

AN ABSTRACT OF THE THESIS OF

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Title TAXONOMIC STATUS OF FIFTY-THREE ORNAMENTAL PLANTS,
 TWENTY-FIVE OF DISPUTED NOMENCLATURE

Abstract Approved: [REDACTED]
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Recognizing the fact that florists, seedsmen, and their customers are often handicapped by inaccuracy in the nomenclature of common garden plants, the author investigated 53 such plants from garden catalogs. The plants were grown, described, their nomenclatorial history studied, and a number illustrated.

Twenty-five were found incorrect, and are revised, as follows:

As listed in seed catalogs.

Corrected names.

Agrostemma coronaria

Lychnis coronaria

Alonsoa compacta
 " grandiflora
 " Mutisii

Alonsoa Warscewiczii

Anagallis grandiflora

Anagallis linifolia

Bartonia aurea

Mentzelia Lindleyi

Cacalia coccinea

Emilia flammea

Calliopsis bicolor
 " elegans
 " marmorata

Coreopsis tinctoria

Chelone barbata

Pentstemon barbatus

Chieranthus Allionii

Erysimum asperum

Cleome pungens

Cleome spinosa

Coronaria tomentosa

Cryophytum crystallinum

Digitalis gloxiniaeflora

Eremurus aurantiacus

Euphorbia variegata

Galium Mollugo

Godetia decumbens

Gypsophila paniculata

Helianthemum mutabile

Lobularia maritima

Nigella damascena

Nigella hispanica

Phacelia minor

Physalis Alkekengii

Salpiglossis grandiflora

" hybrida

" variabilis

Valeriana coccinea

" ruber

Whitlavia grandiflora

Lychnis coronaria

Mesembryanthemum crystallinum

Digitalis purpurea

Eremurus sp.

Euphorbia marginata

Gypsophila paniculata

Godetia amoena

Galium Mollugo

Helianthemum nummularium

Alyssum maritimum

Nigella hispanica

Nigella damascena

Phacelia campanularia

Physalis Franchetii

Salpiglossis sinuata

Centranthus ruber

Phacelia campanularia

The remaining 28, correct but of special horticultural interest,
are discussed from the latter standpoint.

Origins of the names, also pronunciations, are included.

TAXONOMIC STATUS OF FIFTY-THREE ORNAMENTAL PLANTS
TWENTY-FIVE OF DISPUTED NOMENCLATURE

by

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INTRODUCTION

In checking catalogs which are sent out to patrons by many seed companies and numerous nurseries each year, the difficulty of being certain in many cases of the botanical name and position of the plants offered, interested the writer. Nurserymen for the most part are not botanists, and though it is of great importance to them that botanical accuracy be observed in their descriptions and names of plants, and while most of them conscientiously attempt such accuracy, the fact remains that there is no catalogued information available to the average seedsman, which can help him clear up disputed points. Added to this is the fact that horticultural varieties and species, while recognized as legitimate for the grower, are nevertheless not botanical species; and also, that errors, once introduced, are often copied and recopied and retained year after year, since no one has taken the trouble to correct them, and these result in confusion which is multiplied as the years go on.

In correspondence with seedsmen, there was found a genuine concern over this fully realized situation; and a hearty cooperation in an attempt to clear up some long disputed nomenclatorial points.

This paper accordingly was undertaken in an attempt to make available corrected names and synonyms in place of

the frequently incorrect ones which appear in the everyday literature on ornamental plants.

The field was found so extensive that for the purpose of this paper the number was limited to 25 species of disputed nomenclature. In the process of investigation 28 other plants whose status was carefully checked were added, not because of uncertainty in their taxonomic position, but because they were of unusual botanical interest.

METHODS OF PROCEDURE

Considerable correspondence was carried on with seed companies throughout the United States in order to secure catalogs and seed samples.

A number of seed companies contacted were most cooperative in furnishing seeds free of charge or for the meager cost of postage and preparation in sending.

In addition to furnishing samples some companies have asked for the information found regarding the confusion of names and classification.

SOURCE OF SEED SAMPLES

The following is a list of seed samples used in this project:

Number of packets	Seed Company
8	Aggler and Musser Seed Co., Los Angeles, California
56	Burpee Seed Co., Philadelphia, Pa.
43	Butzer Seeds, Portland, Oregon
34	Dreer, Henry A., Philadelphia, Pa.
40	Ferry-Morse Seed Co., San Francisco, California
15	Germain Seed Co., Los Angeles, Cal.
8	Grand Junction Seed Co., Grand Junction, Colorado
<u>5</u>	Haven Seed Co., Santa Ana, Cal.
209	Total number packets received

These seed samples were grown in the greenhouse and out-of-doors, recorded by number, and data kept on each.

Specimens, other than the above, were secured from the gardens of various flower lovers, gardeners, and at flower shows.

During the winter and spring terms of 1934, through the courtesy of the Botany Department and the greenhouse, 30 or 40 flats, soil, and space in one of the houses were made accessible. There the majority of seed samples were planted and grown to the seedling stage. Transplanting of approximately 200 species of seedlings was then completed on a garden plot north of Corvallis.

At various stages in seedling development, plants were removed and pressed for study and herbarium specimens; later in the flowering stage, specimens were studied, a number of these in detail as included in this paper; and from each, pressed herbarium specimens were made.

Identifications, also the written plant descriptions, were made from fresh specimens.

FAMILIES REPRESENTED

- AIZOACEAE (FICOIDACEAE) - Mesembryanthemum crystallinum Linn.
- BALSAMINACEAE - Impatiens Balsamina L.
- BORAGINACEAE - Cynoglossum amabile Stapf. and Drummond.
- CAMPANULACEAE - Campanula rapunculoides Linn.
- Campanula rotundifolia Linn.
- CISTACEAE - Helianthemum nummularium (L.) Mill.
- CAPPARIDACEAE - Cleome spinosa Jacq.
- CARYOPHYLLACEAE - Dianthus barbatus x Allwoodii.
- Gypsophila elegans Bieb.
- Gypsophila paniculata Linn.
- Lychnis coronaria Desr.
- CHENOPODIACEAE - Kochia scoparia Schrad.
- COMPOSITAE - Coreopsis tinctoria Nutt.
(Calliopsis)
- Dimorphotheca annua Less.
- Dimorphotheca aurantiaca DC.
- Echinops Ritro L.
- Emilia flammea Cass.
- Gaillardia aristata Pursh.
- Gaillardia pulchella Fouger.
- Tagetes erecta L.
- Tagetes patula L.
- CRUCIFERAE - Alyssum maritimum Lam.
(Lobularia)

- CRUCIFERAE - Alyssum saxatile Linn.
 - Erysimum asperum (Nutt.) DC.
 - Matthiola incana R. Br.
- EUPHORBIACEAE - Euphorbia marginata Pursh.
- GERANIACEAE - Tropaeolum majus Linn.
- GRAMINEAE - Phalaris arundinacea L.
- HYDROPHYLLACEAE - Phacelia campanularia A. Gray.
- LEGUMINOSAE - Lathyrus latifolius L.
- LILIACEAE - Eremurus sp.
- LOASACEAE - Mentzelia Lindleyi Torr. and Gray.
- ONAGRACEAE - Clarkia elegans Dougl.
 - Godetia amoena (Lehm.) Lilja.
- POLEMONIACEAE - Phlox Drummondii Hook.
- PORTULACACEAE - Portulaca grandiflora Hook.
- PRIMULACEAE - Anagallis linifolia Linn.
- RANUNCULACEAE - Adonis aestivalis L.
 - Anemone japonica Sieb. and Zucc.
 - Delphinium cultorum Voss.
 - Nigella hispanica Linn.
 - Nigella damascena Linn.
- RUBIACEAE - Galium Mollugo Linn.
- SAXIFRAGACEAE - Heuchera sanguinea Engelm.
- SCROPHULARIACEAE - Alonsoa Warscewiczii Regl.
 - Digitalis purpurea Linn.
 - Pentstemon barbatus Roth.

SOLANACEAE

- Physalis Alkekengii Linn.
- Physalis Franchetii Mast.
- Salpiglossis sinuata Ruiz.
and Pav.
- Schizanthus retusus Hook.

UMBELLIFERAE

- Eryngium amethystinum L.

VALERIANACEAE

- Centranthus ruber DC.

	Families	Genera	Species
Of disputed nomenclature	17	22	25
Of botanical interest	<u>11</u>	<u>23</u>	<u>28</u>
Total	28	45	53

The following double column summarizes the correction of disputed names:

As Listed
in Many Seed Catalogs

Correct Botanical Names

<u>Eremurus aurantiacus</u>	<u>Eremurus</u> sp. (See discussion)
<u>Cryophytum crystallinum</u>	<u>Mesembryanthemum crystallinum</u>
<u>Gypsophila paniculata</u>	<u>Galium Mollugo</u>
<u>Coronaria tomentosa</u> or <u>Agrostemma coronaria</u>	<u>Lychnis coronaria</u>
<u>Nigella damascena</u>	<u>Nigella hispanica</u>
<u>Nigella hispanica</u>	<u>Nigella damascena</u>
<u>Cleome pungens</u>	<u>Cleome spinosa</u>
<u>Lobularia maritima</u>	<u>Alyssum maritimum</u>
<u>Chieranthus Allionii</u>	<u>Erysimum asperum</u>
<u>Euphorbia variegata</u>	<u>Euphorbia marginata</u>

<u>Helianthemum mutabile</u>	<u>Helianthemum nummularium</u>
<u>Bartonia aurea</u>	<u>Mentzelia Lindleyi</u>
<u>Godetia decumbens</u>	<u>Godetia amoena</u>
<u>Anagallis grandiflora</u>	<u>Anagallis linifolia</u>
<u>Phacelia minor</u> or <u>Whitlavia grandiflora</u>	<u>Phacelia campanularia</u>
<u>Physalis Alkekengii</u>	<u>Physalis Franchetii</u>
<u>Physalis Franchetii</u>	<u>Physalis Alkekengii</u>
<u>Salpiglossis variabilis</u> or <u>hybrida</u> or <u>grandiflora</u>	<u>Salpiglossis sinuata</u>
<u>Alonsoa grandiflora</u> or <u>compacta</u> or <u>Mutisii</u>	<u>Alonsoa Warscewiczii</u>
<u>Digitalis gloxiniaeflora</u>	<u>Digitalis purpurea</u>
<u>Galium Mollugo</u>	<u>Gypsophila paniculata</u>
<u>Chelone barbata</u>	<u>Pentstemon barbatus</u>
<u>Valeriana coccinea</u> or <u>ruber</u>	<u>Centranthus ruber</u>
<u>Calliopsis bicolor</u> or <u>elegans</u> or <u>marmorata</u>	<u>Coreopsis tinctoria</u>
<u>Cacalia coccinea</u>	<u>Emilia flammea</u>

EXPLANATION OF BODY OF THESIS

The 53 plants studied are discussed in phylogenetic order, those of disputed nomenclature described in detail; others are accompanied only by horticultural notes and

items of interest.

Synonymy list is from Index Kewensis.

TAXONOMIC STATUS OF FIFTY-THREE ORNAMENTAL PLANTS,
 TWENTY-FIVE OF DISPUTED NOMENCLATURE

GRAMINEAE (POACEAE). Grass family.

Phalaris arundinacea L. var. picta L.

Ribbon-grass.

Phalaris, Linn. Syst. ed. I (1735); Gen. ed. I. 14 (1737).
arundinacea, Linn. Sp. Pl. 55.--Reg. bor. temp.

DESCRIPTION: Phalaris arundinacea L. var. picta L.

Perennial, with creeping rhizomes; stems 2-5 ft. tall, erect, glabrous or somewhat granular; leaves 5-12 in. or more long, $\frac{1}{2}$ -1 in. wide, alternate, acuminate, glabrous or lightly scabrous, white and green striped or some yellowish; ligule papery and white, $\frac{1}{8}$ in. long, clasping the stem; inflorescence a panicle, 3-7 in. long, narrow, spreading at flowering time; pedicels quite hairy, nearly bristle-like; spikelets single, $\frac{3}{4}$ -2 in. long, flattened laterally, with one terminal perfect floret, 2 sterile lemmas, rachilla disarticulating above the glumes; glumes 2, equal, $\frac{1}{8}$ - $\frac{1}{4}$ in. long, 3-nerved, boat-shaped, sharp-pointed, awnless, mid-vein having row of fine hairs; fertile lemma $\frac{1}{8}$ in. long, stony; palea faintly 2-nerved; stamens 3; stigmas 2, plumose; fruit a grain, $\frac{1}{8}$ in. or more long.

Phalaris (fal'ar-ris), an old Greek name. Plant often grown in gardens and used in decorative bouquets; spreads rapidly by the rhizomes. Plate 1 ; p.52

LILIACEAE. Lily family.

Eremurus sp. sold as aurantiacus Baker.

Desert Candle

Eremurus, Bieb. Cent. Pl. Ross. t. 61 (1818).

DISCUSSION: There is apparently some confusion in the nomenclature of the commercial species, and several hybrids are known. The plants which are being sold under E. aurantiacus are perhaps in some cases hybrids, but further study from fresh material is necessary to establish correct identities.

DESCRIPTION: Eremurus sp.

Perennial; roots, clusters of fleshy fibers tapering upward;; stem 2-4 ft. tall, $\frac{1}{4}$ in. more or less in diameter; leaves in dense basal rosettes, long and linear, more or less 3-angled, inclined to be fleshy; flowers in raceme, 6-15 in. long, light greenish-yellow throughout; perianth $\frac{1}{4}$ - $\frac{1}{2}$ in. long; sepals 3, with slight ridge down center, not shining; stamens 6, $1/2$ - $3/4$ in. long, anthers orange; style $3/4$ in. long, geniculate;

fruit a capsule, roundish, shining, 3-loculed; seeds more or less 3-angled.

Eremurus (e-ree-mure'us), from the Greek for lonely tail, probably in reference to the solitary flower cluster (32). A most striking golden flower cluster.

CHENOPODIACEAE. Pig-weed family

Kochia scoparia Schrad. var. trichophila Bailey.

Burning Bush. Standing Cypress
Mexican firebush. Belvedere.

Kochia (ko'ki-a), named for W. D. J. Koch, a German botanist. Plant first bright green then turning to a red in autumn. Often used as a temporary hedge.

AIZOACEAE. Carpet-weed family

Mesembryanthemum crystallinum L.

Ice-plant

Mesembryanthemum, Dill. ex Linn. Syst. ed. I (1735).

crystallinum, Linn. sp. Pl. 480. - Graecia; Ins.
Canar.; Afr.; Austr.; Calif.

Cryophytum, N. E. Brown in Gard. Chron. 1925, Ser. III.

crystallinum (M. crystallinum). lxxviii. 412, Clavi. FICOIDACEAE

DISCUSSION: AIZOACEAE (10) is the main family, with FICOIDACEAE a sub-family. Mesembryanthemum (32) is the generally accepted generic name among botanists; however, in 1925 a number of botanists, mostly of South Africa,

interpreted this genus as an aggregation of 7 or more genera, including Cryophytum (17). All major botanical publications retain the original generic concept of Mesembryanthemum.

DESCRIPTION: Mesembryanthemum crystallinum L.

Annual or biennial, spreading on ground, covered with glittering or glistening vesicles; stem procumbent; leaves alternate, flat, fleshy, spatulate or broad-ovate, entire, /clasping at base; flowers axillary, nearly sessile; calyx 5-cleft, lobes ovate; corolla white to light rose, many petals united at base; stamens many; pistil superior with many stigmas; fruit a capsule, hygroscopic, stellately dehiscent at summit, seeds many.

Mesembryanthemum (me-sem-bri-an'thee-mum), from the Greek for midday flower. Flowers open in sunshine and close at night. Very decorative for ground cover or window-box.

PORTULACACEAE. Purslane family

Portulaca grandiflora Hook.

Rose moss. Sun moss.
Garden Portulaca. Wax pink.

Portulaca (por-tew-lak'a), Latin name of purslane.

A most interesting ornamental plant for borders, rockeries, or ground cover, occurring in many color varieties, some

double. Plate 3 ; p. 54

CARYOPHYLLACEAE. Pink family

Dianthus barbatus x Allwoodii.

Sweet Wivelsfield

Dianthus (dy-an'thus), from the Greek for the flower of Jove. A very spicy-scented clump plant, a hybrid from the **crossing** of the common Sweet William (Dianthus barbatus) and Dianthus Allwoodii, which is a cross between the carnation (D. caryophyllus) and Grass pink (D. plumarius).

Gypsophila paniculata L.

Baby's-breath. Mist.
Gypsum Pink.

Gypsophila Linn. Diss. Chen. 41 (1753); Amoen. Acad. iii. 23 (1756).
elegans, Bieb. Fl. Taur. Cauc. i. 319. - As. Min.
paniculata, Linn. Sp. Pl. 407. - Europ.; As. bor.

DISCUSSION: Due to considerable confusion over the common name "Baby's-breath", we find sold under that name both Gypsophila paniculata and Galium Mollugo. That is, the seeds of one may be sold under both names, or seeds of one in package of other name.

At a glance the two plants give a similar appearance, and in decoration are used for the same purpose.

Following are the comparative differences and similarities of the two plants. The citation for Galium will be included in the phylogenetic arrangement and order, page .

Gypsophila paniculata

CARYOPHYLLACEAE

Leaves lanceolate, sessile
 Leaves opposite, 1-veined
 Stems terete, usually swollen at joints
 Flowers in panicles, white
 Calyx 5-toothed
 Petals 5, entire or emarginate, clawed
 Stamens 10
 Styles 2, stigmas 2
 Fruit a capsule
 Ovary superior
 Seeds minute, shining black

Galium Mollugo

RUBIACEAE

leaves oblanceolate to linear, sessile
 leaves in whorls, 6-8; 1-veined
 stems square, often barbed
 flowers in panicles, white
 calyx almost or quite obsolete, or 4-toothed if present
 petals 4
 stamens 4
 style 1, stigma 1
 fruit dry, indehiscent
 ovary inferior
 fruits (commonly called seeds) large and prickly, dull brownish-black.

The preceding comparison is self-explanatory and indicates the need for accuracy in the sale of seeds.

DESCRIPTION:

Other points in the description of Gypsophila paniculata are: Perennial; stem erect, 3 ft. or more tall, branched; leaves with a honey-comb-like appearance on

underside; flowers 1/8 in. across, pedicels about 1/4 in. long; calyx with purplish-green veins, scarious-margined; petals alternate with sepals; the 5 stamens opposite calyx lobes longer, and the 5 opposite corolla lobes shorter; stigma somewhat curled at tip.

Gypsophila elegans, a smaller plant with larger flowers occurs in several colors or color varieties as var. rosea, var. alba grandiflora, and var. carminea.

Plate 3 p. 54

Gypsophila (jip-sof'fill-a), Greek name for gypsum-loving, some species preferring limey soil. A very decorative plant for use in bouquets. G. paniculata occurring in the double-flowered form is sold as var. flore-pleno.

Lychnis coronaria Desr.

Mullein-pink
Rose Champion

Lychnis, (Tourn.) Linn. Syst. ed. I. (1735).
coronaria, Desr. in Lam. Encyc. iii. 643.--Europ.;
As. Min.
Agrostemma, Linn. Syst. ed. I (1735) (Agrostema); et. Gen.
ed. I. 135 (1735). = Lychnis, Linn.
coronaria, Linn. Sp. Pl. 436. = Lychnis coronaria.
Coronaria, Linn. Gen. ed. I. 135 (1737). = Lychnis, Linn.
tomentosa, A. Br. in. Flora, xxvi. (1843) 368

DISCUSSION: This plant is commonly offered in seed catalogs under Agrostemma coronaria or Coronaria tomentosa. The genus Coronaria established by Linnaeus in 1737 was

apparently later discarded by him and his later placement of this species was under Agrosterma. Since conservative botanists do not separate Agrosterma from Lychnis, on basis of insufficient ground, the above species is generally placed under Lychnis, and the name therefore commonly accepted is Lychnis coronaria Desr.

DESCRIPTION: Lychnis coronaria Desr.

Biennial or perennial; stem stout, erect, branched, 1-3 ft. high, plant white-woolly throughout; leaves 1/2 - 3 in. long, opposite, ovate to oblong, sessile, clasping, some lower leaves narrowed into short petioles, apex acute, base somewhat cordate; flowers 1-1 1/4 in. across, solitary, terminal, pedicels 1 1/2-2 in. long; calyx 3/4 in. long, 5-toothed, united and more or less campanulate, 10-nerved, 5 very prominent, teeth twisted; petals 5, narrow-clawed or 2 appendaged, blade emarginate to wavy, velvety, glabrous, Aster-purple (31); stamens 10, 5 long and 5 short, opposite and alternate respectively with petals, united and adherent to disk, 1/4-1/2 in. long; styles 5, in star-like arrangement; stigmas round-pointed; ovules many, placentation free-central; fruit a capsule.

Lychnis (lick'nis), Greek for lamp, alluding to the flame-colored petals of certain species. An old garden favorite cultivated for centuries, and recently offered in double-flowered forms.

Plate 2;p53

RANUNCULACEAE. Buttercup family

Adonis aestivalis L.

Pheasant's Eye. Summer Adonis.

Adonis (a-don'is), from mythology for Adonis from whose blood it sprang, according to fable. Annual, red flowers with yellow center. Seldom seen growing in western gardens, as the flower is not outstanding.

Anemone japonica Sieb. & Zucc.

Japanese Anemone

Anemone (an-em'on-nee), classical Greek name. In horticultural varieties multiple sepals often present. The fruit an achene with a long feathery style.

Plate 5 ; p. 56

Delphinium cultorum Voss.

Yellow Larkspur. Delphinium.

Delphinium (dell-fin'i-um), Latin for dolphin, in allusion to flower shape. The delphiniums include one group of horticultural plants in which the original species cannot be clearly defined. Various colors, color combinations, and double forms.

Nigella hispanica L.

Fennel-flower

Nigella, (Tourn.) Linn. Syst. ed. I (1735).hispanica, Linn. Sp. Pl. 584. - Hispan.; Afr. bor.damascena, Linn. Sp. Pl. 584. - Reg. Mediterr.

DISCUSSION: Nigella hispanica and N. damascena are sold interchangeably under the same name or often with mixed seeds. These are two distinct species as the comparative points below indicate:

Nigella hispanica

Commonly called fennel-flower
 Flowers blue, $2\frac{1}{2}$ in. across
 Involucre absent
 Fruit not greatly inflated, conspicuously ribbed, carpels not united at top
 Styles spreading

Nigella damascena

commonly called love-in-a-mist, Devil-in-the-bush.
 flowers white or blue, $1\frac{1}{2}$ in across
 flower surrounded by large finely divided involucre
 fruit greatly inflated, not conspicuously ribbed, carpels united at top
 styles erect

DESCRIPTION: Nigella hispanica L.

Annual; stem somewhat ribbed, cellular looking between ribs, branching, glabrous, $1\frac{1}{2}$ -2 ft. tall; upper leaves sessile, lower petioled, all alternate, "pinnately multifid into linear parts" (3), silvery-looking under lens, 1-3 in. long; flowers 2 in. or more across, solitary or in 2's with leaf near base; sepals 5, petal-like, showy, blue or white, silvery-blue above, underside silvery with prominent green veins spreading palmately

over back, alternate with petals; petals 5, clawed, bifid, blue or silvery, sparsely long-hairy, stamens many and red, spreading to erect, polyadelphous, alternate with and just above petals; styles 8, 1/4-3/4 in. long; fruit capsule-like, large, somewhat inflated, with carpels not joined at the summit, dehiscent at tip; seeds small and black.

Nigella (ny-jell'a), Greek for black, referring to the seeds. Commonly grown. Varieties of this occur in white and purple flowers. Plate 4 ; p. 55

CAPPARIDACEAE. Caper family

Cleome spinosa Jacq.

Giant Spider Flower.

Cleome, Linn. Syst. ed. I (1735)

pungens, Willd. Enum. Hort. Berol. 689. = spinosa.

spinosa, Sw. Obs. 252. = pungens

spinosa, Jacq. Enum. Pl. Carib. 26; Linn. Sp. Pl. ed. II. 939. - Am. Austr.

DISCUSSION: There seems to be much confusion in the use of trade names, as some plants sold under Cleome gigantea are also under C. spinosa and some under a different genus Polanisia. C. spinosa Sw., applying to a different species, is discarded as a later homonym. C. spinosa Jacq., an earlier name than either C. spinosa Sw. or C. pungens Willd., is retained for the species here described.

DESCRIPTION: Cleome spinosa Jacq.

Annual or biennial, pubescent, ill-smelling strong-scented; stem erect, 2-4 ft. tall; leaves alternate, lower long-petioled, palmately compound with 5-7 leaflets, oblong-lanceolate; upper simple, bract-like, with stipule-like spine at base of petiole; flowers long pediceled, solitary or in racemes, rose-purple to white; sepals 4; petals 4, 1 in. long, clawed, entire; stamens 6, 2-3 in. long, bluish-purple; pistil superior on a gynophore, with gland at base, placentation parietal; fruit a linear capsule, on stipe 2-6 in. long.

Cleome (klee-o'me), of unknown origin. Thrives in sunny location. Undesirable for bouquets due to the pungent odor.

CRUCIFERAE. Mustard family

Alyssum maritimum Lam.

Sweet Alyssum. Snowdrift.
Carpet-of-snow.

Alyssum, Tourn. ex Linn. Syst. ed. I. (1735).

maritimum, Lam. Encyc. i. 98.-Europ.

Lobularia, Desv. Journ. Bot. iii. (1814) 162.=Alyssum,
Tourn.

maritima Desv.

DISCUSSION: If Alyssum and Lobularia are separated as two genera the basis of separation is the following:

Alyssum

Yellow flowers
 Stellate pubescence
 Petals entire or retuse

Lobularia

white flowers
 forked or simple
 hairs
 petals entire

Many botanists do not consider these points sufficiently important to justify the establishment of two genera; in that case Alyssum being the earlier name must be the recognized generic name.

In this paper the practice of following Alyssum is credited.

DESCRIPTION: Alyssum maritimum Lam.

Perennial, very fragrant, forked and simple hairs; stem 6-12 in., erect to spreading over ground; leaves alternate, entire, linear to lanceolate; flowers small, in racemes which lengthen during flowering; sepals 4, deciduous; petals 4, entire, white; stamens 6, filaments sometimes toothed or appendaged; pistil 1, superior; fruit glabrous; seeds wingless.

Alyssum saxatile L. (Linn. Sp. Pl. 650.-Europ.)

Perennial, herbage grayish, stellate pubescent; stems erect, 8-12 in; leaves 3-4 in. long, alternate, oblanceolate, entire, acute or obtuse; flowers small, in racemes; sepals 4, soon deciduous; petals 4, entire or retuse, golden-yellow; stamens 6, 4 long and 2 short,

filaments not toothed, 2 glands at base; pistil 1, superior; fruit glabrous; seeds wingless.

Var. compactum, commonly called Dwarf-gold, is abundantly used in rockeries and borders.

Alyssum (a-liss'some), from classical Greek for madness, supposed to stop hydrophobia. Used extensively for borders, bouquets, and sprays.

Lobularia (lob-you-lair'i-a), from Latin for little lobe.

Erysimum asperum (Nutt.) DC

Siberian Wallflower

Erysimum, (Tourn.) Linn. Syst. ed. I (1735); Gen. ed. I. 198 (1737).

asperum, DC. Syst. ii. 505 (1821). - Am. bor.

Cheiranthus, Linn. Gen. ed. I. 195 (1737)

Allionii, Hort. ex. Bois in Journ. Soc. Nat. Hort. France, 1912, Ser. IV. xiii. 184, in obs., nomen; et in Rev. Hort. 1913, n.s. xiii. 443: Erysimum Marshallii.

DISCUSSION: Erysimum asperum and Cheiranthus Allionii are sold interchangeably, with an emphasis in seed catalogs on the latter, the technical difference being that Cheiranthus has cotyledons accumbent (the edges against the radicle) and Erysimum cotyledons incumbent (the back to the radicle).

While most botanists agree that there is insufficient generic distinction, the name Erysimum is retained temporarily through long usage.

In Bailey's (3) discussion occurs in his description of Erysimum the following:

"differing technically from Cheiranthus in the incumbent rather than accumbent cotyledons; these characters are not constant, however, and the two genera should be merged, particularly as the species overlap geographically in the Old World; the American species of Erysimum have been named in Cheiranthus by certain authors, but this disposition is not generally accepted. The Erysimums usually have more angular siliques than Cheiranthus. It is probable that the two genera are represented in cult. by hybrids. Some 90-100 species of Erysimum are recognized."

DESCRIPTION: Erysimum asperum (Nutt.) DC.

Perennial, entirely covered with appressed simple or forked hairs; stem erect, 12-15 in. tall, branching; leaves mostly basal or 4-6 in. up flower stalk, alternate, lanceolate to narrow-lanceolate, acute, dentate; flowers in racemes or spike-like inflorescences; sepals 4, sac-like at base, acute, alternate with petals; petals 1/2-3/4 in. long, spoon-shaped, long-clawed and slender, brilliant orange; stamens 6, 4 long with curved anthers, 2 short with erect anthers; pistil 1, superior, placentation parietal; fruit 1-2 $\frac{1}{2}$ in. long, thickish.

Erysimum (e-riss'i-mum), from the Greek to draw blisters. A very showy garden favorite.

Matthiola incana R. Br.

Stock. Gilliflower.

Matthiola (mathy'o-la), named for Peter Andrew Matthiola, Italian writer on plants. These plants occur in many color forms, single, double, and many times double varieties. The double varieties may be retained by removing the single or "wild" pods during the flowering season.

SAXIFRAGACEAE. Saxifrage family

Heuchera sanguinea Engelm.

Heuchera (hew'ker-a), named for Johann Heinrich Von Heucher, a German botanist. A striking perennial clump-forming plant used in rockeries.

LEGUMINOSAE. Pea family

Lathyrus latifolius L.

Everlasting or Perennial Pea

Lathyrus (la'thi-russ), ancient Greek name for some leguminous plants. Showy, peduncles many-flowered. Often an escape from gardens. Plate 5; p. 56

GERANIACEAE. Geranium family

Tropaeolum majus Linn.

Nasturtium

Tropaeolum (tro-pee'o-lum), from the Greek for trophy, in allusion to the shield-shaped leaves. One of the most widely grown ornamentals, with many color forms, in both single and double varieties, also climbing and dwarf strains. The past year (1936) has brought to the market six new sweet-scented double forms. Easily propagated by seed and cuttings.

EUPHORBIACEAE. Spurge family

Euphorbia marginata Pursh.

Snow-on-the mountain

Euphorbia, Linn. Gen. ed. I. 152 (1737).
marginata, Pursh, Fl. Am. Sept. ii. 607. - Am. bor.
variegata, Sims. Bot. Mag. t. 1747. = marginata.

DISCUSSION: Euphorbia marginata must be retained as the correct specific name since E. variegata is not only a later synonym, but also apparently purely a horticultural name.

DESCRIPTION: Euphorbia marginata Pursh.

Annual; stem 3/4-2 ft. tall, erect, branching, somewhat pubescent; leaves 1-3 in. long, opposite, sessile,

ovate-oblong, entire, margin of upper surface white, petal-like; flowers axillary or in cymes; involucre white, usually pubescent, with glands having white petal-like appendages; calyx and corolla absent; staminate flowers numerous in involucre, each with 1 stamen jointed on its pedicel, subtended by a bract; one pistillate flower per involucre, borne on a lengthening pedicel; styles 3; ovary 3-loculed, 1 ovule in each; fruit a capsule, $\frac{1}{4}$ in. in diameter, depressed-globose, sometimes pubescent.

Euphorbia (you-for'bi-a) from the Greek, of uncertain significance as to application. Popular garden plant.

BALSAMINACEAE. Balsam family

Impatiens Balsamina L.

Garden balsam. Touch-me-not.
Snap-weed. Jewel weed.

Impatiens (im-pay'ti-enz), from the Latin for impatience, alluding to the bursting of the pods. The flowers are sessile on the succulent stem, and come in single and double forms of many colors.

CISTACEAE. Rock-rose family.

Helianthemum nummularium (L.) Mill.

Rock or Sun rose.

Helianthemum, Tourn. ex. Hall. Enum. Stirp. Helv.: 358
(1742).Chamaecistus, Mill. Gard. Dict. ed. viii. n. 1. =
vulgare.mutabile, Moench, Meth. 284mutabile, Wilk. Ic. Pl. Hisp. ii. 115 = vulgare.nummularium, (L) Mill. Gard. Dict. ed. VIII. n. 12.nummularium, Guss. Cat. Hort. Boccad. 30. = rebellum.vulgare, Gaertn. Fruct. :. 371. t. 76. - Europ.vulgare, Guss. ex. Nym. Consp. 74

DISCUSSION: Helianthemum nummularium, a Linnaean (11) and (14) name goes back to the original nummularium that was yellow, but has a number of color forms including "rose changing to lilac or nearly white" (2) which is mutabile; other color forms have also been segregated and named horticulturally under nummularium, but botanists do not recognize these as sufficiently distinct to be separated as a species.

DESCRIPTION: Helianthemum nummularium (L.) Mill.

Perennial; stem 12 in. tall, erect or ascending; leaves short-petioled, $\frac{1}{2}$ -2 in. long, opposite or upper sometimes alternate, ovate to linear-lanceolate, flat, sometimes white woolly beneath; stipules present, longer than the petioles; flowers 1 in. across, in racemes; sepals 5, the 2 outer shorter than the 3 broadly oval

inner ones; petals 5, colors various; stamens many; pistil superior, placentae 3, parietal; style 1; stigma 3-lobed; fruit a capsule.

Helianthemum (he-li-an'thee-mum), from the Greek for sun and flower. Used extensively for borders and rockeries. Offered in various colors and double varieties.

LOASACEAE. Loasa family.

Mentzelia Lindleyi Torr. & Gray.

Mentzelia, Plum. ex Linn. Gen. ed. I. 338 (1737).

Lindleyi, Torr. & Gray, Fl. N. Am. i. 533 (1840).-Calif.

Bartonia, Sims, Bot. Mag. t. 1487 (1804).

aurea, Lindl. in Bot. Reg. t. 1831.= M. Lindleyi.

DISCUSSION: The genus Bartonia is disqualified by an earlier homonym in GENTIANACEAE; but the plant described above is still being offered in most seed catalogs under the name Bartonia aurea.

The species aurea is also outlawed by a previous homonym, therefore instead of Bartonia aurea, the name must be Mentzelia Lindleyi.

In transferring Bartonia aurea to the genus Mentzelia the specific name must be discarded because of an earlier Mentzelia aurea applied to a different species, whereby Lindleyi as the next in line must be used, and the name becomes Mentzelia Lindleyi.

DESCRIPTION: Mentzelia Lindleyi Torr. & Gray.

Annual; stem 1-3 ft. tall, branched, younger stems very hairy, older stem-parts very silvery scale-like with silvery barbed hairs; leaves $\frac{1}{4}$ -4 in. long, alternate, pinnately cut or toothed, long hairs on margins and mid-veins, shorter elsewhere; flowers 1-2 $\frac{1}{2}$ in. across, solitary or in cymes, with leafy bract at base of each; sepals 5, pubescent, adherent to receptacle and ovary, apex acuminate and long hairy, alternate with petals; petals 5, broad and rounded, apex sharp-pointed, base inserted on calyx, bright orange-yellow; stamens 1/4-3/4 in. long, anthers spiral, more or less fascicled and inserted inside the calyx on the receptacle; pistil inferior, 1-loculed; style simple, thread-like, and slightly 3-ridged; fruit a capsule, 1-2 in. long, dehiscent, placentae 3, parietal, ovules many.

Mentzelia (ment-zee'li-a), named for Christian Mentzel, a German botanist.

ONAGRACEAE. Evening Primrose family

Clarkia elegans Dougl.

Clarkia

Clarkia (clark'i-a), named for Captain Wm. Clark of Lewis and Clark fame. Domestication of six or more

species of native Clarkias of the West Coast and Rocky Mountains has given us the many color forms and double varieties. The pure white Clarkia is Clarkia elegans var. alba.

Godetia amoena (Lehm.) Lilja.

Farewell-to-spring
Godetia

Godetia, Spach, Hist. Veg. Phan. iv. 386 (1836).
amoena. Lilja, in Linnaea, xv. (1841) 265.
decumbens, Spach, Hist. Veg. Phan. iv. 388. = Oe.
decumbens.
grandiflora, Lindl. Bot. Reg. (1841) Misc. 61 =
Oe. Whitneyi.

DISCUSSION: Godetia was originally included under the genus Oenothera, but Spach. separated them mainly on the anther attachment (Oenothera versatile, and Godetia basifixed). Some botanists still include Godetia in Oenothera, but American botanists in most part separate them. There is considerable variation in habit, color, and markings, especially in the cultivated Godetias, and to some extent in the native state.

The species Godetia rubicunda, G. vinosa, G. Schwaminii, G. grandiflora, are included under color forms and horticultural varieties and are not true botanical names.

Godetia decumbens and G. Romanzovii, both distinct

species and both grown from seeds originally collected on the Northwest coast of America (21) have long been cultivated, but at present are not known in the wild state.

DESCRIPTION: Godetia amoena (Lehm.) Lilja.

Slender annual; stem 1-2 ft. tall, erect scatteringly covered with curved, fine white hairs; leaves $\frac{1}{2}$ - $2\frac{1}{2}$ in. long, lanceolate, short pubescent; flowers in spikes, 2 in. across; calyx 4-lobed, splitting or pushed to one side with flower opening; petals 4, obovate, truncate-retuse, the color variable, from white to a solid rose or amaranth purple, (31), many with a splotch of color in the center; stamens 8, those opposite the petals shorter, somewhat pubescent, dorsal surface purplish; style 1; stigma 4-lobed, white, with numerous glandular hairs; ovary 4-loculed, inferior; fruit a capsule, 1 in. long; placentation axile.

Godetia (go-dee'she-a), named for C. H. Godet, a Swiss botanist. Native species occur in Oregon.

Plate 3 ; p.54

UMBELLIFERAE. Carrot family

Eryngium amethystinum L.

Sea Holly

Eryngium (er-rin'ji-um), Greek for thistle, which some of the plants suggest. Sometimes the common name

Globe-thistle is given it, but is misleading because this applies to the genus Echinops, of COMPOSITAE.

PRIMULACEAE. Primrose family.

Anagallis linifolia Linn.

Anagallis, (Tourn.) Linn. Syst. ed. I. (1735); Gen. ed. I. 43 (1737).
grandiflora, Andr. Repos. t. 367. = linifolia.
linifolia, Linn. Sp. Pl. ed. II. 212. - Europ.

DISCUSSION: Anagallis grandiflora is apparently not recognized by any present authorities, nor even included as a variety. The original description of A. grandiflora as reported in the Botanists Repository (1), describes the plant as having scarlet flowers and elliptic leaves. The name accepted for the plant described below, by botanists is A. linifolia.

DESCRIPTION: Anagallis linifolia Linn.

Biennial or perennial; stem 1-1½ ft. tall, erect, 4-angled; leaves 1 in. long, opposite, sessile, linear to linear-lanceolate, acute, sometimes revolute-margined; flowers ¾ in. across, solitary in leaf-axils; calyx deeply 5-parted, about ½ as long as corolla; corolla 5-parted, blue or pinkish, the blue corollas often reddish on the outside; stamens 5, pubescent, on base of corolla tube, and opposite lobes; style and stigma 1; ovary

superior; placentation free-central; fruit a dehiscent circumscissile capsule.

Anagallis (a-na-gal'lis), from the Greek for delightful. Flowers close at night or in shade.

POLEMONIACEAE. Phlox family.

Phlox Drummondii Hook

Phlox (flocks), from the Greek flame, in allusion to some flower forms. A popular garden annual or perennial, occurring in many color forms and varieties.

HYDROPHYLLACEAE. Water-leaf family.

Phacelia campanularia Gray.

Bluebell. Phacelia.

Phacelia, Juss. Gen. 129 (1789).

campanularia, A. Gray, Syn. Fl. N. Am. ii. 1. 164, -
Calif.

minor, Thellung in Ber. Bayer. Bot. Ges. xiv. 79 (1914)
Fedde, Repert. xiv. 376: Whitlavia minor.

Whitlavia, A. Gray, in Proc. Am. Acad. x. (1875) 321. -
Calif.

DISCUSSION: This plant is sometimes listed as Phacelia Whitlavia, also as P. minor. The name Whitlavia is outlawed by the rule of priority; minor is valid, but Asa Gray (13) established another species campanularia in the sub-genus Whitlavia, this species applying to the plant described below. Since its recognition as a distinct

species is a matter of personal opinion the above plant may be correctly designated by either minor or campanularia.

DESCRIPTION: Phacelia campanularia Gray.

Annual; stem 6-12 in. tall, branched, finely pubescent; leaves 1-2 in. long, alternate, ovate, dentate, glandular pubescent; flowers in racemes; calyx 5-parted, approximately $\frac{1}{4}$ in. long, hirsute and glandular; corolla $\frac{3}{4}$ -1 in. across, 5-lobed, campanulate, bright smalt-blue (31) with white spot near base of each lobe, outer surface hairy; stamens 5, attached near base of corolla; filaments orchid (31) with light yellow, granular anthers; style 1, 2-cleft, hairy, white; fruit a 1-loculed capsule, glandular-hairy; seed-coat pitted, honeycomb-like.

Phacelia (fa-see'li-a), from the Greek for a bundle, in allusion to the flower arrangement. Striking plant for rockeries or borders. Plate 3 ; p. 54

BORAGINACEAE. Borage family.

Cynoglossum amabile Linn.

Chinese forget-me-not.

Cynoglossum (sin-o-gloss'um), from the Greek hound and tongue, in allusion to the roughish leaves. Blue is the common color form, but a recent development has placed a pink variety on the market.

SOLANACEAE. Nightshade family.

Physalis Alkekengii Linn.

Physalis Franchetii Mast.

Physalis, Linn. Syst. ed. I (1735).

Alkekengi, Linn. Sp. Pl. 183.--Europ.; Japon.

Francheti, Mast. in Gard. Chron. (1894) ii 434
et 441, fig. 57; et ex Gartenfl. xlv.
(1895) 458. - Japon.

DISCUSSION: Physalis Alkekengii and Physalis Franchetii seem to be sold interchangeably under the same common names, but according to Bailey (4) and Hegi (14) they are two different species with the following unlike characteristics:

Physalis Alkekengii

(Strawberry tomato,
Winter cherry, or
Bladder cherry.)

Pubescent
fruit blood-red in autumn
perennial
calyx about as long as wide,
not angled.

Physalis Franchetii

(Chinese Lantern Plant)

glabrous
fruit brilliant orange-red
annual, biennial, some-
times perennial
calyx longer than wide,
somewhat angled.

DESCRIPTION: Physalis sp.

Annual or perennial; stem 2 ft. tall, with woody base; leaves alternate, simple ovate, often with 2 leaves from 1 node; flowers axillary; calyx 5-toothed or cleft, permanently enclosing the berry, becoming large and bladder-like; corolla rotate to campanulate; stamens 5;

style slender; stigma 2-lobed; fruit berry-like.

Physalis (fiss'a-lis), from the Greek for bladder, in allusion to the inflated calyx. Novelty plant, striking and showy. Plate 2 ; p. 53

Salpiglossis sinuata Ruiz. & Pav.

Painted Tongue

Salpiglossis (sal-pi-gloss'is), from the Greek for tube and tongue, in allusion to corolla form and style appearance. Popular garden plant offered in many color forms and varieties. Plate 6 ; p. 57

Schizanthus retusus Hook.

Butterfly flower.
Fringe flower.

Schizanthus (sky-zan'thus), from the Greek, for split and flower, referring to the corolla. Sometimes called Poor man's-orchid.

SCROPHULARIACEAE. Figwort family.

Alonsoa Warscewiczii Regel.

Mask flower

Alonsoa, Ruiz and Pav. Syst. Veg. 150 (1798).

compacta, Hort.

grandiflora, Hort.

Mutisii, G. Don. Gen. Syst. iv. 513.

Warscewiczii, Regel, in Gartenfl. iii. (1854) 211. t. 91. - Peruv.

DISCUSSION: Alonsoa compacta and A. grandiflora are horticultural forms and not botanical names; while A. Mutisii is discarded on the basis of a previous homonym.

DESCRIPTION: Alonsoa Warscewiczii Regel.

Stem 2 ft. tall, erect, branching, glabrous, somewhat 4-ridged or angled; leaves $\frac{1}{4}$ -2 in. long, opposite, serrate, ovate, cordate at base; flowers in racemes; calyx 5-parted, slightly glandular-hairy; corolla "tube almost none, flat-rotate, corolla turned upside down by torsion of pedicel, bringing the lower lobe uppermost. Scarlet-red, upper lip 4-5 times longer than calyx" (3); stamens 4; anthers versatile, curved; ovary superior; fruit a capsule; seeds winged.

Alonsoa (a-lon-zo'a), named for Alonzo Zanoni, a Bogata official. Runs into many cultivated varieties.

Digitalis purpurea Linn.

Foxglove

Digitalis, (Tourn.) Linn. Syst. ed. I (1735).

purpurea, Linn. Sp. Pl. 621.-Europ.

gloxiniaeflora, Hort.

gloxinioides, Carr. in Rev. Hort. (1872) 80.

DISCUSSION: Digitalis gloxiniaeflora and D. gloxinioides are considered by most botanists as horticultural varieties of D. purpurea. D. purpurea var. gloxiniaeflora (4) is listed as having a more robust habit, longer racemes,

larger flowers, and nearly always more strongly spotted, than typical Digitalis purpurea.

DESCRIPTION: Digitalis purpurea Linn.

Biennial, with leaves in a basal cluster the first year; stem 3-5 ft. tall, erect, pubescent; lower leaves 5-15 in. long, ovate, narrowed into long petiole, veins conspicuous; upper leaves smaller; flowers in 1-sided racemes; calyx 5-lobed, 1/4-3/4 in. long; corolla 1-2 in. long, 2-lipped, inflated on lower side, white to purple, often spotted; stamens 4, epipetalous, shorter than corolla tube; pistil superior; style 1; stigma 2-lobed; fruit a 2-loculed capsule; seeds escaping by pores.

Digitalis (di-ji-tay'lis), Latin for the finger of a glove, in allusion to the shape of the corolla. Common in Western Oregon.

Pentstemon barbatus Roth.

Beard Tongue

Pentstemon, Mitch. in Act. Phip. Med. Acad. Nat. Cur. viii. (1748) App. 214 (Penstemon).
barbatus, Roth, Catalect. fasc. iii. 49; Nutt. Gen. Am. ii. 53. - Am. bor. occ.

DISCUSSION: Pentstemon barbatus is offered in most seed catalogs as Chelone barbata, and listed in a number of books as a synonym. Pentstemon and Chelone are generally

recognized as two distinct genera with the following characteristics as a means of separation:

<u>Pentstemon</u>	<u>Chelone</u>
Seeds wingless	Seeds winged
Sterile stamen equal in length to fertile ones	sterile stamen shorter
Anthers sometimes woolly	anthers always woolly

Since the plant in discussion fits the characteristics of Pentstemon rather than Chelone, it is described as Pentstemon barbatus.

DESCRIPTION: Pentstemon barbatus Roth.

Perennial; stem $2\frac{1}{2}$ -3 ft. tall, erect, branching from base, slightly pubescent; leaves opposite, surface slightly pitted; lower leaves short-petioled, oblong-lanceolate; upper leaves sessile, lanceolate, entire, acute; flowers paniced; calyx 5-parted, each lobe folding one over the other; corolla 1 in. long with elongated tube, 2-lipped, lower lip bearded with bright yellow shining hairs; stamens 5, 4 fertile, 1 sterile, glabrous; style thread-like; fruit a capsule; seeds many, wingless.

Pentstemon (pent-ste'mon), from the Greek for 5 stamens, which the genus has, although one is sterile. Chelone (kel-lo'nee), Greek for tortoise, the corolla resembling a turtle's head.

RUBIACEAE. Madder family

Galium Mollugo L.

"Baby's-breath". Wild madder.
White or Great-Hedge Bedstraw.

Galium, Linn. Gen. ed. I. 24 (1737).

Mollugo, Linn. Sp. Pl. 107. - Europ.; As. temp.

Description and discussion listed under Gypsophila paniculata on page 13.

Galium (gay'li-um), from the Greek, supposed to curdle milk. Plant used for a cover plant, rockeries, and borders.

VALERIANACEAE. Valerian family

Centranthus ruber DC.

Red Valerian
Jupiter's Beard

Centranthus, DC. Fl. Fr. iv. 238 (1805).

ruber, DC. Fl. Fr. iv. 239. - Europ.; Syria.

DISCUSSION: Centranthus ruber is offered in several seed catalogs as Valeriana rubra, and listed in some books as a synonym. The main differences between these two genera are:

Centranthus

Stamen 1
Corolla spurred

Valeriana

stamens 3
corolla not
spurred

A glance at these two plants gives a similar impression, as in general characters there is a close resemblance.

DESCRIPTION: Centranthus ruber DC.

Perennial, somewhat woody at base; stem 2-3 ft. tall, glaucous, smooth, rather bushy; leaves 2-4 in. long, opposite, sessile, entire, ovate-lanceolate, acute to acuminate; flowers in dense terminal clusters; calyx cut into numerous narrow pappus-like divisions; corolla 5-parted, slender-tubed with spur at base, rose (31); stamen 1, epipetalous; style 1; fruit 1-loculed, crowned with a reddish pappus-like crest.

Centranthus (sen-tran'thus), Greek for spurred flower. Flowers much used in bouquets. The color variety albus is offered.

CAMPANULACEAE. Bellflower family.

Campanula rapunculoides L.

Bellflower. Harebell.
Bluebell.

Campanula rotundifolia L.

Harebell. Bluebell.
Bluebells of Scotland.

Campanula (Kam-pan'you-la), from Latin for little bell. Plants used extensively for borders and rockeries.

Plate 6 ; p.57

COMPOSITAE. Composite or Sunflower family.

Coreopsis tinctoria Nutt.

Tickseed

Coreopsis, Linn. Gen. ed. I. 263 (1737).

tinctoria, Nutt. in. Journ. Acad. Philad. ii. (1821)
114.- Am. bor.

Calliopsis, Reicht. Ic. et Descr. Pl. t. 10 (1824).

bicolor Hort.

elegans Hort.

marmorata Hort.

DISCUSSION: Calliopsis was separated from Coreopsis on a small point not now considered by any botanist as sufficient for generic distinction. Therefore, Calliopsis as listed in seed catalogs botanically is Coreopsis.

Calliopsis bicolor, elegans, and marmorata are all horticultural varieties or species not recognized as distinct botanical units.

DESCRIPTION: Coreopsis tinctoria Nutt.

Annual, glabrous; stem 1-3 ft. tall, branching; leaves 1-6 in. long, opposite, entire to finely serrate, acute-acuminate; flower heads, 3/4-2 in. across, in loose panicles; involucre bracts in 2 series, apex acute to obtuse, outer series scarious-margined; heads 8-rayed, corolla of ray-flower lobed, yellow to parti-colored [cadmium yellow (31) to maroon-carmine]; disk flower brownish-purple; "achenes thinnish, somewhat incurved, wingless or barely margined; pappus none or an obscure

border" (3).

Coreopsis (ko-ree-op'sis), from the Greek for bug, alluding to the shape of the fruit. A very popular cut flower, occurring in single and double varieties and several color forms.

Tagetes erecta L.

African marigold

Tagetes patula L.

French marigold

Tagetes (tah-gee'teez), of uncertain origin, but possibly for Tages, an Etruscan god. T. erecta, with yellow or orange heads, some forms having rays long-clawed or quilled; long thought to be a native of Africa, but now known to have originated in Mexico. T. patula, marked with red, occurs in many horticultural forms, ranging from yellowish to nearly all red with some double forms; also dwarf varieties used in borders. The common name marigold also used for the genera Calendula, Bidens, Caltha, Dimorphotheca.

Gaillardia pulchella Foug.

Gaillardia aristata Pursh.

Gaillardia (gayl-lar'di-a), named for Gaillard de

Marentonneau, a French botanist. The striking plants, G. aristata (yellow) and G. pulchella (yellow to reddish-orange at tips) are extensively used for gardens and in bouquets. The genus is native of the Western United States. Plate 6 ; p. 57

Dimorphotheca annua Less.

Dimorphotheca aurantiaca DC.

African Golden Daisy
Cape Marigold

Dimorphotheca (dy-more-fo-thee'ka), from the Greek for "two-formed" achenes, a technical fruit character.

D. annua has rays white above, purple or discolored beneath, and D. aurantiaca has rays orange-yellow or variously colored. Flowers close at night. Plate 6 ; p. 57

Emilia flammea Cass.

Tassel-flower
Flora's Paintbrush

Emilia, Cass. in Bull. Soc. Philom. (1817) 68; et in Dict. Sc. Nat. xiv. 405 (1819).
coccinea, Sweet, Hort. Brit. ed. III. 382. = sagittata.
sagittata, DC. Prod. VI. 302. = flammea
flammea, Cass. in Dict. Sc. Nat. xiv. 406. - Ind. or.;
Ins. Philip.

DISCUSSION: Emilia is the distinct genus as now understood by botanists, Cacalia being only a section under a different

genus, Senecio.

Emilia coccinea is discarded as a horticultural variety, and with the impossibility of going back to the original description the reason for the abandonment of sagittata in favor of flammea, cannot definitely be determined, but appears to be based upon an earlier homonym. According to the best authorities (4,8,9,14,17) flammea is retained rather than sagittata, thus accepted in this paper.

DESCRIPTION: Emilia flammea Cass.

Annual; stem 2-2½ ft. tall, branched and spreading; leaves ¾-6 in. long, alternate, upper sessile, auriculate; lower tending to be wing-petioled, apex acuminate; flowers in loose corymbs, rayless, involucre in 1 series, various colored; calyx a pappus of many soft capillary bristles; corolla 5-lobed, tubular; stamens 5, epipetalous, syn-genesious; stigmas 2, long spreading; ovary inferior; fruit an achene, 5-angled, ciliated.

Emilia (e-mil'i-a), of unknown origin. A very colorful garden plant.

Echinops Ritro L.

Small globe thistle.

Echinops (ek'i-nops), from Greek meaning like a hedgehog, alluding to the spiny heads. The inflorescence is thistle-like with metallic-blue bracts.

SUMMARY

The need for correct botanical names of ornamental plants is discussed.

The method of procedure is treated from the standpoint of securing samples, growing, the preparation of herbarium specimens and plants for study.

A list of all plants and their respective families studied is given, also a comparative table giving the names as listed in seed catalogs and those botanically correct.

Description and discussion of plants of disputed nomenclature are given in phylogenetic order, also points of interest of these and of others studied.

Several plants studied are illustrated.

SEED CATALOGS CONSULTED

1. Aggeler & Musser Seed Co., Los Angeles, Calif.*
2. Armstrong Nurseries, Ontario, Calif.
3. Barber, Chas. F., Troutdale, Oregon.
4. Bobbink & Atkins, Rutherford, N. J.
5. Burpee, (W. Atlee Burpee Co.) Philadelphia, Pa.*
6. Butzer, J. J., Portland, Oregon.*
7. California Nursery Co., Niles, Calif.
8. Clause Inc., Bretigny-Sur-Orge, France.
9. Colorado Seed Co., Denver, Colo.
10. Condon Bros., Seedsman, Rockford, Illinois.
11. Dreer's Garden Book, Philadelphia, Pa.*
12. Ellis Bulb Gardens, Canby, Oregon.
13. Ferry-Morse Seed Co., San Francisco, Calif.*
14. Fraser & Son Ltd., Pasadena, Calif.
15. Germain's Calif. Gardening, Los Angeles, Calif.*
16. Gill Bros. Seed Co., Portland, Oregon.
17. Grand Junction Seed Co., Grand Junction, Colorado.*
18. Harris Co. Inc., Joseph, Coldwater, N. Y.
19. Haven Seed Co., Santa Ana, Calif.*
20. Henderson & Co., New York, N. Y.
21. Herbst Brothers Inc., New York, N. Y.
22. Lagomarsino & Sons, Sacramento, Calif.
23. Lilly's Seeds (Chas. H. Lilly Co.,) Seattle, Wn.
24. Maule, Henry, Philadelphia, Pa.

25. Michell, Co., Henry F., Philadelphia, Pa.
26. Payne, Theodore, Los Angeles, Calif.
27. Portland Seed Co., Portland, Oregon
28. Purdy, Carl, Ukiah, Calif.
29. Rennie Seeds, Toronto, Canada.
30. Robert Buist Co., Philadelphia, Pa.
31. Robertson, Ltd., Dublin.
32. Rogers Bros. Seed Co., Chicago, Ill.
33. State Nursery & Seed Co., Helena, Montana.
34. Stark Bros. Nurseries, Louisiana, Mo.
35. Steele's Pansy Gardens, Portland, Oregon.
36. Stokes & Co., Inc., Philadelphia, Pa.
37. Storrs & Harrison Co., Plainessville, Ohio.
38. Stump & Walter Co., New York City, N. Y.
39. Thomas J. Grey Co., Boston, Mass.
40. Vaughn's Seed Store, Chicago, Ill.

* Contributed seed samples.

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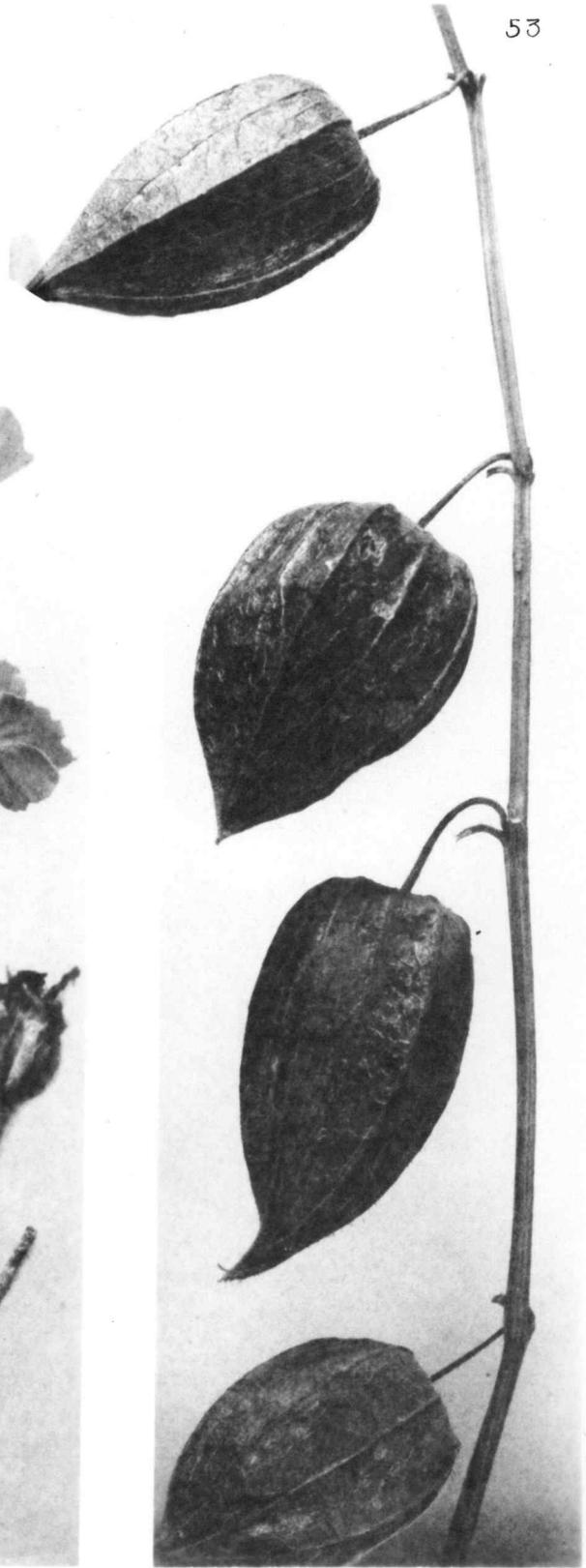
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Phalaris arundinacea L.



Lychnis coronaria Desr.

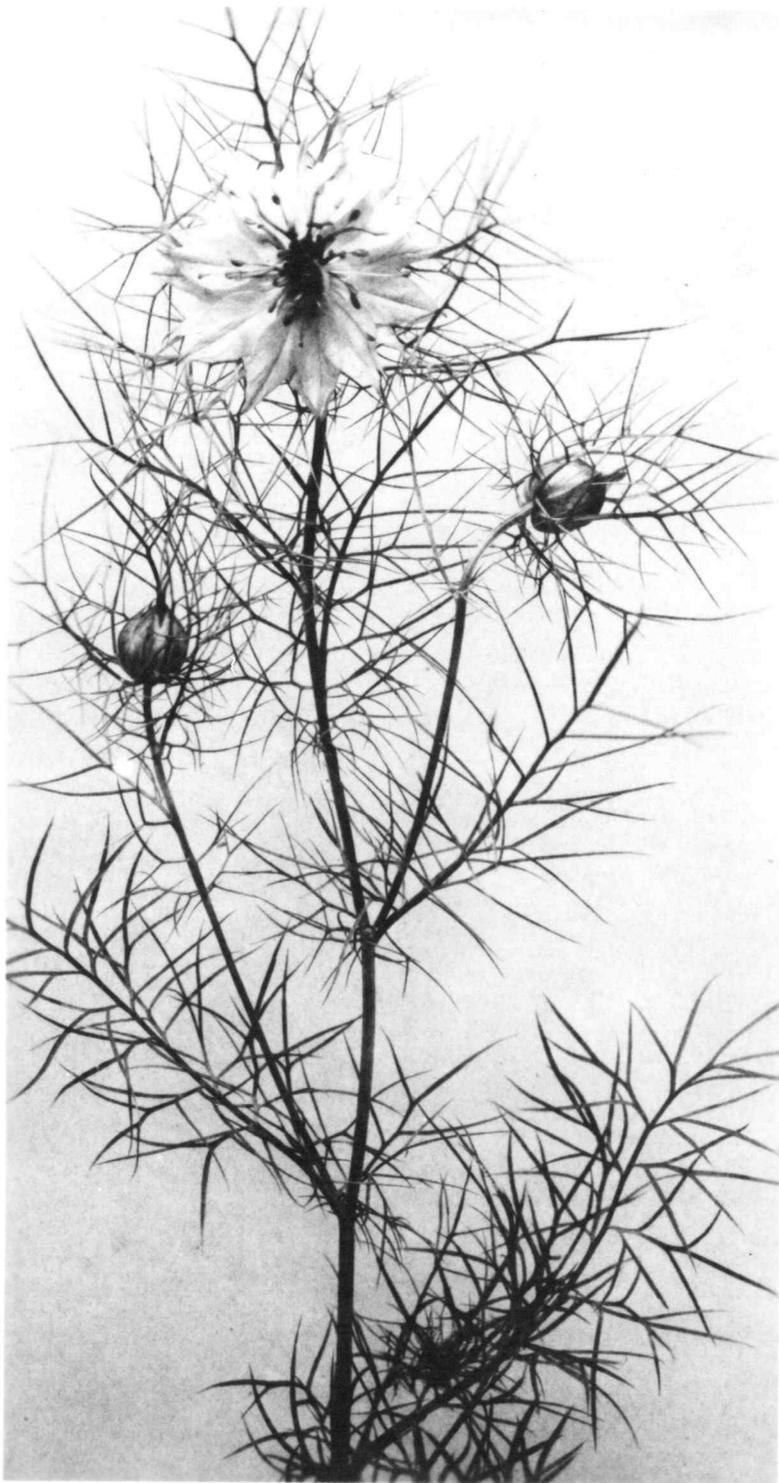


Physalis Franchettii L.



a. *Godetia amoena* (Lehm.) Lilja
b. *Portulaca grandiflora* Hook.

c. *Phacelia campanularia* Gray
d. *Gypsophila elegans* Bieb.



Nigella hispanica L.



Anemone japonica Sieb. and Zucc. *Lathyrus latifolius* L.



a. *Campanula rotundifolia* L.

c. *Salpiglossis sinuata* R. and P.

b. *Dimorphotheca annua* Less.

d. *Gaillardia pulchella* Foug.