457, 1458, 1459, 1460, 1461, 1462, 1463, 1464, 1465, 1466, 1467, 1468, 1469, 1470, 1471, 1472, 1473, 1474, 1475, 1476, 1477, 1478, 1479, 1480, 1481, 1482, 1483, 1484, 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NOISETTIA Kunth (Bipolaria, P., Diolacoides, Mihr.)

ANCILETIA Hill. (Noiseitia, M & Z.) A. salutaris, a creep bush, w. anal. of Cabbage, & numerous uses, first in Brazil & Germany apt. skin dia. Some prefer seed to it as to V. canina, orcaea, in appce.

SCHWIEGGERIA Spreng. (Glossanthen, M & Z)

CORYNOSTYLIS M & Z. (Calyptaria, Ging.) Toxicity stem; seeds a berry; the link to Passiflora. the capsule epined & perimate has h'd 1844, p. 538, of C. Hybanthus.

AMPHIRHYZE Spreng. (Amphirrhys, Rehb, Spathularia, Hill, Bradley, Fl. Flam.)

ALSCOPIA Thunberg (Alscopia, M & Z, Conchocia Kunth, Aubl, Dipax, Bernh, Physiphora, Island, Riana, Aust. Passouca, Aubl, Bianaia, Aubl, Cavanthoa, Pallas, Passalia, Rafin, Eucostesia, Blum, A, (Cranacia) Liberto, its used in Brazil as Spinaea, or boiled, becom muscipulae.

TETRAETHYLUM Ripp.

PENTALGEA Lour. (Vareia, Roxb)

HYMENANTHERA R & B.

NECKIA Nees

TRILICYPUS Kunth

LEONIA RR. (Stenocia, Mart)

PASPEYROLA Aubl. (Cericlita, Bern)

VIOLETA. Reddish ripe, the sides umbellate, the seeds in medicine; the apple in Brazil has the same ple. breaks heads. V. canina that a small apt. skin dia. [So its discoidal leg. red, Anabeta, in Brazil, in Brazil]

V. ovata sd to be seen for pattleless blue. V. kiriana, HARY V, Rhind 586

V. tricolor, braced, has small 14. Beards, leaves; supd. to no Bessie and Bianca; once th'd useful to cure skin dia. in Brazil; sd used in it in chaco cogito Rhind 589

V. odopata, petals used as laxative for chol. 1 drachm quantity qd. freely; seeds by similar usage; root emetic, piquant. Aqueous tincture of this is a useful skin soot; uncombined acids dig. the blue, red, & alkalies on p. Some had a wine made of V. les. they are sd to be sd used in preparing the Grand Signor's Herbat. Some think the fls an anodyne; they certainly produce faintness & blindness in an obstinate, as by had without a Triller ment's case in wh they produced apoplexy. SWEET VIOLET Rhind 586

V. pedunculata, the (1742 V. of Col) WILDING. I first saw it belong to Almond Rock, San Jose; growing in a pasture where cows were feeding; but petals turned to the sun curved nearly 1/2 a circle of ground. Fls large as V. pedicels, from centers, 2. upper petals braced beneath. Stemless, lvs ovalish, w. 5, 6, ovate, lobes.

## VIOLETS

His History; ~~Hand Book~~ Rem's oft ascribing the Violet to the Rose & Lily, as an ornament to the garden & the person. Vauvo, bef the fall of the Republic advised those having land near Rome to plant V and roses as a profitable speculation, & names the best season for doing so; Hellogabius had his palace rooms carpeted with violets, among these flowers.

Origin in culta, was from Aethiopia; i.e. as a garden flower & in its improved form; Cae. Rex originally violet; L. violet doubtless from it; hence probable that its cultivation came from Asia to Greece, thence to Italy.

Horace uses *ioia* in describing the verdant scenery round Calypso's cave, where it grows in moist meadows with the pansy; but accompanying for it, *Thais*; "but even here it means any daisied flower, together scented or not." Heba. He uses *ioia* also in descriptive adjectives, *io-eidas*, *io-dnephas*, *io-eis*, but *io* reference to dark color, not scent. When later, the variegated light-colored violet was distinguished from the dark the light generally was called both the *glycyflora* of Matthis's meaning, & the *meliflora*, Chouvaoutous claim.

Lucretius says Hermy with the poets ever since flower wrote of it, as he had seen it grow a thing in the far off vale, in the "rich banks" of the Meles. "Es why appeared Meadows of sweet breathing purpled for With violets, it was a scene in full A foot from Heaven with wonder and delight.



NOLSETTIA Kun

ANCHITEA Sch

SCHWEGGEBRI

CORYNOSTYLIS

AMPHIBARIX

ALSOIDEIA Theb

Passerina, Nutt, R1

A. (Coccoloba)

TETRAEFLACI

REOPLALCEA Lam

HYMENANTHERA A

NECRIA Kunth

DIACRYDIA K

LEONIA Raf (se

PARAPSYDIA A

VIOLA. Redout

V. canadica that a p

V. ovata sd to be

V. hirsuta, HARRY V

V. tricolor; bousie

etia. d. in Euc; sel u

(Kind 589)

V. odorata, petal

Aqueous varietal of the

Romans had a wine m

Some thk the fls are a

ments a case in wh

V. pedunculata, fl

where com. even had

been noticed, a large p

Violets.

He kissed the child, & called him by his own  
He bowed for his blue eyes opened like V  
(I swear a thousand years faster than I  
S. E. Rex

Thou' the garden's Faintest bloom (Collected  
In the grove before King Lear's tomb  
Pleading violet, sweet song, Said thou  
Friends! he said, be these my tenders? he  
Said good-bye, & he has hidden. There is  
Thou' the violets curled and bluish, And  
Carved children as a robin - Carried in  
'Father Violet' owned the king.

These old words, rehearse lately the violet  
At Muddy we know thou art kind hearted  
And out of sight, at morning Apollo's sight  
Violets ring, hark, hark, makes, Claydon  
A royal road, for seals of gold. Golden  
Rabies call, call, call, the road, hark; The violet  
April songs, red, these are, say; Woop; blue a

And Europe's violet, finally sweet, brought the  
The violet is frequent but it fades in time, the violet, once bright  
And violet soon in autumn, some such way, violet  
A violet violet, violet, The violet, violet, violet  
The violet, violet, violet, violet, violet, violet

Some had the violet ceased to shed? The violet  
The violet, violet, violet, violet, violet, violet  
The violet, violet, violet, violet, violet, violet  
The violet, violet, violet, violet, violet, violet  
The violet, violet, violet, violet, violet, violet

A violet  
God does not send strange flowers every year; he  
The same dear things lit up the same rain  
In all our beds, the day, the day, the day  
No hands, & left, no looking-for is cheated; it is  
Some, the death, when it must be; God will  
The old love shall look no more the old faces.

VIOLA. Redout  
V. canadica that a p

V. ovata sd to be  
V. hirsuta, HARRY V

V. tricolor; bousie  
etia. d. in Euc; sel u

(Kind 589)

V. odorata, petal  
Aqueous varietal of the  
Romans had a wine m

Some thk the fls are a  
ments a case in wh

V. pedunculata, fl  
where com. even had  
been noticed, a large p

HUMILITY.

BY J. WILSON WAHD, JR.

THE violet bows its lowly head  
And bends its pliant form,  
While overhead high-towering oaks  
Defy the embattled storm.

The tempest o'er, while shattered oaks  
Their desolations mourn,  
The violet lifts its smiling face,  
Without a petal torn!

Violets.

Written for THE EVENING STAR.  
Sweeter flowers were never shaped  
Than violets, that blow  
In tenderest azure, just escaped  
From prison 'neath the snow.

They smile, like babes on mother's breast,  
And breathe an odor fine,  
As if they were but lately pressed  
To lips of the DIVINE.

The balustrade winds, that sway the trees  
'Tween earth and sky, it seems  
Touch with the lightest touches these  
That are but shaped for dreams.

And grasses cross, like sabers bright,  
Above each little head,  
As though to guard them, small and slight,  
From careless human tread.

Ah, frail, pure flowers! the angels know  
What thy brief mission is.  
They meet with love the winter snow  
To greet thee with glad kiss;

And human hearts are blessed by thee,  
Thou harbingers of Spring,  
Born from a year's sweet mystery—  
God's floral offering!

April 15, '88. —MARRI LILLIANSON.

Her hands are cold; her face is white;  
No more her pulses come and go;  
Her eyes are shut to life and light;  
Fold the white vesture, snow on snow,  
But lay her where the violets blow.

Put not beneath a graven stone,  
To plead for tears with alien eyes,  
A slender cross of wood alone,  
Shall say that here a maiden lies,  
In peace, beneath the peaceful skies.

And gray old trees of hugest limb  
Shall wheel their circling shadow round,  
To make the scorching sunlight dim  
That drinks the greenness from the ground,  
And drop the dead leaves on her mound.

When o'er their boughs the squirrels run,  
And through their leaves the robins call,  
And ripening in the autumn's sun  
The acorns and the chestnuts fall,  
Doubt not that she will heed them all.

For her the morning choir shall sing  
Its matins from the branches high;  
And every minstrel voice of spring  
That thrills beneath the April sky,  
Shall greet her with its earliest cry.

At last the rootlets of the trees  
Shall find the prison, where she lies,  
And bear the buried dust they seize  
In leaves and blossoms to the skies;  
So may the soul that warmed it rise.

If any, born of kinder blood,  
Should ask: What maiden sleeps below?  
Say only this: A tender bud,  
That tried to blossom in the snow,  
Lies withered where the violets blow!



Silver Medal,  
St. Petersburg 1884.



Gold Medal  
from his Maj. Emperor William I.



Silver Medal,  
Paris 1887.



Diploma of Prize,  
Vienna 1873.



Silver Medal,  
Cologne 1875.



Great Silver Medal,  
Berlin 1885.



Royal Prussian State's Medal,  
the first premium at Berlin 1885.



Silver Medal,  
Cologne 1888.



Silver Medal,  
Dresden 1887.



Gold Medal,  
Hamburg 1887.



Gold Medal,  
Leipzig 1884.



Silver State's Medal,  
Hannover 1883.



Great Silver Medal,  
Frankfurt on the Main 1884.



Bronze Medal,  
Berlin 1878.



Silver Medal,  
Hamburg 1869.



22 great Silver Medals,  
Hamburg.



Silver Medal,  
Bremen 1874.



Silver Medal,  
Erford 1876.



Gold Medal,  
Antwerp 1885.



Bronze Medal,  
Prague 1884.



1889.

Special Cultivation

of

Viola tricolor maxima,  
Heart's-ease or Pansy (Pensee).

H. Wrede,  
Pansy Specialist,  
Lüneburg  
(Germany), near Hamburg.



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For many years I have cultivated this lovely flower which, on account of its endless variety and the charming shades of its colors, is generally prized as one of the most beautiful flowers and is a great favorite with many people.

By the most careful selection and treatment of those plants which are set aside for seed-bearing, every Variety is being constantly improved, and beautiful Novelties are produced every season.

The extraordinary perfection of my flowers is attested by the highest prizes which were awarded to me at all the great Exhibitions held at Hamburg, Berlin, Vienna, Paris, St. Petersburg, Antwerp, Bremen, Stuttgart, Cologne, Erford, Dresden, Leipsic, Prague, Stettin, Breslaw, Frankfort on the Main, Lubeck, Kiel, Cassel, Hannover, Lüneburg etc., so that since 1869 I have received 85 first prizes for the beauty of my Pansies, among these at Berlin 1885 the Royal Prussian State's Medal, at Hamburg 1886 a silver goblet, at Paris 1887 the Silver Medal, at Hamburg 1887 the Gold Medal and at Cologne 1888 the Gold Medal of his Majesty Emperor William I.

### Pansy Seeds.

Those marked with \* are adapted for carpet bedding and arabesques.

- |  |   |
|--|---|
| Brown with gold bronze.                              | Striped mixed.  |
| Black with gold bronze.                              | Bronze.   |
| Black with violet.                                   | Bronze with yellow centre.  |
| Dark Fine sorts.                                     | Velvet brown.   |
| *Dr. Faust, jetblack.                                | Havanna brown.  |
| Five-spotted on white ground.                        | Havanna brown with yellow centre.                                   |
| Five-spotted on yellow ground.                       | *Deep yellow.   |
| Five-spotted on red ground.                          | *Goldense, clear yellow.  |
| Five-spotted colored.                                | *Pale yellow.   |
| Five-spotted mixed.                                  | *Snow-white.  |
| Large-spotted on white ground.                       | *White.   |
| Large-spotted on yellow ground.                      | White spotted with violet.  |
| Large-spotted on red ground.                         | Silver-seam.  |
| *Large-spotted white.                                | Purple with yellow edge (fiery colored).                            |
| Large-spotted white with blue edge.                  | Purple with white edge.   |
| *Large-spotted yellow.                               | *Purple-mantle.   |
| Large-spotted yellow with blue edge.                 | Marbled, dark.  |
| Large-spotted mixed.                                 | Marbled, white ground (White edge).                                 |
| *Light blue.   | Marbled, yellow ground (Gold edge).                                 |
| *Emperor William, ultramarine blue.                  | Marbled colored.  |
| *Dark blue, favorite sort for bouquets and garlands. | Marbled mixed.  |
| *Blue black shaded.                                  | Gloriosa perfecta (Quadricolor), steelblue with red and white edge. |
| *Purple violet shaded (Lord Beaconsfield).           | Black with red and white edge.                                      |
| *Purple violet.                                      | Black with red and yellow edge.                                     |
| Rosa lilac.  | Little Red Riding-Hood.   |
| Striped on lilac ground.                             | Trimardeau, large-spotted Giant.                                    |
| Striped on bronze ground.                            | Cassier, three- and five-spotted Giant.                             |

Each sort separately: Per ounce (30 Grammes) . . . . . 30 M. = Doll. 7,50.  
 „ 10 Grammes . . . . . 10 „ = „ 2,50.  
 „ 1000 seeds . . . . . 2 „ = „ 0,50.  
 „ pkt. . . . . 50 „ = „ 0,12½.

An assortment of 40 Fine sorts of each 1 pkt. selected by myself 12 M. = Doll. 3,00  
 „ „ „ 30 „ „ „ „ 1 „ „ „ „ 9 „ = „ 2,25  
 „ „ „ 20 „ „ „ „ 1 „ „ „ „ 6 „ = „ 1,50  
 „ „ „ 10 „ „ „ „ 1 „ „ „ „ 3 „ = „ 0,75

### A mixture of all sorts of Sample flowers.

(Nearly all these produce only the finest flowers.)

Per pound = 16½ ounces (500 Grammes) . . . 240 Marks = Doll. 60,00.  
 „ ounce (30 Grammes) . . . . . 15 „ = „ 3,75.  
 „ 10 Grammes . . . . . 5 „ = „ 1,25.  
 „ 1000 seeds . . . . . 1 „ = „ 0,25.

### A mixture of Exhibition flowers.

(This seed is only taken from the most splendid flowers.)

Per 1000 seeds . . . . . 10 Marks = Doll. 2,50.  
 „ 100 „ . . . . . 1 „ = „ 0,25.

The prices are quoted in Dollars and cents or Marks and ¢. (1 Dollar = 4 Mark, 1 Mark = 100 ¢.)

Amateurs of Pansies are kindly invited to visit my establishment and inspect the cultivation of these plants.

**Lily of the Valley**, Novemb. and Decemb. delivery,

1000 strong Pips incl. Emb. 6¼ Doll. = 27 Marks.

Ordres are only attended to on receipt of cash.

**Lüneburg** (Germany), 1889.

Heinrich Wrede.



**German Pansies.**  
**H. Wrede, Lüneburg (Germany),**  
**near Hamburg.**



NOISETTIA A

ANCIPIEA 3

signature & January 2

SCHWIRGEE

CORYNOSTYL

the shape of eyes

AMPHIRREX

ALSCODEIA 22

Passauca, Mult, 1

A1 (Cochlearia)

TETRATHYLA

PENTALCEA 1c

HYMENANTHERA

NECKIA 1c

NECKIA 1c

LEGUMIA 1c

PAPEYROLA 1c

VIOLA. Redou

V. canina that is

V. ovata sd to b

V. hirsuta, HALL

V. tricolor, bous

china ditto Bur; set

Rhind 589, 7

V. adonata, pet

Aqueous tincture of fl

Romans had a wine;

Some think the fls are

merits a case in wh

V. pedunculata

where com round the

678 counties, 2, 187

Pansies

They are in his hands on his barren base Pansies and Golden-rod,  
And faced him, peeping softly, & left him alone with God.  
They made him a grave in the garden where the Pansies bud; Men  
And the Pansies when she sees them that they are her baby's eyes,  
Smiling in winsome beauty out of her Paradise.

B. E. Rexford

Color of the Pansy Stripes

- 1 Epid color of depth possible
  - 4 below (still redder)
  - 2 Und up Epid is a layer of compact cells
  - 3 in this last are striations of small cells w/ empty intercell spaces
  - 4 in color of the air in spaces
  - 2 in air in spaces
  - 3 in air in spaces
- Where chr is violet, due to 1  
 yellow 1 w/ 0 soft  
 or shades 1 w/ varied soft
- (Can may be also any chr in diff parts of fls)
- whit 3 from, retrachs  
 flt 3 if air segd out
- Whit, pale yellow, red not com ple colors

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NUSETIA A

ANCHUSA S

SCHWIBIGGE

CORYNOSTYL

the singular spiro

AMPHIBROX

ALSCOEIA 21

Passauka, Nutt, 1

A. (Candace)

TETRAHYLLA

PENTALOGA L.

HYMENANTERA

NECKIA, Nutt,

MACRODUS

LEGNIA R. I.

PANAYOLA

VIOLA. Redd

V. canina that a:

V. ovata ad col

V. hirsuta, HARR

V. tricolor; bous

glauca divaric; set

Rhind 5897

V. odorata, pet

Equicus vicinus of l

Romers had a wine

Some take the do an

ments a case in wh

V. pedunculata

where com most to

from Canada, 2 up

From Irene E. Jerome's "A Bunch of Violets"

Look at us, said the violets,

All last winter we slept in seeming death, as you  
dead are sleeping now, but at the right time God  
awakened us, and here we are to comfort you.  
E. P. Roe

Once more full foliage crowns the Spring, & by her magic spell  
The shadows dark are chased away which o'er my spirit fell,  
I hear her low voice as she lulls the VIOLETS on her breast,  
Or comb the PINE-trees flowing hair upon the hill-top crest;  
I know her haunts in glade & glen, for when her footsteps pass  
Springs up in Eden loveliness, the radiance of the grass.  
Each tree she kindles by her touch bursts into leafy flames  
And the desert-burning bush, God's presence there proclaims.

Hark! upon the east-wind piping, ceasing  
Comes a voice all clamorous with despair;  
It is April, crying, sure and weeping  
On the chilly earth as burrs and bane.

"When I went away, she murmurs sighing,  
All my VIOLET buds were stained with blue;  
Who? O who has been so basely rubbing  
Blown and dead from the fragrant crew?"

Thus she plaineth. Then ten millions voices  
Ting, insinuous like the drops of rain,  
Raised in song as when the wind rejoices,  
Ring the answer, "We are here again!"

"We were hiding, April; did you miss us?  
None of us were really gone away.  
Stow thy pretty head and gently kiss us  
Once before we all come out to play."

Little points of green push out to greet her,  
Little croppers grasp her garments bare;  
Hidden sweetnesses grow even sweeter,  
As she bends and brightly smiles at them.

Every tear is answered by a blossom,  
Every sigh with songs and laughter blent,  
Apple-blans upon the beeches tuss-thous,  
April leaves her own and is content.

Susana Corbridge

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NOLSETTIA K  
 ANCHITEA &  
 SCHWEIGER  
 CORYNOSTYL  
 the shaglike spurs  
 AMPHIRRHEX  
 ALSODEIA TU  
 Passerina, Nutt, 1  
 A. (C. com. 1800)  
 TETRATHELA  
 PENTALGEA L.  
 HYMENANTHERA  
 NECKIA, 1810  
 MELICHTHUS  
 LEGNIA R. T.  
 PASYPHYLLA  
 VIOLA A. Reclus  
 V. canina that a  
 V. ovata ad 101  
 V. hirsuta, HALL  
 V. tricolor, but  
 plain, distinct; see  
 Rhind 5897  
 V. odorata, per  
 Aqueous mixture of  
 Remon had a wine  
 Some think the dog  
 merris a case in wt  
 V. pedunculata  
 whose roots were  
 from various, & up

The violet pleases thro' the golden sunbeams,  
 And whisp'ring, Chase birds for our sake  
 In the beautiful spring of the year,  
 O wanderers of God! O Bounteous & Good!  
 We feel that thy presence is here,  
 That thy audible voice is abroad in this world,  
 In the beautiful spring of the year,  
 And we know that our Father is here,

*Jan D. Fields*  
 Violets, violets, sweet April violets,  
 Sure as the Spring comes, thou'lt come too  
 First the white & then the blue - Pretty Violets,  
 White, with just a pinky dye;  
 Blue as little baby's eyes - So like Violets  
 Sprouting up among the grass,  
 Saying, "Pluck me," as we pass, - Scented violets.  
*Dinah Mulock Craigie*

It seems a consecrated thing,  
 This early blossom of the spring;  
 A grace of soul within it lives,  
 A charm too deep to understand,

*Severe E. Torrance*  
 Take of my violets! I found them where  
 The liquid south-spring flows, in a field  
 That bordered a summer-water. There's to be  
 A faintness about these early flowers,  
 That touches me like poetry. They bloom  
 With such a simple loveliness among  
 The common herbs of pasture & breathe out  
 Their lives so unobtrusively, like hearts  
 Whose beatings are forgotten for this world,

*M.P. Willis*  
 I have found violets, April birds come on;  
 And the cool winds feel softer & the sun  
 Falls in the beaded drops of summer-tine;  
 You may hear birds at morn'ing and at eve,  
 And from the hills  
 A murmur like the harseness of the sea  
 Tells the release of waters, and the earth  
 Sends up a pleasant smell, and the dry leaves  
 Are lifted by the grass: and so I know  
 That Nature with her delicate ear, hath heard  
 The droppings of the velvet foot of Spring;

*M.P. Willis*

Leaf-hidden violets! fragrant young violets!  
 Meadows and brooks have been long since for you!  
 Thro' Winter's darkness, sweet-hearted violets,  
 Have you been dreaming of heaven's own blue?  
 Is April still, more sheenish than tender?  
 Still you smile on your violet roof,  
 Roses are waiting June's passing and splendour  
 But you are like true-love this odd rainy day,  
*P.B. Callaway*

I found a shy little violet root  
 Half hid in the woods, on a day in Spring;  
 And a bird flew over and looked at it too  
 And for joy as he looked, began to sing  
*Lucas E. Torrance*

The sky was the tenderest blue above,  
 And the flowers like a bit of the sky above below,  
 And between them the wonderful words of God  
 On heavenly excursions went to and fro,  
 Away from the Summer, and out of the south  
 The bird had followed an instinct true  
 As out from the brown and desolate sod  
 Stepped the shy blossom with eyes of blue,  
 And he sang to him in the young Spring day  
 Of all the joy of the world above,  
 And how beauty and fragrance surrounded him,  
 While the Spring and he beat over him,  
*Louise Chandler Andrews*

What will the violets be,  
 These in the Spring of Springs?  
 What will the bird-sing be  
 Where the very tree-trunk sings?  
 What will the Easter be,  
 Where never one dead to mourn;  
 And brightly the faces ask  
 O when will they all be born?  
 Brighter the Easter shines  
 On the faces here below  
 That no dove ever see behind the flowers  
 Shut in the living glow,  
 They know the secret now  
 And by and by shall we,  
 If in the Spring of springs  
 The violets come to be!  
*G.*

PASSIFLORACEAE; caespit by Juss. 1795; 12 p, 210 sp. -climbers; lvs alt; sepals filicose.  
3g Ps 3g, 5-merous, rarely 4, C<sub>1</sub> styles 3 rudex +; 3 pericarp placenta. Fruit stalked, baccate. Seeds in  
sol rows on placenta, in a brittle sculptured testa surrd by pulp, oil. Cotyledons 2, leafy.

See on revolutum of petals, disc by Ly, p. 332-3.

The print of Salm 1701, robt the woods we hid to the eg, wch climb abt to tree to tree, keep at one  
time. As of the nit stock beauty & of using, appe that the zoologists who disc them, adopted Chrn  
trains to those marks of the 2 Am wilds, & at dr to fruit, & temp to the eye & refresh to  
the palate. One or 2 extd N in Am, but in Afr, near is; a few in EB."

From estate; Prof's draise adv rather dangerous. Rhind 376-6

*Passiflora* Benth. Products of Madagascar; shrub; has eaten fruit.  
*bluevula* ocellata; Wl climber; st to be antihelmintic, diaphoretic & antispasmodic  
*Smeathmannia* sp.

*Deidamia*, Thunb

*Dysommia*, DC

*Tecomia*, Juss (*Distephana*, Juss, *Distephia*, Walp.) 3 of hv baccate.

*Crossostemma*, Planch.

*Passiflora*, Juss. (*Granadilla*, Tournef., *Cieca*, Malik, *Stephananthes*, Burj, *Monacincirma*, Boy, *Anthachinia* Turp.)

*P. quadrangularis*; for the spec GRANADILLA swats sea in one hot hill; root astringent; p. fully narcotic for fresh  
eaten in sol F settings; active, ed to be due to sea. a pearl price. *Passiflora*, Rhind 605

*P. rubra*, tincture of Ars, used by Indian in wine or spirits, and in of DUTCHMAN'S LAUDANUM, is used in  
Jamaica as a safe narcotic.

*P. lutea*, 29 fls hv impet edl fruits; see uses of exl. on Ly p. 333.

*P. ocellata*, Cavanella Rhind 611  
*P. malincolana*, Swartz Rhind 602

## CRUCIFERS

Caesit by Jussieu 1789. Lily calls them *Brassicaceae*: pls them wavy *Cruciferae*, next after *Umbellae*  
Herbs, lvs alt, Anz yel or vch, self purple; racemid; wch boasts. 32 fls 3+4+2 BC<sub>2</sub>  
Fruit a silique or silicle, 2, called by false *gavicina*, wch *rossaria* often others fall away. St. Petalops

Relationship to Papaveraceae; by the silique genera *Glaucium*, *Obelidium* Seed structure diff.  
" " *Eussiac*, " " " " "  
" " *Lily* put it in *Cistaceae*, alliance of *Cistaceae*, *C. Resedaceae*, *Cappadocaceae*.

Import; its eating the genus *Sisymbrium*, Mustard, Cabbage, Turnip, Cauliflower, Beets, Kale, Broccoli,  
and many fice of common culta

Roa, p. 173, sp 1600 *Platystrophia* Rhind 612

Distrib: "eminently Eur": 166 in N. w. of Eur; 178 on the N shore or isles of Med; 25 pedes  
to Afr coast; 184 to Syria, AM, Thracia, Persia; 55 to *Buraria* Siberia; 90 to Cadix, 48 to N. Am  
41 to S. Am; 100 in *Lily* p. 353. About 800 pedes to N, 100 to S. Benoi; DC, 1821; N. Am. usual  
in ex. since.

Peeps, antiscorbatic, stimulant, w acid flavre. Cha + nitrogen, to wch due prob the ani-  
mal odor when rotting.

MATTHIOLA R. Br. (*Leucopium*, Mönch, *Leucaria*, DC, *Pinnaria*, DC, DC) STORCK  
Rhind 589

PARLINA, Webb, fruit figured by p 352.

CELEBRANTHUS R. Br. WALLFLOWER  
Rhind 590

also *Jacobaea*, The Wallflower of the Plains of Rome, in *Versell*

O Golden-crowned, on fused at crumpled pate

And fallen wall of empowers and kings,

Whose very names are now forgotten things,

Thus standeth here, in faithfulness to wait

The centuries these, & of the ancient state

Keep up the semblance. Never forgets rings

Beings the stones; & yet, it own but things

On walled ones, thy hands have fls, & sent

Along the fry & entering best element,

And flung out yellow banners, prided in red,

Which need not shame a royal house or spread

At golden ring, the while it by deep spell

I cannot fathom & thou wilt not tell,

Rome, Italy, May 7, 1760.



IGDANTHUS T. & G.

NASTURTIUM ABE (Cascadianum, Mönch; Cassell-Gasellian Fl. Wettze; etc)  
N. officinale. WATER-CRESS Rhind 205

BARBAREA ABE

B. vulgaris, Winter Cress (Rhind 300) bitter & subaromatic, whole plant so; used as a vegetable salad in Eng.  
well for. parcel these, com in shady moist pla. Not like ABE in Eng. Double root, len as *Pellaea nodosa*.  
B. prostrata, American Cress (Rhind 300) called also French Cress; taste of B. annually for 2 weeks, no more ill persons.

ARABIS L (Cascadiana, Mönch, CAMM)

A. Chinensis *Arabis* seeds preserved by had. des as stomachic, gently stimulant; impudent use they th. h. p. on abortion.

CARDAMINE L

C. pratensis, CUCUMBER-FLOWER; dried ABE has been a popular remedy for epilepsy in ch. It is to be stimulant, diaphoretic, diuretic. In the Cuckoo-Pod of Silesia it is not so yellow but white bud; not his Cuckoo-Flower; but, not giving any color; his, says Ellis in the Surveyor; but the name is more in Eng. also goes to this ABE. Called LADY-SMUCK, PINK, SINK, BOG-SINK, MARVELOUS, & in Northville, CANNERSBURG BELLS.

SH. 44, 3  
Ellis 162  
The housewife said the pink has more its waxy berries,  
And by the meadow reaches blew the fair sweet cucumber flowers;  
And the wild mountain-gold shines like fire in orange bellows gray.

DEMENTARIA *Boissieria* var.; press and had applied it to 1 of *Artemisia*, whose the scales of the root are teeth.

1 D. bulbifera, CORAL-ROOT of the woods of our Sea of Eng. *Colopha* the quaint old herb; it is used as a good colic remedy. It is known to try all kind of fluxes & hemorrhages; helps to consolidate wounds & fistulas; cure the root? *Salmi*, 1-2, & *Rubi* "they see deduce to the cure of wounds".

2 D. laevigata, *Stubi*, BOTTLE-CORSE; Medical sect. type & propagated because it would be so delicate, 1800, but does it use as *D. caucasicana*. *Nimble* abides "has been for 140 not Latin-eyes" divers seed freely; depends mostly on roots for purgative. Across north N, & thro' most of Atl. U.S.

3 D. monticola

4 D. maxillata

5 D. heterophylla; these I lost

as visited Nov. 2, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 1843. I lost "undoubtedly was to go in this locality" *Colopha*, not for 1 year! *Salmi* remarks this C. is, instead of *caucasicana* in of *P.* *Remont* of Eng.

LUNARIA L, HONEY-CUP

ALYSIMUM, L

PRABA L

COCHLEARIA L (Amaracida, Rupp. *Raphanis*, Mönch.) SCROF-GRASS

C. officinalis, once la. get veg. as antiscorbutic; stimulant & diuretic if eaten fresh; in ext. when dried.  
Rhind 300, 53R  
C. prostrata, HONOR RADDY, Rhind 300 DC, 33-36

THLASPI Allen.

CAPSELLA Vent. (Bursa, Gussl.)

IBERIA L. CANDY-TURT

ANASTATA, Gärtz. (Hierocentis, Adans). ROSE OF JERICO, A. heterochustina, wild, void in E.g. deserts; full grown, contracts its rigid leaves into a ball, caught & killed by wind; relaxed & flattened on exposure to moisture. Superstitions tales told of it; ed. or by lot blessed on Christmas eve; saluted the night of the Reformation; paid homage to his Reine, till Eukter by means of cold. Fig. 14, p. 353.

CARLE Brunst SEA-KALE; herbicidal & whole food

MALACOLMIA RBr

HESPERIS L. (Hesperidium, DC)

SISYMBRIUM L. (Sophia, Wall, Alliaris, Adans)

ERYTHRUM L.

SYRENIA Andra.

CAMELINA Gussl. C. sativa, OIL OF CAMELINA; an oil plant; its called to be too acid for cattle; brassica see ind. & the dry scales

LONOPIDUM, Nees.

IBERIDEA, Boiss.

LEPIDUM, RBr. (Carduus, DC)

L. sativum, Garden Cress Rhind 299 DC 88

ISATIS L. I. tinctoria, WOOD, formerly a fav. blue dye in the co. Rhind 4506

SINAIENDRON Loez.

BRASSICA L. (B, Turnep, Rapo, Turnet, Napus, Turnet)

Cabbage, Brassica oleracea  
Ellac 34 Sibler, MWL, Rhind 295 DC 83

Turnip, Brassica rapa  
Ellac 236 Sibler, MWL, Rhind 292-3-4 DC 86-88

Caulliflower, Brassica oleracea botrytis  
Rhind 298

Broccoli, Brassica oleracea botrytis broccoli  
Rhind 298

Brussels sprouts Brassica oleracea subaurata var.  
Rhind 296

Savoy, Brassica oleracea subaurata  
Rhind 295

Kale, Brassica oleracea sabellia, or Broccolo,  
Rhind 297

Rape, Brassica rapus  
Rhind 299

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*VERBENA* *SEMI*. *cuneata* by Just, 1806, but by him as *Viridis*, 1789. 2+5, sp 663. 3y 2y, 8y C 2 or 3

Dirig. fr. Labiatae, esp by nutlets connected into one, bearing terminal style; by usual abs of corolla, leaf lab, closely esp in didymota, -opsis lvs, the invag.

Replaces lat. in tropics, these com. s in temp. Amer; bearing shrubs or even gigantic timber; herba in colder latitudes; rare in N Am, N Ind, Eur.

Frags as labi. but less, of the impet. medicinal or economical.

*Callicarpa* L. (*Perlythra* Lour, *Sphondylorocum*, *Alex*, *Burchardia*, *Dalman*, *Johnsonia* Cass.)

*C. laevata* bark suberosa, lvs like rose, obscured by Clusianae when no betel lvs; Malaya

Tabl. in *diacaria*

*Stoechtophylla* *visita* (*Melastanthus*, *Phid*) *S. javanica* is the frag. solely attrib. to this.

25 did. Due to Verbein, lvs snits adultr. Chin. Tea; s are sold in American dunnos and in BRAZILIAN TEA.

Exposed juice of lvs is pm in Doctoria as a cell. purgative to ch. dose 1-2 tablespfuls. In FRUIT used in decoctn for dysentery & as anthelmintic. It has an <sup>pellucid</sup> ~~pellucid~~ <sup>pellucid</sup> for promoting the menstrual discharge. In Ind. its fresh lvs are applied to ulcers; it is then called *URGERAO* or *JARRAO*.

*Lantana* L. (*Chamaecrista* *Asiatica*, *Commerson*, *Plum*) Sol by the aromatic lvs & frs used in engh, Ind, China.

*L. pseudo-thea* highly esteemed in Ind in infusion, as tea; Stillaire ed it by apth; aromatic; com. ch. Ind.

*CAITAO* & *MATTO*, or *CHIA DE PEDESTAS*. *Tabl* in bear deapacens s & s, eaten.

*Lippia* L. (*Platonia*, *Hot*, *Meycia*, *Deeg*, *Diprococlyx*, *Cham*)

*L. citrata* aromatic, *Mexicus* esp. to *Spex* & *Phynse*

*Vitex* L. (*Fraxinella*, *Hot*, *L. Indica*, *Ind*, *Lo*)

*V. Taruma*, used in S. Ind as a *TARUMA* in *syphilis*

*V. trifolia* beryory acid drupes, called in Ind. *Filfil* *Burcea* or *WILD PEPPER*; lvs a pell. diacetic.

*V. Negundo* " " " in Ind a diacetic of its aromatic lvs help from the veins, both of warm & cold delivery; mixed, see *apl* to *temple* for headache; pills stuffed with them are put into the head to remove

catarrh & headache attacks

*V. Apinus-Castus* L. has strong acid drupes. Seeds that at *Burcea* can be used as a *apl* ed. It powdered

at once over held in a *tabl* *apl* to the stomach.

*Verbena*, Rhind 551

*White* *Carteiras*

we to alter, under  
red in Ind for

**TEAK**, *Tectona grandis*, in *Verbena* *Indica*, or **INDIAN OAK**, not usu-  
ful tree of Ind, no timber eq. It for ship lvs; the ship woods in the west

& the texsite as lvs eq solid its strong & cold, close-pored wood, Wild. obs

varies of *Ind* Ind is native sly Malaya, in *Angora*, &c. Teak forests

are of 4000 ft, say with *Ind* does not pierces. *Coct* has apti. *Ind*

attract to match or it at last, since 1873 no lvs of *Ind* to be raised for seeds,

but as *apl* to *geow* as *Ind* oak, *Factoris*,  
Rhind 450

not coarse; dely  
to decid lvs, car to  
particles of oil, or  
in ship lvs it is per  
diacetic, lvs pro

*Muz*, *Dorrey*, *Spex*

*Indica*, *Indica*, *Indica*  
is of *Ind* *Indica*, *Indica*  
& *Indica* *Indica* *Indica*  
in *Indica* 1/4 or

raised close woods also  
in 1873, *Indica*  
with *Indica* *Indica* *Indica*

& then they bleed; *Indica*  
not here found. *Indica*  
take also to the *Indica*  
W. *Indica* *Indica* *Indica*  
varies 2 or 3 forms of it,  
since 1779. Sol lvs are  
*Indica*; *Indica* *Indica*  
2 *Indica*, 2 *Indica* eat by  
ed. But not as *Indica*  
as a beautiful, light

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SCROPHULARIACEAE, comest. by Juan 1852, p. 170, fig. 1714; dist. fr. lab. by 4-celled ovary, red-stem;

See in hb. exsicc.  
Dante's, 1844 in all parts, for minute of the plant, 1 leafy bud or Meled Id.; no fruit; com. in Ruych/Bay, Ind, Amstel,  
Siam; possess the Meled Id. of D. del Puzos.

- Figos acida, bitterish, suspected.
- Mixed by Peruvia, three Scrophularia from ex. Schanzer; Celsia x Vocheverson being crossed off ticks?
- Mixed ex. Oculocaulon, by 1846; com. in all the ex. being parrotical, x com. Buchnera hyperborealis, which is less.
- " " Leguminosae by 1846; Mitocaulon x 1846
- " " Leguminosae - Calli, 2 for sale, but less central flowers)
- " " Leguminosae - Calli, 2 for sale, but less central flowers)
- " " Pediclaris - Calli, 2 for sale, but less central flowers)
- " " Cucurbitaceae - Calli, 2 for sale, but less central flowers)
- " " Cucurbitaceae - Calli, 2 for sale, but less central flowers)

Many for regions, slightly indist. plates, (I guess the back) to some of the; on smaller exsicc. they sit apart & even after several weeks; when touched they collapse suddenly & in some force.

Schwenkia L. has dense glands growing for edge of petaloid sepals, & are the oval ends, stems opp to them.

Scrophularia  
S. aquatica x pech 2 odora; two roots are purgative emetic

Calceolaria Bull. 800 sp. emetic x purgative; roots of C. radicans are highly oil in Chili and ex. of REILSON  
including modern other exsicc., Rhind 553

Digitalis L. D. purpurea, ochroleuca, laetifolia, leucophaea, for the emetic acid qual so intense as to be dangerous,  
Pondered for ex. the extract, produce vomiting, defect, vertigo, mer. saliv. x vom. In the pulse, & even cause death.  
Rhind 554

Veronica L. V. Tharsus x Uniform approach Digitalis in qual; seeds used by pedres to poison fish; for  
acid, bitterish; for of V. Tharsus roots used to K. India

Digitalis L. M. putidus, but eaten as salad (Vvedalia, Bn. Erythranthe, Spach)  
M. Jamesi, 2nd. April by Meunier & Rodier.  
M. muschatus, MUSH PLANT; genus M. but it is in Erythranthe, Erythranthe, Digitalis; Many tells of a Mimmulus? by the  
word in the field, sup. to be the seed with YES Rhind 554 or there.

Tecoma L. T. asiatica, juice of the flowers Maltier used a cure for gonorrhoea.  
Scoparia L. S. dalata, infusion used in Sp. Am by Indians to cure agues in Bayl' opt. hemorrhoids.

Euphorbia L. E. officinalis, slightly bitter & aromatic; Kranichfeld used it in case in external  
infusion of eye; it is useful in cough, hoarseness, earache & headache & external dist.

Melampyrum L. M. pratense. Considered to find it; L. 1848 been a yellowish bitter is not  
what it adds

Pedicularis L. P. acid; eaten by goats; only all Hachen in dying.

Fair in the king cup that  
in the meadow flows  
Fair in the daisy that  
beside her grows.

Gray

C. & Mass Dec 2

Francisco Mac F. exsiccata, MARIACA of Ecuador, a egg gon to the large part of the part of the lymphatic system  
Largely used in syphilis, hence called by Bocchi BURSICOMI BURTAL; see hb. all the bacteria get naturally changed as a  
purgative, emetic, cathartic, abortifacient, & sometimes an acid poison. P. & P. 6, the CHELLI JARDINER.

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MONADELPHUS PLANTS

**BETTERACEAE**, trees, shrubs, or w. stellate notched hairs, occ. in scabrous; dicy-6; Malv. by a suture  
 buds 7-angled; fr. Strobiliferous by antisept. twined inwards. Pandy to loss of petals, abscissa of stam., & elt  
 proctos of monadelphium. G. 95, sp 100.

*Theobroma* L. (Cacao *Benue*) T. Cacao, CACAO or CHOCOLATE tree; see Nkind 336 OC 30

*Waltheria* L. W. *Douglasia*, my maclepas; used thro' in Braz sp. epib.  
*Dombeya* Cav. D. *speciosa*, bk. used in crops in Madag; 84 Afr. ed.  
*Lasiosiphon* Smith, Austral.

**STERCULIACEAE** large trees or shrubs; § 34 sp 125; 2 called nutberr. turned outside; stam. column  
 typical or in various class. Chilly resemble fig + nuculeps.

*Adansonia* L. BAOBAB, see Lat dried, powdered, with Laly, fast art w. hb, wh they mix  
 w. the food, to dim the exor perspiration due to climate. Eur. find it serviceall in diarrh, fevers &  
 Rupt of full artery and spleen, exting the juice pressed fr. it w. sugar, into a dr. valued as a specific in  
 pueril & psittacal fevers. Dried pulp mixed w. water is used in G. in dysentery; Chilly epd of gum ill  
 cum Senegal 2 sp. gummy matter, & starch, an acid, wh apprt to be molli.

*Bombax* L. CEIBA; notable sp for noble aspect rather than utility; seeds of + are invested in true cotton  
 but cannot be manuf'd fr. the being so adhered to it. Am. sp. hr. emetic bark.

B. pentandrum, COPPER-TREE of India, yields a gum, gum w. spices in certain bavel compts

*Salmalia* DC; bark emetic; honey of Afr of S, malariae sd to be fungate & diuretic.  
*Durio* Rumph. DURIAN, see. Pd in ls of Ind. Frigid; thr. eximly cultd.

*Occhonia* Humb. O. *lanceata*, tree in W. Ind +; fr. red used in case of colic; bark is antispas; wood spling  
 of the fruit used fr. the fruit of cold, & dysp + pain.  
*Chocoma* HBK. C. *speciosa*, ARVORE DE PANNA, usually eat of seeds is used in diff. cas. to shaft cuticular.

*Eriodendron*, DC (Campylanthus, Schott, Eriose, DC, Cassimpinus, Rumph) wolly cat stuffy?  
*Eriotheca*, L. E. *Reveria*, G. Neesia, Blum, *Mitracarpus*, M. S. *Asterocaulis*, Kl. (Blepharanthemum)  
*Cheiranthemum* Humb. (Cheiranthemum L. var.) fr. C. *platynodes* A. Alex. HAND-PLANT or MANITA,  
 not petals large angular calyx, res a leather cup, fr. centre of wh rises up a column by 5 nar curved anths  
 w a curved style in mid; consid. res to a hand w lg claws.

*Helicteres* L. H. *Saccolha*, SACCOLHA of Braz, decorn of root used apt syphi maclepas.  
*Mycodiscus* Humb. *Mycodiscus* sd to hv simipon.

*Sterculia*, L; many uses of + sp. H. § 361-2; 3 eaten nuts.

- 2. *Trigonantha*, prod. Gum Tr. of Senegome,
- 3. *mens* " " of Comand.
- 2. *tormentosa* DC, KOLA of Afr, seeds shaved or scalded, tender flavo of water brewed half parts, qth.

Moderate

*Theobroma* L. the CACAO or CHOCOLATE TR, of Malvaceae, under *Euphorbiaceae*. The food for gods; shows its extent of mode; hard to  
 dig; extracto culms of dicy, also that the plant her to it of buds song not  
 pleasy fruits of apt, & later on time in mags it has to DW; build also to 20 ft in  
 Bahia; in Afr As also, 80° high, w. large, dcy, ped, Afr-pole red, on stems &  
 longer tree even to roots; ~~the~~ says Humboldt, "At I finger the dy in a  
 on use by the lux of two plates or let soft a C plates, Afr a dange w. the  
 large thorns of the T issue to the root at a cross distance to the trunk, &  
 among to the deep bk. mind, A somewhat example of the expansion of  
 life. Can be dig. be met in la. exp. nat." Fruits are large, red, & dcy  
 5-6" lg, ca. in 5 cells, 20-40 beas. The said to seed, only sowed be  
 wind can't bear sowing any other of 1 banana, maize, manioc &  
 de bed. wd please some betw the roots, and wks shade they enjoy the  
 dange w. they heat they req; reqs a rosewater like those coffee & sugar.  
 2 y. sht song it is 3° high, seeds cut w. song; only 3-4 latty lot sets on the  
 3d y; is full song by 6-7th, + till +20 y. An Ind. who can get a few thou  
 cacao trees ~~planted~~ can pass an idle life; need the trees 2-3 + a y, for the schoolers, live in  
 & dig the seeds in the sun. Chilly used in form of Chocolate; beas are  
 raised, fine fed, into a past. made to paste, flavo improved by add. spice as vanilla.

nuculeps; stam.

pro. vllate flax,

2. Arctic.

of the fig; eye the  
 at fr. dcy; have not

dich. the chaly, quieting  
 the rumbling foods and

the schoolers, live in

raised, fine fed, into a past.

NI are called Ceumbo

nucleps to

ing cold coughs.

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*BYZANTERIA*  
beils & called for Sax  
prodr of monardella  
Placobrossa L C

Waltheria L  
Dioscorea Cav. 7  
Lasiodora Kun

*STERCULIA*  
Tropical or in warm

*Adansonia* L,  
w. the food, to dim  
Pulp of fruit soft;  
pith is medicinal;  
Linn Senegal 2-8 up

*Bombax* L, CE  
but cannot be man  
B. pentand

*Salmalia* SA,  
Ducig Rumpff  
Dichroa Sims  
of the fruit used  
Chacris HBK

*Eriodendron*,  
*Eriotheca*, L  
*Chrysanthemum*  
notably large any  
w a curved style in

*Helicteres* L,  
*Dryodistichum*  
*Sterculia*, L  
S. Prunifera  
S. urons  
S. tomentosa

*MALVACEAE*; crast. duss. 1789; 33 p, 1600 pp: herbs, trees, shrubs; + in cruciferae; stam.  
columnar; 1 called anthers turned inward; no unwholesome qual.

Malee is a link to Hamone, in larg sep covered over a central vein, Mufus prop allate for,  
V9 + in tang; dimg B; in Sic for of fig pits, in Eur 1/45, in Swe 1/233, in Lapl. O.

Humboldt computed in Am they are 1/50 of the fig pits of any 1/200 of any, 0 in Arctic.

*Malva* L *MALLOWS* x *MARSHMALLOWS*; the use in Eur is vulgar; vol pit of the fig esp the  
wet pits in decoct a plentiful, taste, color usually salutary for fortific; demulcent for dry, favor and  
w fig also use it exactly in pedicels, legumes, etc, and n of *QUILMAUVS*.

*M. coccinea*, bktd by Caranilles to be fit to man, into wine.

*M. alcea*; petals are astrigae.

*M. sylvestris*, *hibida*, *crispata* by *Sims* III

*M. muralis* L; folk eat & prefer the unripe fruit, prob mo in play than bec stopic; relish, *Stechen*, quieting  
Then sitting in open school room see Upon the threshold of the door, Pity & smiles, sport to please, the crumpled seeds not  
called a cheese?

*Althoea*, L. (*Althoea*)

*Aroseea*, *HOLLIBOCK*, malary of Dioscorides, also official in Eur for use of Marshmallows, live into  
a blue coloring of egl to image

*Sida* L (*Molinda*, *Medic*)

*S. cordifolia* mad w rice to used to allev, bloody flux.

*S. insularis* Hinder does not exist here to fit.

*S. micrantha* It stork stems used to make violet sticks

*S. obtusa* sd to be culd in China for hemp

*S. lanceolata* root v. bitter, that a sp. emetic.

*Abelmoschus* Δ

*A. moschatus*, mostly seeds that cordial & stomachic; by drinks mixed w coffee, in W are called Quambo  
musqui; reduced to powder steeped in wine that protect them for evil bites

*A. esculentus*, fit old Oclabo, Garumbo, Kibbo, Bandidai, etc, favor in wine, sig for mucousness to fit.

*Sphaeralcea* *seffia*

*S. ciliata* *platina* used in Braz; a decoct, for indur of brook; & for Malaria.

*S. carolinensis*; chewed w in Braz applied to wasp stings

*Boronia* Cav & *dumicola* in Braz a diuretic (emollient?)

*Trena* L. *Urtica*; decoct of root, stem in Braz for windy colic; also expectorant for dry cold coughs.













*Laetia* *Tanacet* 1 var  
*L. acutangula*, DC 27

*Bryonia*, L, *ELIOTTE*  
See also, p. used as *Bryonia*  
*B. americana*  
*B. sibirica*, L  
*B. exiguua*, Vahl

*Botanura* *ICMIS*, DC  
note of *Wittor* *Bur*; po  
*forp*, see by, p 314.

*Monarda* L. 1 *var*  
*M. cylindrica*, L., T.

*Telfairia* *var* *T. p.*  
apart! *Asm*; pressed,  
When only applied to the  
*Sechium edule*, L

*Zinnia* L. 2  
Crushed lvs. are white

*Bonania* *var*, L  
*Sicyos*, L. (Sicyos)  
*S. angulatus* L. 1 &  
20<sup>th</sup> of July at *Woban*  
*Leclimocystis* *var*

*Peltocanthus* *var*  
*Sechium edule*,

*Iponoa*

*Mrs Jackson's "Maccing-pley" in "Dances,"* (the verse;  
"Whodas interlocoment!  
Holding fast to threads by green & silley tings.  
With the damo, it spreads its white & purple wings,  
Cascous in its flens, & the tacing while it sings,  
Sturdy maccing-pley.

or (bouda), no acid  
S<sub>2</sub> Fe<sub>2</sub> Se + S<sub>2</sub> O<sub>2</sub> + O<sub>2</sub>  
In. Man.  
see; not used as



*Luffa* *Truncata* L.

*Bryonia* L. 311

See also p. 101 as *B.*

*B. cretica* L.

*B. cretica* L.

*B. cretica* L.

*Bobalina* *scabra* L.

near of *Bobalina* *scabra* L.

for p. 101, p. 314.

*Monarda* L. 1

*Monarda* L. 1

*Telfairia* *ovata* L.

apart from *ovata* L.

When only applied to *Bobalina* *scabra* L.

*Zinnia* L.

Bobalina *scabra* L.

*Bryonia* *cretica* L.

*Bryonia* *cretica* L.

*Bryonia* *cretica* L.

*Bryonia* *cretica* L.

*Bryonia* *cretica* L.

*Bryonia* *cretica* L.

*Bryonia* *cretica* L.

*Bryonia* *cretica* L.

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*Bryonia* *cretica* L.

*Bryonia* *cretica* L.

*Bryonia* *cretica* L.

*Bryonia* *cretica* L.

**BEGONIACEAE**

stems, distinct or in a solid column; leaves not succulent, glaucous; no acid juice; alt. cordate-oblique-based-lvs; large sessile stigmas; pink-fls; dioecious; *Sig. Fig. St. + 2, 3, 4, 5*  
*Placostema* *scabra* L. 319  
*Cera* *la* *VI*, *Saba*, *El*; none on cut. *del.*; vol in *Madag.*, *Fr.*, *South*, *1*; vol. *chilensis*. In *flor.*  
*2-3*, *153* *eg.* *Fr.* *Egyptus* *la* *VI*, *Saba*, *El*. *Diplocladus* *Hy.*  
*Prosp.*; roots astringent, bitter; vol. mod. thick; some drastic purgative in *Madag.*; vol. used as pot-herbs.

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Polibotanic  
Beckium.edu





SCITAMINEÆ, BANANA ERM, = Animal Alliance of Lij.

Scitamina of L., 1751; coarctated here as = Musa coar of Lij, p 166, Musa of Schreb, p 23.  
 Musaceae see also in divergent veins; stems or only for sheathing of base, forming a spirally  
 twisted stem; blade rigid to paper texture by a red tissue; fine parallel veins eight, set at angle  
 to side of margin. Fls in spathe, S<sub>3</sub> P<sub>3</sub> St<sub>6</sub> C<sub>9</sub>. Frt 3 celled locules, capsule or  
 succulent & indurated.

Natives of C.G.H, Is of the SE coast; tropic plus; not much bred except in Java; 4, 8, 20 lbs  
 Valuable & imp<sup>t</sup> as food for the brute.

Jars of gigantic size used to brack load coffer, for a mat cloth for each a trawle way  
 eat his food, for basket milk, for yields a oval flax for cohesion of finest muscles of head.

Stems formed of the leaflets which are arranged like the vast net of sylvia lvs, each may be  
 pulled out by itself; or to be called in W L a sold as a thread. No of threads in each  
 variety of each species varies from 9 to 22" Lij.

It shows that a delicate vegetable.

MUSA Rausch. Juice of frt & lymph of stem are stly antiscorbutic & diaphoretic,  
 Musa sapientum BANANA Rhind 260-1 VC 304

Musa paradisiaca PLANTAIN Rhind 260 ec 304

Wood texture, MANILLA IRON

RAVENALIA Adams, (Uraria Schreb) TRAVELLERS TREE.

The BANANAS of Colombia.

To the Editor of THE EVENING STAR.

In your issue of the 27th ultimo I read with  
 pleasure an extract from "Good Housekeeping"  
 relating to the bananas produced in Colombia, S.A.,  
 my native country. As the extract did not give  
 any details of the natural development of that  
 desirable fruit I take pleasure in sending the fol-  
 lowing particulars for the information of the  
 readers of your paper: In Colombia will be  
 found about sixteen kinds of platano (the name  
 generally given to this product). The common  
 platano grows from 1 foot to 16 inches long,  
 and is an indigenous plant. The dominico never  
 grows more than 10 inches. It is a very fine pla-  
 tano, and its name is derived from its native place,  
 Dominica. The marfil, the smallest of the three  
 varieties of the common platano, is the one well  
 known here as the red banana. The common gu-  
 neo is also an indigenous fruit, and grows as large  
 in full size, is only 6 inches, and the  
 smallest one is the apple guneo, and the  
 name of this fruit suggests its taste, which  
 is like that of an American apple. It is  
 supposed to have originated in Guinea. The English banana  
 is the one ordinarily used in this country. It is  
 so called because it originated in England's do-  
 main. The French guneo is small and red and is  
 a native of Martinica. All these guneos are of a  
 green color first, and become gradually yellow as  
 they ripen. The common platano and the domini-  
 co are alike in all respects except in size and  
 thickness, and both are of universal use among the  
 Spanish-speaking people. When they are green or  
 yellow the people of Colombia roast, boil, or fry  
 them. They supply the place of bread and vege-  
 tables. They are used in soup and mixed with  
 milk and eggs, and made into fritters. When green  
 they are cut into four slices and dry them  
 for weeks in the open sun. When dry they are made into frit-  
 tures, which are ordinarily used to make gruels and  
 fruits usually. In that condition they are served as  
 with the skin, and when done a mush is made of  
 them and eaten in milk. They are also preserved  
 with sugar and served as desserts. When thor-  
 oughly ripened and at the point of being spoiled  
 they are passed through hot water and placed in  
 the open air for two or three weeks. There they  
 become nicely preserved and ready for use on the  
 dinner table. Words fail me to praise worthily a  
 product that actually constitutes the staple food  
 of many millions of people in South America. The  
 best authors of these countries have written many  
 beautiful poems on the merits and usefulness of  
 the platano alone. Oh, how gladly I would change  
 my bread here for that leaved platano of my  
 country, the republic of Colombia.

M. M. DE MEZA.

Ravenalia is a genus of the family Ebenaceae, called by the Br ARBRE DU VOYAGEUR; seed of  
 the plant yields an essential oil. Juice of frt used in dyeing.

Bellecozia Swartz. Fls pentandrous, 4 wing. Seed w tub of lg

(Linn) Only genus w solitary seed.  
 eatable  
 HAI, "  
 4 by 1 1/2

**ZINGIBERACEAE**, consist as Canase by Juss, 1788, in part; Scitamiaceae RB, 1810.  
 Sp. 13, 5, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100, 101, 102, 103, 104, 105, 106, 107, 108, 109, 110, 111, 112, 113, 114, 115, 116, 117, 118, 119, 120, 121, 122, 123, 124, 125, 126, 127, 128, 129, 130, 131, 132, 133, 134, 135, 136, 137, 138, 139, 140, 141, 142, 143, 144, 145, 146, 147, 148, 149, 150, 151, 152, 153, 154, 155, 156, 157, 158, 159, 160, 161, 162, 163, 164, 165, 166, 167, 168, 169, 170, 171, 172, 173, 174, 175, 176, 177, 178, 179, 180, 181, 182, 183, 184, 185, 186, 187, 188, 189, 190, 191, 192, 193, 194, 195, 196, 197, 198, 199, 200, 201, 202, 203, 204, 205, 206, 207, 208, 209, 210, 211, 212, 213, 214, 215, 216, 217, 218, 219, 220, 221, 222, 223, 224, 225, 226, 227, 228, 229, 230, 231, 232, 233, 234, 235, 236, 237, 238, 239, 240, 241, 242, 243, 244, 245, 246, 247, 248, 249, 250, 251, 252, 253, 254, 255, 256, 257, 258, 259, 260, 261, 262, 263, 264, 265, 266, 267, 268, 269, 270, 271, 272, 273, 274, 275, 276, 277, 278, 279, 280, 281, 282, 283, 284, 285, 286, 287, 288, 289, 290, 291, 292, 293, 294, 295, 296, 297, 298, 299, 300, 301, 302, 303, 304, 305, 306, 307, 308, 309, 310, 311, 312, 313, 314, 315, 316, 317, 318, 319, 320, 321, 322, 323, 324, 325, 326, 327, 328, 329, 330, 331, 332, 333, 334, 335, 336, 337, 338, 339, 340, 341, 342, 343, 344, 345, 346, 347, 348, 349, 350, 351, 352, 353, 354, 355, 356, 357, 358, 359, 360, 361, 362, 363, 364, 365, 366, 367, 368, 369, 370, 371, 372, 373, 374, 375, 376, 377, 378, 379, 380, 381, 382, 383, 384, 385, 386, 387, 388, 389, 390, 391, 392, 393, 394, 395, 396, 397, 398, 399, 400, 401, 402, 403, 404, 405, 406, 407, 408, 409, 410, 411, 412, 413, 414, 415, 416, 417, 418, 419, 420, 421, 422, 423, 424, 425, 426, 427, 428, 429, 430, 431, 432, 433, 434, 435, 436, 437, 438, 439, 440, 441, 442, 443, 444, 445, 446, 447, 448, 449, 450, 451, 452, 453, 454, 455, 456, 457, 458, 459, 460, 461, 462, 463, 464, 465, 466, 467, 468, 469, 470, 471, 472, 473, 474, 475, 476, 477, 478, 479, 480, 481, 482, 483, 484, 485, 486, 487, 488, 489, 490, 491, 492, 493, 494, 495, 496, 497, 498, 499, 500, 501, 502, 503, 504, 505, 506, 507, 508, 509, 510, 511, 512, 513, 514, 515, 516, 517, 518, 519, 520, 521, 522, 523, 524, 525, 526, 527, 528, 529, 530, 531, 532, 533, 534, 535, 536, 537, 538, 539, 540, 541, 542, 543, 544, 545, 546, 547, 548, 549, 550, 551, 552, 553, 554, 555, 556, 557, 558, 559, 560, 561, 562, 563, 564, 565, 566, 567, 568, 569, 570, 571, 572, 573, 574, 575, 576, 577, 578, 579, 580, 581, 582, 583, 584, 585, 586, 587, 588, 589, 590, 591, 592, 593, 594, 595, 596, 597, 598, 599, 600, 601, 602, 603, 604, 605, 606, 607, 608, 609, 610, 611, 612, 613, 614, 615, 616, 617, 618, 619, 620, 621, 622, 623, 624, 625, 626, 627, 628, 629, 630, 631, 632, 633, 634, 635, 636, 637, 638, 639, 640, 641, 642, 643, 644, 645, 646, 647, 648, 649, 650, 651, 652, 653, 654, 655, 656, 657, 658, 659, 660, 661, 662, 663, 664, 665, 666, 667, 668, 669, 670, 671, 672, 673, 674, 675, 676, 677, 678, 679, 680, 681, 682, 683, 684, 685, 686, 687, 688, 689, 690, 691, 692, 693, 694, 695, 696, 697, 698, 699, 700, 701, 702, 703, 704, 705, 706, 707, 708, 709, 710, 711, 712, 713, 714, 715, 716, 717, 718, 719, 720, 721, 722, 723, 724, 725, 726, 727, 728, 729, 730, 731, 732, 733, 734, 735, 736, 737, 738, 739, 740, 741, 742, 743, 744, 745, 746, 747, 748, 749, 750, 751, 752, 753, 754, 755, 756, 757, 758, 759, 760, 761, 762, 763, 764, 765, 766, 767, 768, 769, 770, 771, 772, 773, 774, 775, 776, 777, 778, 779, 780, 781, 782, 783, 784, 785, 786, 787, 788, 789, 790, 791, 792, 793, 794, 795, 796, 797, 798, 799, 800, 801, 802, 803, 804, 805, 806, 807, 808, 809, 810, 811, 812, 813, 814, 815, 816, 817, 818, 819, 820, 821, 822, 823, 824, 825, 826, 827, 828, 829, 830, 831, 832, 833, 834, 835, 836, 837, 838, 839, 840, 841, 842, 843, 844, 845, 846, 847, 848, 849, 850, 851, 852, 853, 854, 855, 856, 857, 858, 859, 860, 861, 862, 863, 864, 865, 866, 867, 868, 869, 870, 871, 872, 873, 874, 875, 876, 877, 878, 879, 880, 881, 882, 883, 884, 885, 886, 887, 888, 889, 890, 891, 892, 893, 894, 895, 896, 897, 898, 899, 900, 901, 902, 903, 904, 905, 906, 907, 908, 909, 910, 911, 912, 913, 914, 915, 916, 917, 918, 919, 920, 921, 922, 923, 924, 925, 926, 927, 928, 929, 930, 931, 932, 933, 934, 935, 936, 937, 938, 939, 940, 941, 942, 943, 944, 945, 946, 947, 948, 949, 950, 951, 952, 953, 954, 955, 956, 957, 958, 959, 960, 961, 962, 963, 964, 965, 966, 967, 968, 969, 970, 971, 972, 973, 974, 975, 976, 977, 978, 979, 980, 981, 982, 983, 984, 985, 986, 987, 988, 989, 990, 991, 992, 993, 994, 995, 996, 997, 998, 999, 1000.

Allied by Alpinus to Liliacae.  
 " " Mantle to Orchidac.  
 Nos 298, 299, 300. Genly of parts of pot beauty, to high dew of flux, *Hedychium coronarium*, *Alpinia verticillata*,  
 or to rich glowing colored bracts, as *Curcuma Rosaceana*  
 or to ornamental foliage. *Curcuma*

Value, chief, for aromatic stimulant property of root or rhizome, esp. in Gingers *Galangal*, *Zedoary*  
 " " " " " " seeds, *Cardamom*, *Grains of Paradise*,  
 " " " " " " drying properties, *Turmeric*  
 " for edible fruit, *Albicia woffsonii*  
 " for edible starch, usually not to *Curcuma asperifolia* prepared as *Travancore*, B. & C. *Indo-Indo*  
 " for medical purposes

**GLIOBEA** J. (*Castimbum plus*)  
*G. woffsonii*, fr. ed. to be edible

**COLFERRICKIA** Don (*Ceratostema Fern*, *Fura*, König. *Sphaerocarpus*, Guss., *Manitia*, Gieseler)

**CERANTHERA** Heronim. **MANIPUSIA** Cuss. **TRILOPHUS** Less. **ROSCOA** Trin.  
**ZINGIBER** Gaertn. (*Sapera*, Gieseler, *Dietrichia*, Guss., *Casuarina*, Guss., *Leucopygium*, Rumph.) **GINGER**  
 Shipe, 101; Edm. 72 Rhind 489-90

**CURCUMA** L. (*Curumbet*, Rumph., *Stissera*, & *Brandia*, Gieseler)  
*C. Rosaceana*, prized for its rich glowing colored bracts

*C. Zedoaria*, ZEDDARY, said to possess aromatic stimulant qualities of root

*C. Zecumbet*, ZEDDARY, do

*C. longa*, **TURMERIC** Rott., yield of a subtle lye for its dyeing property; it is considered a medicinal article, & there by water had been an exact process for cleaning colors, Rhind 518

*C. angustifolia*, in **ARRO-BODE**, com. sold in its root of Bonavice, a finer or starch, eatable, & excellent, prepared at Travancore & the a large pt of its habit food. Genly that the color has even more to too much aromatic oil present to permit use of the white starch

*C. rubescens*, its pendulous tubers, & the of root of its of Ind. yields a very beautiful pure starch; native prepared & eat,

*C. ...* yields the orange fiber drug of *Cascara delague* with abds in tubers.

**REMPUSIA** J. (*Sapera*, Rumph.)  
*R. ...* one of the most important medicinal plants of the island

**AMOMUM** L. (*Cardamomum* Rumph. *Mastigo* Salisb, *Alexis* Guss., &c) **CARDAMOM**,  
*A. acuminatum*, fr. on B. Brant & Bonpal, yields C seed,

*A. Guss. Brandia*; **GRAINS OF PARADISE** a hot acid seed, valued to fr a pungent flavor to spirituous liquors; see prin the bot of this; inferior lvs to. *A. asperifolia*, *A. macrotropicum*,  
*A. maximum*, *A. Clusii*,  
*A. repens*, **CARDAMOM**, Rhind 489

**ELEPTARIA** Rheed, (*Matonia*, Sm, *Cardamomum* Salisb, *Geantibus* Feinw) **CARDAMOM**

*E. Cardamomum* produces Malabar Cardamom

*E. major* " Ceylon. Cu an inferior sort

*Dioscorea* *Shime* *Dioscorea* *Shime*, *Gonocarpus*, *Less.*, *Peperidium*, *L.*, *Leptosolen*, *Peed*,  
*Moralephus* *Moralephus* *Shime* *Shime* *Rastrodilus*, *Wall.*, *Jacouaga*, *Less.*, *Utricularia*, *L.*  
*Kelocarpus*, *Presl*, *Nyctoglyphis* *Rajal* *Hitchcockia* *Wald.*

**HEDECHNUM** König (*Gonandrium* Rumph.)  
*H. cinnabarinum*, of some use





WATER-LILLES

They cluster at the alliance of *Nymphaeaceae*, the *Nymphaeaceae*, *Water-lilies*, *Labiataceae*, *Moraceae*, *Urticaceae* or *Melastomaceae*. Let p & d have embryos lying in inside of a large mass of albumen, a singular fact; & distinct; 3d has an-embryonic albumen. They are not highly dev of gts; but secondly stem 0. Close upon *Ranunculaceae*, & much the *Ranul. Allium* at or 2; alliance also to *Quilliferaeae*. Stamens are attached to adjacent the ovary, even to its tip; a condition of *Isopogon* structure.

**NYMPHEACEAE**, consist by Salisb, 1803; many-celled fruit; 5 gr, 50 sp.  
Herbs in quiet waters; or trunk prostrate; lvs peltate or cordate; fls large, showy, & fragrant.

Fruit 4 celled, indehiscent. Seeds 4, attached to spongy peltatus, Albumen fuscous, Embryo small, Cotyledons fleshy, concave; plumule oblique. My place it may Endogous, for seeing no embryo in stem, and find a vitellus (assimilative sac) encloses embryo, as in *Ranunculaceae* (*Ranunculaceae*) *Ranunculaceae* so, was taken for a single cotyledon by Richard, who took the 2 cotyledons for a plumule. Von Martius tells him: Barroca & DeCandolle proved Richard's cotyledon a vitellus. They still question the 2 cotyledons being Exog; find, though in *N. Castalia* 2 in *Nelumbium* not suddenly contracted at base like true Exog; and plumule of *Nelumbium* placed in oblique direction on edge to which the gts to certain undivided margin-embryos; eye nucleus in seed of *Oriolids* & *exhæmical* cotyledon; as the tube it may be called one single cotyledon. Transitional stage of dev persisting?

*Alisma* Hazard thinks roots Nym to be Endog; p gms of *Nymphaeae* (the desc as oval, hybrid, fusiform, & lvs, ovary a single pollen tube; chances of End, *Alisma*.

Milk present DC thinks proves them Exog; but Lily shows *Linnæochæris*, a *Butomid* End-, is lactescens.

Lvs are Exog-, in spite; but Lily says of its value, & suffices the *Hydrocharis* and *Isod-*

*Potamogeton* caudate, lk + Exog- & 0 Endog.

*Isopogon* & *disticha* acumbent stem see lk Exog-

Fls see Exog-, esp *Metaphyllaceae*

Fruit see *Potamogeton*

*Rhizome* of *Castalia* has cellular tissue so confused texture of fibrous, like that of, not at all like Exog- but no close in succulent Endog-; Lily.

Roots of *Nelumbium*, by Michel, have bundles of fibres all placed in concentric circles, the 1st outer; as in Exog- but Lily says the circle of bundles is a firm mass of Endog- cells, (so *Castalia* has the peltate root)

Occurrence of *Castalia* also, says not exactly *Exog-* & endog-; evidence is fully contradictory, in *Castalia*, but cotyledons lengthen the rows to allow plumule to escape in stem, Exog-.

Affinity to *Endog-* discussed by Lily, p 410-11

Example of gradual transition of sepal, petals & stamens & pistil.

Floating plants of the *N. hemis*; one at *Old H*; one in *Stems*; kept in *Stems* by *Victoria*.

Exog- sd to be *antigraphidina*, sedative, narcotic; generally credited, but quite imaginary, with 4 assumed to the dwell \* in the middle of cool & placid waters, combined on the dense robustness of the fibres!

Water-lilies

*VICTORIA regia* desc 1837 by Rbt Schomburgk in R. Benthoe; it is queen of ex-plts; sd lvs peltate 6' diam, arise by an elevated rim sd' high exhibiting the pale concave sides of the stem. Ovals white blossoms drop intercrossed, of sd buried petals; H' diam; sd thus not the Amazon district but neo in the v itself; delights in still waters, grows in inlets, lks, or very quiet bays of the v fully exposed to the sun.

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They classes as the  
re Nymphaeaceae: let  
It has an enormous  
margin, & with the  
side of the oary, about

### NYMPHAEACEAE

Herbs in quiet  
Fruit + called, indehiscent  
Cotyledons fleshy, concave  
and hairy a cotyledon (as  
a single cotyledon by Rich-  
perov Richards cotyledon  
Nymphaeaceae not rudely  
lobed, but be go to cactus  
ticks it may be called  
Milk Hazard takes pro  
a single pollen tube; cho  
Milk present DC rth  
Lvs are long, in a  
Vernonia caribaea, the  
Lanceol. & distinct artic  
Ers. var long, esp. lvs  
Fruit var. Papaya  
Rhizome of Castalia can  
in succulent Endog. L.

Parts of Nymphaeaceae  
but they say the C. lvs are  
Ocularia of Castalia  
leapless the base to ally

Affinity to cede  
Example of pro  
Floating plants  
Perp. ad to b  
assumed to the dwell

### WATER LILIES (Nymphaeaceae) "The Star & the Lily"

Lalla Rookh,  
These virgin lilies all the morn'g  
Bathing their beautees in the lake,  
That they may rise in beauty  
bet' When the beloved Sun's  
beautees.

Joseph Miller  
The lily in the water sleeping  
Embraced with pearl, &  
bosom with gold,  
An emblem is, my love, of thee.

Shelley  
Floating water-lilies, broad & bright  
Wh. lie the ark  
encompassing the barge  
Th' most beaute of the  
even's wondrous light.

Mrs Hemans Lines to the W.L.,  
Oh beautiful thou art, Thine  
sculpture like a stately  
River-Queen!  
Crowning the depths, as with  
the light serene. Of a pure heart,

Bright thy of the wave! Rising  
in fearless grace with every swell!  
Thou seemst as if a spirit  
mildly brave Dwelt in thy cell,

Lifting a like thy head  
Of placid beauty, feminine, yet free,  
Whether with foam or  
pictured azure spread. The waters be.

Longfellow Evangeline,  
Lay in the golden sun,  
the lakes of the Atchafalaya,  
Whose lilies in myriads  
nodded on the slight undulations  
Made by the passing  
suns, & ever gleaming  
in beauty, the lotus  
lined her golden  
bosom above the heads  
of the boatmen.

Scott  
The water lily in the night  
Her chalice rears of silver light,  
Woodsong, Cleopatra;

These floating in golden  
sunlight In rears the  
lily, smooth Nile;  
Thou slender paper  
that cover the sleeping  
cocoon-like;

The lotus lily on the water  
And opens its  
bosom of gold,  
Where ever its  
head left yonder  
Never a ripple  
rolled.

Longfellow by the  
Majestic  
White water lily,  
cupped & covered  
by golden  
suns, & from the  
site of light  
Lifting the  
golden blossoms &  
seeds, they  
are illumined  
of pure, my  
bosom &  
heart!

As in Song of  
Henry  
Milk where transparent  
waters glide Soft  
flouring o'er a  
tranquil bed;  
Jaws closed on  
the dimpling  
lily, Nymphaea  
reaches lovely  
head;

But conscious of  
the earliest  
beam, She rises  
from her  
humid nest,  
And sees  
reflected on  
the green  
the virgin  
whiteness of  
her breast.

Fill the bright  
daystar to the  
west She  
slumbers on  
the rocky  
shore,  
Then folded  
in her  
modest  
vest And stony  
river beds  
glimmer by;

Broad white  
lilies lie  
humbly And  
starry  
river beds  
glimmer by;  
And around  
them the  
soft steam  
deth glides  
a dance  
With a  
murmur  
distinct  
and  
radiant.

The water lily  
to the light  
Her chalice  
rears of silver  
bright Scott of  
Lock Kavinna

Oh beautiful  
thou art, Thine  
sculpture like  
a stately  
River-Queen!  
Crowning the  
depths, as with  
the light serene  
Of a pure heart!

Bright thy of  
the wave! Rising  
in fearless  
grace with  
every swell!  
Thou seemst  
as if a spirit  
mildly brave  
Dwelt in thy  
cell,

Lifting a like  
thy head  
Of placid  
beauty, feminine,  
yet free,  
Whether with  
foam or  
pictured  
azure spread. The  
waters be. Mrs Hemans.

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17 classes a  
re Nelumbaceae  
It has an enormous  
umbelliferous, & much  
like the others,

NYMPHAEA

Herbs in q  
Fruit + called in  
Catechism history  
and finds a circle  
a single corolla b  
young Richards on  
Nelumbium not in  
lobes, but he quote  
thinks it may be call  
Milk Thistle th  
a single pollen cube  
Milk present D  
Lvs are hexag-  
Pinnatifid corolla  
Inverted + distinct  
Fls are hexag-  
Fruit on Papag  
Bhizome of Costa  
in water. Ends  
Lvs of Nymphaea  
but they are the  
occasional of the  
lengthen the base:  
Affinity:  
Example:  
Floating:  
Ergo so  
around to the d

EURYALIS *Salis.* (Annetoga, Ande) type of tribe Euryalidae, but also includes *Viviana*; tribe has  
tube of calyx adnate to disk; petals distinct. Nymphaeidae (Castalia, Nymphaea) have both distinct  
and Pauciflorae (Bocclera) has calyx tube but corolla adnate to the disk + narrow petals.  
Euryale seeds on a large qu of starch, & are thus a forest food in India & China etc.

VICTORIA *Lindley*  
seeds those called WATER LILIES.

"Most gigantic & beaut of water plants"; of Asia; fr its corolla  
Half-adherent ovary produced; sepals being adnate to disk of fls.

[*RAFLESIA Arakeli*, of Arakan, B., even larger in the than Victoria; fig. p 100 *hind*, *descrip* p 536









**FAUCIARIA** Pers. Petals are carried up on the stamens, on the central disk, on outside of wh.  
they even obscure into a tube. singular instance of helioles calyx's superior corolla in same place.

**CAROLINACEAE** - so named by P.B.S. (1835) as C-bee, Richy 1807; a section of *Eidymol*

*laccæ*, PC, 1821; an order *Hydrocotylaceae*, Schleiden, 2p. 32g.

Diff. fr. Ky - in long distinct carpels; [also visible nucleus; + albumen]

Floatz petalate-lob; also arillog, 2 Nitacy; yel or purple, 8304 F. same <sup>at</sup> same <sup>2</sup> 204

Ext indented, tipped by hooked style.

Diff. fr. Nelaub - so in long + albumen, more than 1 seed in a carpel, lit. tenu.

*Epidemia* is usually a very thick layer of well defined isochlorous gelatine, in wh the cells of the epidermis  
are introduced. Schleiden: as trace of spiral cells in pet. suborg.

Stem, Ly 64 consist of a mass of small cells, tissue surrounds 15-16 large air tubule, one on each  
side; in centre of wh is a pt of woody bundles, cross cut shaped in the transverse section, or the  
centre of the inside. These bundles are of thin-walled striped tissue, or a solid (air?) tube in middle.

Ann. fr. NT to Capensis; in case of *Basta* hyd. tropics.

**CAECOMIA** Aub. (Nectria, Schreb.) *Caecomyces* is split by Lill, 1842

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**BRAESENIA** Pers. (*Hydrocotyle* *Milib*) (*Rhodachne* *Sw.*) Fr. purpuraceo, cross seen, 6p. 111





PINES

CONIFERAE

Note many kinds, all in cones, cone-bags; simple lvs, needles; wood cells with bordered pits.
Founded by Just as Coniferace 1789; Lvy calls them Pinaceae & bef. Coniferae, 1835.
Pines of China, Lvy p 226-7
Div into 2 groups (Virens, Benthams) Abies or pollen curved oval, dit granular ends, increased band;
Cupressitaceae, Cupressitales

G. 20, p 100.
For perfect name of Pinus see to list of Ind Brit. Pinus part in cones; + in Burz Sib, China,
temp Asia.
Aspect in N by diff to S; in N, Pines, Larice, Cedrus, Spruce, Juniper
(in S; Abies, Cedrus, Podocarpus, Pammorus, Euterpeas, Piceids,
Gigantic, fast growing, white, white

THE STONE PINE

PINE tree, Pinus pinea, elegant parasol-like with edible kernels (almond-like)

History difficult bc. the anc. do not distinguish between the conifers; exc 2 groups, namely the P. pinea; the other has the 2 names of Pinus and Pinus; the Pine if it occurs comes under these,

Howev kn the 3, i.e. a tall & spreading tree w exserts lofty towering, heaven-high = the Elm therefore

his Pinus occurs in 2 pls, in Ital. Then as the into oak or poplar or pine (it must for some great admiral) Not to the oak till to a general sound. It makes & spreads its honours on the general Thus fall the King. How the adj. Adagio, i.e. slowly, & the asson

in oak & poplar leads more naturally to the larce-birch (Pinus pinea) Pinus laricina. So Ulysses on Calypso's Isle builds his ship of elm, poplar & fir, etc. Same considerations apply to 2d passage. Pinus & Pinus have as four elemental meanings = pitch-trees, resin-trees: Theophrastus says what he called Pinus the Greeks called Pinus; gives details, but too definite; O to show what the cult'd pine had in the eyes of the anc. notices, one was a foreign tree. Is called Pinus as in the anc. times. Ge. names for the nuts in the cone" was at 1st full, for all kinds of pine

Pinus; later was confined to pine-kernels; mentioned in the anc. times by Agricola as of Persians 2d of BC; called pines in the anc. times of Persians or pine-nuts; Theophrastus says of Pinus being a favorite delicacy in Sicily; deserves a pleasant resting-pl. the fruit open, birds build on trees spread a cool shade & pines drop the nuts (for when the cone has hung by the scales open rather & drop the nuts which then sit long to be cracked open)

In Italy Cato speaks of the pine there; tells how to sow the kernels; Pliny begins his account of tree-fruits w 4 edible cone-kernels, among them Pinus sativa, the pine-stone or wild pine, robs nuts the Pausanias boiled w honey & called the mixture aquicela. Pliny the younger says his celebr 2d tree to Piceus, ever the candle is coming out of Venus to a Pinus, we reap our P w umbrella-like canopy rests on a tall & slender shaft. Piceus syl of not as a forest but a garden (there's foreign) tree; Virgil pinus in hortis, Ovid culta pinus. Petronius distinctly points its bare, tapering trunk & wedding-rustling roof. Martial roars the roach rest on beneath the P lest the heavy cones fall on ye head.

Now in It it now climbs high unless we get far to the shore; a nice part of foreign origin both It & Gr; prob fr Asia; O kn these wild honey; too old for it are Piceus; from the classic admiral of some villas & gardens at home; lately extensively planted in the rich Campagna of Naples abt wh the wide-wise its charming umbrella-shaped canopy of tutted bea

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Note times, t  
Founded by Just a  
Dino of chanc, L  
Dio into 2 parts (n

G. 20, of 100.  
Ev potet nam  
twain (Nico.

Gigantic, fast get

Carpathian balsam is not to this sp, by, but uses it in ship. 146, 147  
Not a thin dessert frump (most in the celebrated *pinetum*  
re p-tment of Ravenna; to this R owes its salubrious air the more by  
marshes; P-tre. is no a former sea-bottom, 4+6 mil abg shore, 3 bet,  
Rael Witte desc it. Instead of the uniformity of a swaglog baldachin,  
in wh form we are accusd to see the pine, we here find many kinds  
of grand old trees to the straight & most curiously twisted bir; & be-  
low the verdant roof a luxuriant growth of shrubs & creepers covers  
the damp & fertile soil in wonderful variety. An author of last ce-  
ctd + 300 kds of pls in the P; & amongst them sing & clasp & buzz in-  
numerable birds with whisp'd ovartures; whl far abv, the breeze of  
the soft sea whisps incessantly thro' the trees of the P's. This pl  
yields 3000 bu. p. kernels a y; the easy & vesivous coars afford the  
best beards-bees. Mainly no new formed ld, sea in t Romans;  
cd not be tra-pld bet t Prucgins. While testimony was no doubt  
rich in P bet; Faenza in R had cultd Ps whl trowed abv the sown  
fields, in ds of Silius Italicus. August chose R as Lof the 2 seas for his  
fleet; prob-bec of millt & polit reasons, not for trees. A pl called Pineta was  
in R at t Gothic invasion; says to be tra NW of the city, not where it is now.  
Latter was pld to protect R fr the sea, at a t when all it was left  
of nature by conatidians were masters of technical skill. Dacte saw &  
adm it, calls it that of Chiassi, ie classis, ie the old harbor of R; Boraccio  
saw. It was once prop of sol oise & monasteries; then of the Pope; no union  
of It, ~~it~~ he ceded it to the canons of St John Lateran, then to a private  
radio; wh contacts were to nullified by fr courts; It got however said a redly  
understand & took possn of the P; capital of the P valued at 4-5 mil francs,  
Citns of R bo by anc customs, extenso rights of use; hence conapt that  
afford easy livelihood, it attracts vap'oroids; still the P is considered the  
palladium of R, shieldg the cy & district fr poisonous exhalatns & tides,  
& is valued & cherished accordingly." *Hehn.*

genetic, comes from  
by an in ship 146

Frank clear at



Write in  
Founds by J  
Diss of chas  
Dio into 2 ps

G. 20, p 10  
In col  
transl.

Gipsaria, fa

**PIRUS L.** *Gla. 157 347-70 Rhin 458-468/10*

*P. palaestina*, *Virginiana*, or largely used in many for wood, by oil of Turpentine, common fruit

*P. halepensis*, grows of Disc. says 4y, with bark fine, was largely used by the ancients

*P. sylvestris* yields Euc oil of turp, Gum & Turpentine pitch

*P. guaiac* y. Hungarian balsam.

*P. Finaster* y. Bordeaux turpentine

*P. insignis* a well known Cal. wood used by the Mexicans

*P. Lambertiana*, the **SURINA PINE**, 200' high, stem, & diploid in its bearing; trunk clear of  
limbs for 20', at 20' to 60' bark.





CUNNINGHAMIA B. & C. (Bellis, Salic.)

ARTHROTAXIS, Don MICROCACHRYIS Hook. & G. SCIADOPITYS, Zucc.  
M. tetrasperma is the Hum. Pine of Tahiti.

ARAUCARIA Jacq. (Dumoy, Lam., Colymba, Salic.)

A. Australis for a var. fraxet. var. in

A. Bidwillii, var. A in Austrel; BUNYA-BUNYA, Mr Bidwill Ed. natives of Moreton Bay feed on seeds of it.

A. imbricata, seeds eaten when fresh R. ind 476 SIR J. BANKS' A.

A. excelsa, NORFOLK I. PIN, R. ind 476

EUTASEA, Salic. (Altiaga, Lind)

E. excelsa, the Norfolk Island Pine, a warm tree.

DAMMARA Rumph. (Araucaria, Salic.)

D. Australis, the KAURI tree of NZ, 200', have 1 ft compact wd, at knots, the wood finest heart of the  
many are now made. G. & 2 based below resinous wood.

DACRYDIUM; one of the NZ the highest trees.

D. 70' tall in KAIA TERU of NZ to 200' high.

CUPRESSACEAE,

JUNIPERUS L.

J. oxycedrus sup. to be the word for red. G. covered the isopods of the pines, L. ind 477  
retaria, pines. J. Sabina, SABELL, berries stimulant, diuretic R. ind 477

J. communis, partakes of the Sabina genus; berries diuretic, used to form pills.  
R. ind 476

J. procera, ZADD or THEBA of Abyssinia, of timber val, 1 of heart been shown, hard, durable in  
build; same or near as J. phoenicea.

THEBAE CARB. US, Truceo.

THEBAE Truceo (Rota Don. Thaxopodus Arab. Cyparissia, Pm)

Thebae, berries partake of Sabina qual. ANNA VINCE R. ind 475

CRYPTOMERIA, Pm

DIROXIS, Racc.

CUPRESSUS Trautv. (Chamaecyparis, S. p. CYPRESS; one that fabricator, it is  
Baltic; Gales of Constant, found for 1100 y. Constant to King Eugene IV, were of it, G.  
C. thuyoides, but eaten 2000 y. in B. G.

C. macrocarpa the Callypress; magnificent at Cypress Pt., val. to the State"

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RETINOSPORA. Zucc

CALULTRIS Vent

C. quadrivalvis, et c. the SANDARAC tree, the ARAR TREE of Botany yields a plank 2 1/2 mls, wood that by Twiles is indestructible, used for the calps & flus of the mosques. S., a cobble, yel, brit., luscious, warm, astringent, w acid aromatic taste, exudes latex. Found on Mt Atlas.

PARGANIA Endl. (Eucalyptis, Bunge)

TAXODIUM, L. K. Rich (Schubertia, Miq., Condylocarpus, Salis)

CHAMARUPICE, Zucc

PHACOSIHERA, Nees

SG-transfers to Paradyf, w. whole Nest a February, fern of a Damier, etc at a Damier, seed at a Damier, habit of a fern.

SEQUIA Endl.

GUSTAFS PROBUS, Zucc

WIDDRINGTONIA Hall

ACTINOPORUS, Endl. FRENELA de

SAME-GOTHEA Ludwig LIBOCORUS Endl

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TAXACEAE, comit. Rich, 1820; 93, 50 92.

Diff. to Conifers in bag. fruits not enclosed in cones, each made prominently, supported by hard scales; copanates in than that of C. Lvs. more eggd, than the cones in length, i.e. folded like, & even thicker.

Milder climates over the world; w. evergreen in deciduous; com. 2000 the only one in Eur. is seen in N. of Asia. Most in N. of Asia.

"This day before dawn I received a bill out of the  
 for several hours.  
 And I said to my spirit, 'What is become the  
 and the pleasure and the hope of my being  
 or be still and safe, & I said, 'What  
 And my spirit said to me, 'But what shall I  
 I pass and my heart beyond.'  
 JB

Very elasticity; lvs. field  
 y it, & that it was of  
 a to man, but also that  
 d. or in too large doses,  
 does not damage,

Rhind 173

The perhaps the strong w. and strong light. JB

"There is an old tree living between the  
 the wings of the yellow in the  
 to have pleasure - now one  
 birds - but my spirit is the spirit of the  
 JB

TWT



RETINOSPERA Ruess

CALINITRIS Voss

C. quadrivalvis,  
wood that by DuRoi's  
tree, Indian, cones, sub

PARGONIA Endl.

TAXODIUM, Leri

CHAMAEPITYS,  
PIHAROGITICHA,  
36 - mountain to Paradise  
SEQUOIA Endl.

TAXACEE, comita Rich, 1829, 98, 50 pp.

Diff. to Conifers in heavy fruits not collected in cones, each cone prominently supported by hard scales; expansion less than that of C. Lvs. rusty redd, then the veins in fourth, i.e. curled tree, & even thikus.

Milder climates over the world; var. nana is in America; can grow the only one in S. Am. in con. in N. of Asia. Most in near Asia.

Resinous like Conifers

TAXUS, L. YEW, Common timber tree, unsuited for durability & elasticity; lvs. held by joints etc. to houses & roofs; Cassius relates that K. Carinus stole by it, & that it was by oak in Gaul & Gesta; an It. physician says Yew lvs. given and doses to man but says that of Digitalis or has a similar effect, reducing circulation, fatal if too long persisted or in too large doses; but prof. to D. its effects not accounted for the system. Berries not dangerous, Seeds eat to be oedemas.

Ellac 261 Skljpc Name to lva, L. wben also lvy, Rhind 173





**CYCADACEAE** comest. Rich 1800; 68, 2502; charc; Gymnosperms or simple continuous stem  
parallel veined pinnate lvs, scattered cones-scales,

Small trees or shrubs, det Palms etc; stem cylindrical, spheroidal or diskately broad, skin singly or with  
lanceolate scales of bud woody, 16-20 lvs. Mass of pith woody, traversed by woody bundles, x-rays  
of woody parts, parts large, small in depth x + annulate circles, also pierced by cellular  
spaces. Wood of glaucous woody t, x typical. Lvs pinnate, lvs woody, pinnately  
cylindrical parts det in bud. Lvs woody, single or pinnate, highly in the petiole, & woody in  
distractulate. Fls sepals, not true of calyx or corolla; staminate in terminal cones, one of scales in  
over to side or lvs called athera, split lvs; yellow-brown, angular. Pistillate are at naked scales  
and petiole scales, or at base of flat ones, or on margins of contracted lvs. Seeds hard or woody  
coated nuts, or 1 or more embryos hung by a ligament to a central cavity of large woody  
or woody albumen; cotyled woody, rare or -dormant.

Ther det lvs called in Mexico by Abasco, or Eolary, L. det edged idea of A. then in Eolary; no det  
Vernon suggested call Cycas & Zamia a sep tribe; L. C. Richard, the late, let had them an cone, 1872,  
thry; it was introduced from Texas & Bahama.

Det, made by Hy p 484

Mexico it was a very small, det; one in equatorial det, the in C. B. & M. adsp. One Zamia is  
a consid part of flora of Got Fr.

### CYCARL

C. nodulata, in Jap a kind of eggs prod for cellulose paper of stems; ed by Thunberg to be in highest of  
trees; older able to in original qu of it a lft; apt low of J to the base out of the a. Hy. hy p 485

C. nodulata, part of eggs prod for cellulose paper of stems; ed by Thunberg to be in highest of  
trees; older able to in original qu of it a lft; apt low of J to the base out of the a. Hy. hy p 485

**DION** Lindley (Zamia, Ruiz)

D. edule, com in some parts in Mexico; the pet seeds there from a kind of Zamia cone.

**ZAMIA** L. (Acrostichum, Rich) Arrog charact. veget of E. Cuba, det, one in the pet tract of  
thunder on the Coffee forests.

Z. pumila x in some parts yield an excellent Acrostichum in Bahama x in W.I.

**ENCEPHALARTOS** Lehmann; **CAFFER-BREAD** the various sp of C. B. M.

**MACROZAMIA** Nitz.

M. spicata, sup to be the sp with in W. coast Austr; grows to 30' high

**DIPSACOGAMIA** Lehmann

**CERATOGAMIA** Ad Brongniart.

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