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JULY 1930

The American Horticultural Society

Devoted to the popularizing of all phases of Horticulture: Ornamental Gardening, including Landscape Gardening and Amateur Flower Gardening; Professional Flower Gardening and Floriculture; Vegetable Gardening; Fruit Growing and all activities allied with Horticulture.

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The National Horticultural Magazine

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Contributing Editors

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JULY, 1930.

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In this issue we come to the first of the illustrations of the house leeks of which more are to follow until we have a fair representation of the more significant types. The plants from which these pictures were taken were all purchased in the United States and are used because the plants from the Correvon collection are still too small to show their proper character, although most of them are growing apace. The text of M. Correvon's book will be continued in the next issue and may run on into January, 1931, but in any case the illustrations will be continued until our readers have the complete files. The emphasis for this issue is placed, therefore, rather upon the planting arrangement than the identity of the species illustrated. Apparently most visitors to the garden have seen sempervivums only in isolated clumps or tufts making little showing and so are surprised at the beauty that may be had from the use of the smaller species as carpets on rocky ledges with isolated large specimens to augment the scale.

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David Fairchild

The Gold Coast Jasmin .

[See page 113]

The Gold Coast Jasmin

By DAVID FAIRCHILD

What is there about the fragrance of the jasmin, I wonder, which has made it a favorite throughout the whole world. In so many languages the sound of the word *jasmin*, or something approaching it, brings to the mind of the listener the memory of a fragrance full of romance, perhaps the face of some loved one, certainly some scene filled with beauty and charm. To me the word is associated with early days in Sorrento and Capri, with Persian gardens that I have seen, with India and tropical gardens, with walled gardens in Morocco, with the Dutch East Indies and its "Gambelang," and most of all with moonlight scenes in our garden on Biscayne Bay in south Florida.

There are many species of *jasmin*. We have in Florida in common culture five species and Mrs. Southerland has recently listed twenty plants bearing the name of "Jasmine" here, though not all *jasmines* to the botanist. Bailey names fifteen true *jasmines* and Nicholson gives descriptions of eighteen. The genus is said to have in it 170 tropical and subtropical species, according to Willis, although of these there seem to be only four in cultivation in Ceylon according to Macmillan's *Tropical Gardening*.

Sometimes I have wondered why more of these fragrant-flowered climbers have not come into cultivation in the tropics but on reflection I believe it is because there are so many other fragrant, flowering plants in the tropics that no demand for another has seemed apparent.

Here in south Florida a situation has come about which differs from all the other situations existing under the coconut palms with which I am familiar. Here there are thousands of home gardens where a wealth of fragrant flowering shrubs are desired

and where the soil conditions are entirely different from those in almost all other tropical regions. Here there is a demand for flowering fragrant shrubs and vines which have not only flowers that scent the air with just the right kind and abundance of fragrance—not too much nor too little—but species with the necessary vigor and ability to grow and maintain a satisfactory foliage in soil which is strongly impregnated with lime.

To those who come to south Florida from the North where liming is a common practice and acid soils are perhaps as common as neutral soils, the conditions are hard to understand, for almost every type of soil here is quite decidedly alkaline in reaction. The question is always whether a soil has too much lime in it and not enough humus to be capable of growing any given plant.

It is into this situation that my new *jasmin* has come and from its three years performance at the Chapman Field Plant Introduction Garden I think we are safe in saying that *Jasminum dichotomum* Vahl. (F.P.I. 73067) is well adapted for cultivation in the limestone region of south Florida and will grow with especial luxuriance when planted on the rock reefs that border Biscayne Bay.

Mr. F. G. Walsingham, at Chapman Field, who has watched the plants which were first planted in the test nursery there, reports that since September, 1927, when the plants which were grown from our seed at Bell, Maryland, were received, this Gold Coast *jasmin* has shown unusual vigor and promise.

The first potted plants were set out in April, 1928, grew rapidly, and by the following April were in flower. The profusion of bloom has increased and the plants have never been out

of bloom since. The first fruits ripened in July of 1929 and fruits have formed and ripened ever since. In September, 1929, the high winds which did so much damage on the Florida coast partially defoliated the Gold Coast jasmin but within a month the shoots which had lost their leaves were in bloom and leaf again. The lowest temperature to which the species has been subjected, so far as I know at the time of writing this note, is 38° F. but this did not in any way affect the strong glossy foliage.

The fruits have a purple sweetish pulp around them which attracts the birds, that do not seem to mind their acidity in the least. The birds may disseminate this species into the hammocks, for when the seeds fall to the ground they grow easily into vigorous seedlings and may make this soon a naturalized plant, as seedlings have shown a surprising resistance to ill treatment. I should not be surprised to find this immigrant growing later as a contented competitor of the hammock vegetation.

I suspect that the species requires cross fertilization for the production of seed, however, and this fact may retard its spread. A single specimen that I have on one of my buildings, which has no chance of being fertilized with pollen from any other plant of the same species, has never set a single fruit, whereas at Chapman Field all of the plants have fruited very heavily.

The special points which we seem warranted in emphasizing at this early stage in the history of the Gold Coast jasmin are that it possesses an unusual vigor and adaptability to the limestone soils of this region, that its thick, glossy, dense foliage makes it a very desirable trellis covering, and that this foliage so far has not seemed to attract any pests or exhibit any diseases. Its flowers, while not so conspicuous as those of the downy jasmin (*Jasminum pubescens*), which is a winter bloomer, are about as large and of a pure white when fully open. The buds are tinged with pink. A

continuous sequence of flowers is ensured through the production of great numbers of buds in large clusters. The individual flowers open during the night, remain open all the morning and fade late in the afternoon of the same day. The Gold Coast jasmin likes the full glare of this tropical sunlight which so many of our plants shun as instinctively as does the fair northern visitor after her first encounter with its ultraviolet rays.

It may not be out of place for me to give here the facts regarding the bringing in of the Gold Coast jasmin, though I am powerless to give my readers any of the thrill that its success has given me.

The botanists of the Allison V. Armour Expedition, Dr. J. M. Dalziel and Dr. H. H. McKinney and the author, landed with Mr. Armour and Mr. and Mrs. Frank M. Whitehouse in the surf boats paddled by the Kru boys at Accra on the 24th of February, 1927. Three days later the collecting party started across the Accra Plain by truck and the Yacht Utowana sailed to a harbor in Takorade. There was something about that Accra Plain which made me feel that, were there the time, it would pay well to ransack it thoroughly for shrubs and vines and even fruiting plants, because of their adaptability to the conditions of south Florida, for on the Accra Plain plants are subjected to severe drouths, to flooding, to grass fires and to intense sunlight, though not, it is true, to frosts or excess of lime.

Although the time at our disposal was short, we did get the seeds of half a dozen species of plants on this plain which have already shown promise here. Among them were seeds of this plant, growing by the side of the road, about 14 miles from Accra and covering with its glossy foliage the shrubs and tangled vegetation, that Dr. Dalziel and I recognized as very evidently a species of jasmin.

It is a little difficult sometimes to

see in a wild species of tree or vine what its superior qualifications are. I remember being struck with its glossy, vigorous, healthy foliage, and although there were few flowers they had the typical jasmin fragrance. It was late in the forenoon, however, and the flowers were not so fragrant, perhaps, as they are at dawn, so that I wondered then just how valuable a find we had made. There were only a few seeds but we got what we could and a year later 23 plants appeared at Chapman Field Garden as the result of their propagation. I see from my notes of the time that I remarked, "Climbing shrub with deep green leaves in twos and white fragrant flowers. May prove easy of culture in south Florida. From roadside, route to Aburi, Gold Coast. (*Jasminum dichotomum*, Vahl.)"

"Just another jasmin" might be one way of putting this whole matter. I doubt not that there are those who would prefer to put it that way, but to the one who has had the pleasure of gathering the seeds in the wild tangle of the Gold Coast and has watched the seedlings come on and bloom and take a place beside the other jasmins

in his garden there comes a strange, intimate delight which is something akin to the delight of the inventor who imagines his invention in every household.

He sees the dooryards with his jasmin growing where the children first learn to play. He imagines lovers under arbors of his jasmin. He sees the withered hand of some invalid holding a spray of it as the daylight of life fades into the night and perhaps he finds it in some bridal bouquet which fills with fragrance the apse of the church where some celebrated wedding takes place. In other words, is he not perhaps entitled to his own private romance just as is any one who tries to do something new in the world?

I have not been able to discover that *Jasminum dichotomum* has been previously cultivated anywhere outside of south Florida, though somewhere it may be in cultivation, and so wonder if it is not a new instance of domestication from the wild.

The Kampong
Coconut Grove, Florida.
April 17th, 1930.

The Sempervivums—Les Joubarbes

By HENRI CORREVEON

(Translated and published by permission.)

(Continued from page 67.)

CHAPTER THREE

THE SEMPERVIVUMS CULTIVATED AT THIS TIME.

The genus *Sempervivum* belongs exclusively to the old world. It is represented by two very different groups; the one need not concern us here as it contains the types not hardy in our climate, forming the section *Chronobium* of de Candolle (*Prodromus*, vol. III, p. 411) or *Aeonium* and *Grewia* of Webb.

It comprises those arborescent or herbaceous species which inhabit the Canary Islands and Africa. The plants are widely distributed in botanic gardens and I have seen very beautiful collections at the Museum of Paris, at Kew, at Cambridge, at the Botanic Gardens of Bern and of Strasbourg, as well as at that rich garden Gruson at Magdebourg, left to that city by a descendent of French Huguenot refugees, who had a remarkable collection of succulent plants. But it is without doubt in the garden of my late friend Hanbury, at La Mortola, on that brilliant coast of the Riviera, extending from Ventimiglia to Menton, that one finds the best collection of this genus. They make, in this earthly paradise, a group of 21 species, which forms an extraordinary element of picturesqueness which gives this garden its world-wide reputation for beauty and elegance.

The *Semperviva* of the second group, *Jourbarba* (D.C.), are all European, with the exception of one Atlantic species and the types belonging to Western Asia, from the Himalayas to Siberia.

The SEMPERVIVA JOUBARBA are succulent plants with flowers composed of a calyx of 6-20 sepals, a corolla of 6-20 petals, rose or yellow, united

to each other at the base, more frequently, however, to the base of the stamens; carpels (fruits) equal in number to the floral divisions. Plants perennial, succulent, forming close rosettes, very often stoloniferous, stems with alternate leaves. In winter most of the *Sempervivums* close their rosettes and take on coppery tints.

SUBGENUS I: *Semperviva* Proper
10-20 floral divisions.

Section *Rhodanthoe*

Flowers rose or red, 10-20 divisions.

Group 1. *Ciliatae*—Leaves of rosettes glabrous on both faces, short ciliate on the margins.

S. acuminatum Baker. See S. SCHOTTI Lehm. & Schnittsp.

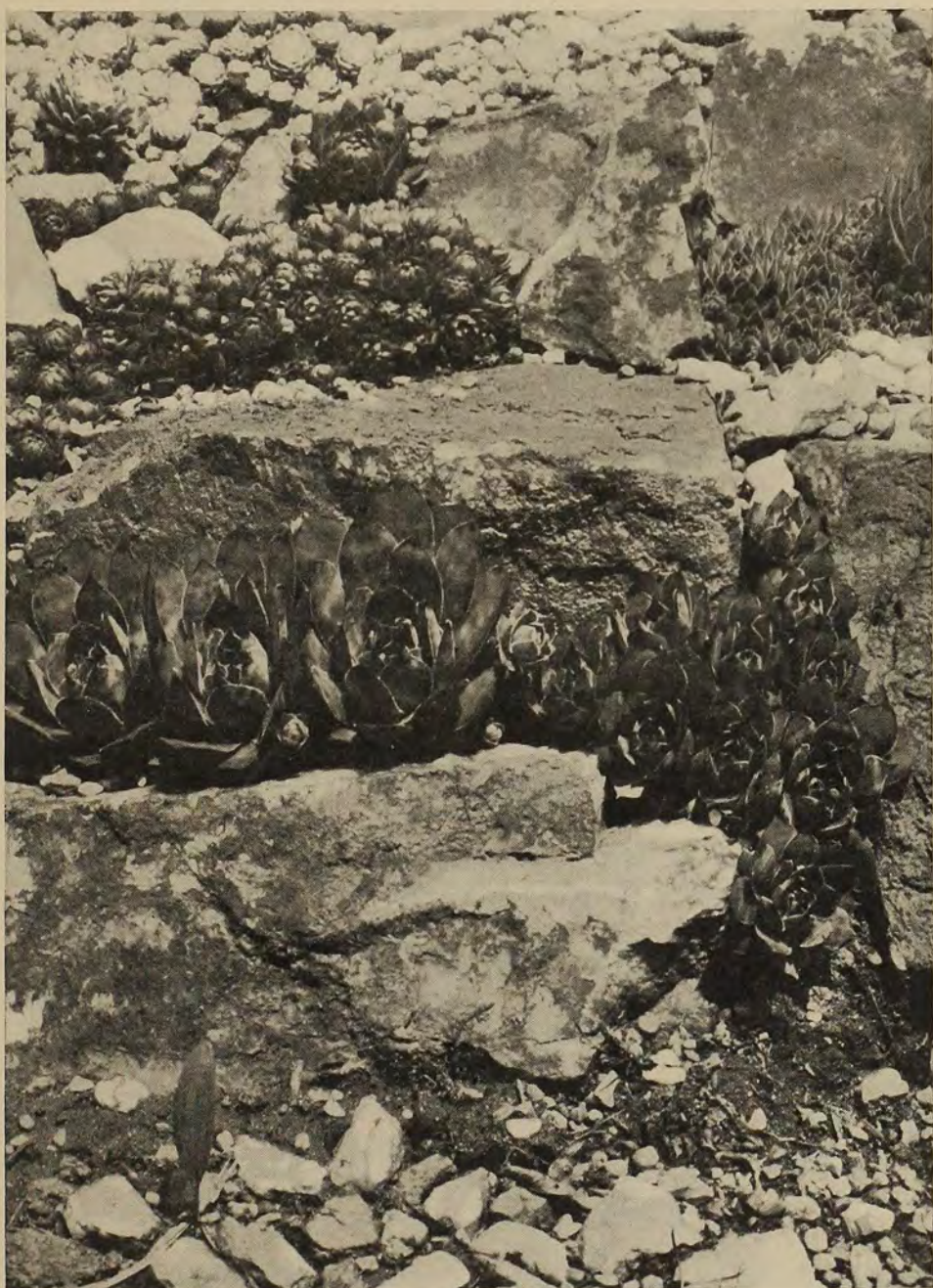
S. ACUMINATUM Schott, Oestr. Bot. Wochenbl. III, 1853, p. 28.

S. himalayense Klotsch.

Plants robust; rosettes large (7-10 cm. in diameter); leaves large, glaucous, reddish-brown toward the tip, barely acuminate-aciculate; stems and calyces pubescent; flowers pale rose, striped with deep carmine; petals lanceolate, twice as long as the sepals. A species very easily recognized by its leaves elongated to a point from their first third of their length. (It should be noted that the question of dimensions is of secondary importance and does not apply to other than wild types.)

Southern Tyrol, starting from Bozen and Lombardy, on porphyry. We have received this, in 1885, from Van Houtte and from the Brunswick Botanic Garden in 1895. We have also brought it back from the Bergamasque Alps in 1902.

S. ADOXUM Jord. & Fourr. Brev. Pl. Nov. fasc. II, p. 40.



Michael Carron

The old house leek on the lower ledge

Rosettes of medium size; leaves moderate, oblong, acuminate, narrowly contracted to a point; panicles simple, erect and spreading; flowers 20-25 mm. in diameter; petals linear lanceolate.

High Pyrenees (Gédré).

S. AFFINE Lamotte, Mém. Acad. Sc. Clermont, VI, 1864, p. 269.

Rosettes large (6-8 cm. in diameter); leaves green, rosy toward the base, reddish on the margins, oblong-obovate, the stem leaves truncate toward the base; panicles slender, elongate, with ascending branches; flowers large (2.5-2.8 cm. in diameter); petals pale rose or whitish, carpels glabrous on the back.

Massif du Viso. I found it in the neighborhood of Champorcher (Val d'Aoste) in 1910.

S. ALBERNELLI Hort.

Rosettes of moderate size; leaves abruptly acuminate, tinted green and brown.

I received this from the Museum of Natural History in Paris in 1882; from Prague in 1892; from Dr. Goudet in 1916.

S. ALPINUM Griseb. & Schenk, Linnaea, XXV, 1852, p. 600.

S. funkii Facc.

S. lasiopogon Hort.

Plant rare, closely related to *BOUTIGNYANUM*. Clumps compact; leaves of rosettes glaucous green, short-acuminate; stem leaves hairy; petals linear-lanceolate, three times as long as the calyx, ciliate, rose, veined with purple.

Eastern Switzerland and the Tyrol, at 1,000-1,800 m. altitude. Dr. H. Goudet has collected it at Sils and I, Aug. 14, 1911, on the rocks above d'Andermatt; it has also been found at Val Maggia (Tessin).

S. alpinum Vir. & Sacc., Cat. Plant Ven. 163 (non Gren. Godr.). See *S. METTENIANUM* Lehm. & Schnittsp.

S. AMBIGUUM Lamotte, Mém. Acad. Sc. Clermont, VI, 1864, p. 271.

Large rosettes (5-8 cm. in diameter), pale green, always reddish at the tips, rosy at the base; leaves oblong-obovate; stems up to 20-30 cm.; flowers rather large, rose or brownish on branches, patulous and bent.

Haute-Savoy (Mount Arbeiran); neighborhood of Larche and Barcelmette.

S. americanum Hort. See *S. VERLOTTI* Lamotte.

S. ANTARCTICUM Hort.

Received in 1887 from Chaté in Paris. Received from Prague in 1890, a specimen originally coming from the Paris Museum. (We have lost it.)

S. arenarium Stev., Baker in Gard. Chron. 1874, p. 104. See *S. RUTHENICUM* Hort.

S. ARVERNENSE Lecocq & Lamotte, Cat. Pl. Vasc. Fr., p. 179; Boreau, Flore Centre, 3rd Ed. p. 259; Lamotte, Et. Semp., p. 24.

S. pulverulentum Dulac.

S. pyrenaicum Hort.

Plant distinctly characterized and elegant, forming large compact masses of medium sized rosettes; leaves oblong, clear green, brown at the tips, provided on the faces (on the young leaves only) with short hairs; stem leaves lanceolate-acuminate, slightly glandular pubescent and sharply attenuate to a reddish brown point; stem 10-25 cm. high; panicles in a corymb, furnished with short hairs, glandular and spreading; flowers distinctly pedicellate, the lower the longer; petals rose marked with carmine lines, one and one-half times longer than the calyx; stamens with purple filaments.

Central France and the Midi, on granite rocks (Cantal, Puy-de-Dôme, etc.). I have found this beautiful species at the foot of the old temple of Templiers at Comps (Var); we have received it from Prague in 1889, from Kesselring in 1911, and from the Paris Museum in 1915.

S. ASSIMILE Schott, Oestr. Bot. Wochenbl. III, 1853, p. 19.

Differs from *ACUMINATUM* in its small rosettes ($1\frac{1}{2}$ –2 cm. in diameter); leaves pointed and spatulate, lightly pubescent and in its petals, hairy along the two midribs; leaves covered with short down or puberulent, short, ciliate on the margins; inflorescence gray-pubescent; stem leaves terminate in a very conspicuous point; flowers rose.

Carpathia, Transylvania. We have received this in 1902 from Czar Ferdinand of Bulgaria, in 1904 from the Botanic Garden at Vienna, in 1910 from Kesselring, in 1915 from the Museum of Paris, and in 1921 from M. Pauli.

S. ATLANTICUM Ball, Journ. Linn. Soc. XVI, 1878, p. 454; Pl. col. Bot. Mag. T. 6055.

Very characteristic plant with large rosettes (8–10 cm. in diameter); the young rosettes nearly sessile; leaves of the rosettes oblanceolate-cuneiform, cuspidate, pale green, very lightly tinted with rose, very heavily long-ciliate on the margins; stems 30–35 cm., very hairy with reddish leaves; flowers pale rose, very wide open; calyces very hairy.

Summit Mt. Atlas and Morocco at 2,000–2,800 m. Reported in 1875 from the cliffs of d'Ain Mesan (Atlas) by Hooker and Ball. We received it in 1889 from Prague, in 1911 from the Botanic Garden at Cambridge; finally, in 1922, from M. E. Jahandiez who sent it from Morocco.

S. ATROPURPUREUM Hort.

A form of *TECTORUM* with deeply tinted leaves. Leaves thickish and shorter, more regularly acuminate and of a red color which becomes nearly black in winter.

Received from Van Houtte in 1884, from M. de la Harpe, Paris, in 1895.

S. ATROVIOLACEUM Hort.

S. heuffelii var. *boissieri* Hort.

A violet form of *TECTORUM*. Large and regular rosettes; leaves violet, more or less deep in hue; flowers rose. Rarely flowers.

Received in 1886 from M. Chaté in Paris. I have found it on the Vuache and in the Southern Jura.

S. AUREGGI Lurani.

A *TECTORUM* of medium size, with reddish leaves, smaller and more numerous flowers.

Found on the mountains of Brianza, in Lombardy, by M. Aureggi of Milan, and cultivated in the Alpine garden of the Daphnea, in Monte Baro. We have received it in 1890 from Count Francesco Lurani of Milan, who named it.

S. BEUGESIACUM Jord. & Fourr., Brev. Pl. Nov. fasc. II, p. 30.

Rosettes of medium size, self-colored, a glaucous water green, oblong, slightly pubescent on the back, sharply contracted and rounded, terminated by a dark point (they are sometimes marbled with rose toward the top); panicles corymbose with erect branches; stem-leaves truncate toward the base; flowers rather large (2.5–2.8 cm. in diameter); carpels glabrous on the back; styles not thickened like those of the nearly related *brevistylum*.

Calcareous rocks in the Department of the Ain (Virieu-le-Grand). We have received it from Miss Willmott who had it from the collection of Jordan of Lyon. (All the species and forms of Jordan and Fourreau have been cultivated in the famous garden of M. Jordan at Lyon, which I have had occasion to visit for forty years and of which the types, carefully labelled, have served as the material for the studies of those botanists. There are nearly 6,000!)

S. BICOLOR Hort.

This is a bicolor form of *TECTORUM*, of which Farrer gives a photograph in his "English Rock Garden," p. 348.

We have received it from Chaté in Paris in 1887.

S. BLANDUM Schott, Oestr. Bot. Wochenbl., III, 1853, p. 29.

A very stoloniferous species; rosettes

5-8 cm. in diameter; leaves obovate-spatulate, bluish green, shortly contracted to an aciculate point; stem-leaves reddish green, pointed with brown tips; stems 20-25 cm., covered with a fleece of mixed, wooly hairs both long and short; flowers pale rose with a line of bright rose in the center (of each petal); petals small, somewhat downy from the tip on the under side and twice as long as the calyx.

Carpathia, Transylvania. We have received this from the botanist Roemer in Transylvania, in 1894; from the Brunswick Botanic Garden (as seed) in 1895, the Botanic Garden of Geneva in 1895, and from Laybach in 1911.

S. BOISSIERI Baker, ex Baker in Gard. Chron. 1879, II, p. 39.

Plant forming clumps, with rosettes very compact, thick, 5-8 cm. in diameter; the young rosettes are very short pedunculate; leaves oblanceolate, cuspidate, larger toward the center, less sharply cuspidate than those of *tectorum*, the outer leaves green, imperceptibly brownish toward the top, 2.5-3.0 cm. in length, the inner leaves slightly glaucous and carrying a large dark brown stain at the tip; flowering stalks 20-25 cm. high with oblong-lanceolate leaves, closely overlapping, reddish and very ciliate; panicles 5 cm. or more, corollas 2.5 cm. in diameter; petals reddish brown, very hairy; stamens much shorter than the petals with red-brown filaments.

Native habitat unknown. Description made from a specimen that flowered at Kew, July, 1878. I received it from Kew in 1898, from Verrierés (Vilmorin) in 1905 and from Kesselring in 1911.

S. BOUTIGNYANUM Billot & Gren. in F. Schultz, Arch. Fl. Fr. et. Allem. 1853, pp. 263-302; Lamotte, Et., p. 332; Billot gave a description in Flora Galliae et Germaniae.

Plant pubescent-glandular at the top, glabrous or glabrescent toward the base; rosettes medium sized (5-6

cm. in diameter); leaves large, oblong-obovate; stem 10-25 cm., glabrescent toward the base, glandular-tomentose toward the summit, sending out at its base very many rosettes; flowers pale rose; petals oblong-linear, twice as long as the calyx; filaments glabrous; carpels glandular-tuberulous. A species essentially from the Pyrenees, which is found about Corbières and which differs from *TECTORUM* in the pubescence of its upper parts, by its more branched stem, and by the length of its petals.

I have found it between Saint-Sauveur and Gédre (High Pyrenees) with many forms as it hybridizes readily. Received in 1876 from Bordère at Gédre, in 1884 from the Paris Museum, in 1894 from the Botanic Garden of Laybach (as seeds), in 1895 from Van Houtte, and the Brunswick Botanic Garden.

S. BRACHIATUM Lamotte, Mém. Acad. Sc. Clermont, VI, 1864, p. 267.

S. saxosum Jord. & Fourr.

Plant related to *LAMOTII*, with rather large rosettes (6-9 cm. in diameter); leaves blackish-green, ciliate, contracted at the tip to a rather short point; panicle oval, more or less dense; flowers rose.

High Alps, Mont Viso, Lauteret, La Grave, etc.

S. BREVIAMUM Jord. & Fourr., Brev. Pl. Nov. fasc. II, p. 36.

S. luxurians Jord. & Fourr.

This is a variety of *TECTORUM* with rather smallish rosettes (5-6 cm. in diameter) with leaves long acuminate, more or less glabrescent, tinted with reddish-brown; stem leaves truncate toward the base; panicles spreading with ascendant branches; flowers a beautiful rose color (2.5-2.8 cm. in diameter); carpels pubescent on the back.

La Grave, in the Dauphiné.

S. BREVISTYLUM Lamotte, Mém. Acad. Sc. Clermont, VI, 1864, p. 264.

Large rosettes; stem leaves truncate toward the base; panicles corymb-like;



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*Familiar cobwebs above and S. soboliferum
Sometimes offered as S. globiferum, below*

more or less large with spreading branches; flowers large (2.5–2.8 cm. in diameter); sepals, carpels and styles; carpels glabrous on the back, ending in a style.

Lower Alps, on the hills of Larche and Barcelonnette.

S. CALCARATUM Baker (ex Baker, Gard. Chron. 1874, II, p. 386).

S. italicum Hort.

S. rusticum Hort.

Related to *TECTORUM*, with many sessile rosettes of such a kind that the plant forms a thick and compact clump; rosettes from 8–10 cm. in diameter; leaves obovate-cuneate, glaucescent, bearing at their tip a brownish-black stain and a spiny point; stalk 30–35 cm. in height; inflorescence densely villous; panicles 15–20 cm. in length, the outer branches deeply forked; flowers spreading, 2 cm. in diameter. Differs from *TECTORUM* in its larger rosettes, by its slightly more glaucous, not pure green leaves with a brown point clearly marked at the tip. Baker says he has seen it in gardens under the names: *Rorgeni*, *italicum*, *Sequeri*, *rusticans*, *juratum*, and *Comolli*.

We received it from Kesselring in 1911 and from Paris in 1914.

S. CALCAREUM Jord., Ob. Pl. Crit. VII, 1894, p. 26; Jord. & Fourr., Icones, fig. 132.

S. californicum (wrong name).

Plant typical, forming clumps compact and dense, with rosettes 5–6 cm. in diameter and more. I have seen it in England reaching 10–12 cm.; the young rosettes are nearly sessile; leaves oblong-cuneate, cuspidate, very glaucous, with a brownish black spot at the tip; stalk up to 30–35 cm.; stem leaves oblong-lanceolate, densely imbricated; panicles 8–10 cm., carrying 8–12 simple and revolute branches; flowers pale rose, smaller than those of *tectorum*, with petals strongly ciliate, more narrow than in *tectorum*.

Limestone hills of the Savoy, at Dauphiné, of Provence and the Alps

Maritime. I have found superb clumps hanging from the practically vertical Gorges du Cians (Maritime Alps), afterward near d'Eze, Nice and Tende.

It is a magnificent plant, so well characterized that its elegance and its beauty have long attracted amateurs. It has sometimes been cultivated as *tectorum splendens* and it should be credited to the botanist Jordan who discovered the specific characters. It is useful in borders, as decoration on top of walls, and for growing in artificial rockwork. Oh horror! this beauty is used in "carpet bedding" for making abominable imitations of carpets that the modern taste attempts to introduce into our gardens and that aesthetes condemn with reason.

I received it in 1878 from M. Boissier, in 1879 from the Paris Museum, afterwards from Froebel at Zurich, from Bach (Thoune), from Kesselring (Petrograd), from Van Houtte and several Botanic Gardens, both as plants and seeds.

S. californicum Hort. See *S. CALCAREUM* Jord.

S. CANTALICUM Jord. & Fourr., Brev. Pl. Nov. fasc. II, p. 41, Icones, fig. 204.

S. legrandi, Schultz.

A plant very closely related to *CALCAREUM*, but with rosettes deep green and not glaucous, with dark brown tips; dimensions average; leaves oblong, sharply contracted to a long point at the tip; stalks 20–25 cm.; flowers pale rose; petals linear; filaments villous up to the top.

Rocks of Cantal.

S. CEBENNENSE Lamotte, Prodr. Flor. Centr. Fr. I, p. 313.

A plant related to *ARVERNENSE*; differs in its reddish leaves covered with short hairs, its inflorescence furnished with long hairs, its rather globular rosettes, its stalk 20–30 cm. high and its linear petals.

Rocks of Cévennes and central France.

S. CELSICAULE Jord. & Fourr., Brev. Pl. Nov. fasc. II, p. 33.

A beautiful form of *TECTORUM* that has not been found in nature but that has been cultivated for all time on the walls in the neighborhood of Lyon. Rosettes medium sized; leaves somewhat cuspidate, contracted rotund, of various tints; panicles elongate-oblong; flowers large (3–3.5 cm. in diameter), petals linear-lanceolate, acute, a beautiful rose; filaments purple; carpels glabrous on the back.

S. CHABOISSEAUTI Hort.

Rosettes of medium size (5–6 cm. in diameter), with leaves long acuminate, blotched with green and brown. I have never seen the flower here.

We received it from Prague in 1892, from Holland in 1895, and from Paris many times over.

S. ciliatum Gilib. See *S. TECTORUM* L.

S. COLLINUM Jord. & Fourr., Brev. Pl. Nov. fasc. II, p. 39.

A modest plant with small rosettes (3.5–4.5 cm.); leaves oblong-spatulate, spreading, mottled with rose; panicles small, with short branches; flowers rosy white with linear-lanceolate petals.

Cliffs of Condrieu (Rhône); Drome (Le Saint-Vallier à Train).

S. COLUMNARE Jord. & Fourr., Brev. Pl. Nov., fasc. II, p. 45; Icones, fig. 135.

Related to *CALCAREUM*. Rosettes small (4.6 cm. in diameter); leaves glaucous, brown at the point, covered with hairs; stalks weak, of 20–25 cm.; panicles close, very long, with numerous and elongate branches; flowers rather small (1.2–1.5 cm. in diameter), pale rose; stamens with glabrous filaments attached to the base of the petals.

Lower Alps.

S. COMPACTUM, Lamotte, Mém. Acad. Sc. Clermont VI, 1864, p. 289.

Plant with rosettes very close, compact (5–7 cm. in diameter), pale

green; leaves 3–4 cm. in length, obovate-spatulate, gradually attenuate and narrow toward the base, sharply contracted at the tip to a short point, reddish green, furnished with several very short hairs along the margins; stolons very short; stalk slightly reddish (20–30 cm. in length), somewhat villous; stem leaves oblong-lanceolate; rather sharply attenuate, short point tipped with small white hairs; panicles downy-glandular; flowers of moderate size (2–2.4 cm. in diameter), rather long pedicels; petals pale rose striped with purple, linear-oblong (1–2 mm. in breadth; 8–10 mm. in length).

Petit Saint-Bernard and the Graian Alps.

S. CONSTRICTUM Jord. & Fourr., Brev. Pl. Nov. fasc. II, p. 43; Icones, fig. 214.

Related to *CORYMBOSUM* but with bright rose flowers, more thickly set in smaller panicles, with simple and few-flowered branches.

Haute-Loire (du Puy à Brives) and Cantal.

S. CORNI DI CANZO Hort.

This is a form very closely related to *comollii*, if it is not identical with it. I have collected it in times past on Monte Baro in Lombardy. Rosettes large, very glaucous; leaves very thick; flowers brownish rose, well shaped.

Received in 1895 from Count Lurani at Milan; in 1896 from Froebel at Zurich and collected by ourselves in the wild.

S. CORYMBOSUM Jord. & Fourr., Brev. Pl. Nov. fasc. II, p. 44; Icones, fig. 148.

Rosettes small; leaves oblong-cuneiform, with brown tips; panicles small, with two-parted branches, flowers pale rose; petals narrow linear-lanceolate.

S. CRASSICAULE Hort.

This is a *TECTORUM* having a thick stalk and forming a compact tuft. We received it in 1921 from M. Pauli; it has not yet flowered.

S. CRASSIFOLIUM Salisb., Prod. 308.

Variety of *TECTORUM* with very thick leaves; flowers a little larger. Received from the Botanic Garden of Lyon in 1910.

S. CUPREUM Hort.

A copper colored *TECTORUM*, found on granitic soils. Received from Paris in 1892.

S. DECOLORATUM Jord. & Fourr., Brev., Pl. Nov. fasc. II, p. 30; Icones, fig. 134.

A *TECTORUM* with large rosettes (8-9 cm. in diameter) of a water-green color; leaves slightly pink at the base and reddish on the margins; flowers with petals whitish or light lilac; carpels pubescent on the back.

Neighborhood of Culoz (Ain).

S. DECORUM Hort.

A very pronounced bicolor form of *TECTORUM* that we received from Van Houtte in 1890.

S. DELASOIEII Lehm. & Schnittsp., Ber. Offn. Ver Naturkunde, I, p. 33.

A plant related to *VERLOTHII*, but in which I have never been able to distinguish differentiating characters. We received it from Kesselring in 1911 and some from everywhere since about 1880, but no two of the types sent have agreed.

S. DENSUM Hort.

A form of *TECTORUM* with close and denser rosettes.

Received from Kesselring in 1911.

S. DICRANOCLADON Jord. & Fourr., Brev. Pl. Nov. fasc. II, p. 42; Icones, fig. 147.

Related to *arvernense* but differs in its very ample and branching panicles, with bifid branches, its flowers larger (2.6-2.7 cm. in diameter) and its rosettes compact and rigid (6-8 cm. in diameter); stalks rose; leaves large, dark green, sharply narrowed at the tip to a brown point.

S. ELEGANS Hort.

A *TECTORUM* with brownish leaves that we received in 1895 from Haage and Schmidt and which does not show any particular characters.

S. ERUBESCENS Jord. & Fourr., Brev. Pl. Nov. fasc. II, p. 42; Icones, fig. 146.

Closely related to *ARVERNENSE*; rosettes medium size; leaves very dark green with black points.

S. FERRIERI Hort.

Plant related to *TECTORUM*, with globular rosettes (5.6 cm. in diameter), glaucous to reddish; leaves sharp acuminate with reflexed tips.

Received from Paris in 1895 and from M. Pauli in 1921.

S. funkii Facc. See *S. ALPINUM*, Griseb. and Schenk.

S. funkii Lej., Nym. Consp. 258. See *S. SCHNITTSPAHNI*.

S. GLAUCUM Tenore, Annali di Storia nat., III, 248 et Ind. Sem. Hort., Neap., 1830, p. 13.

S. schottii Baker.

Baker declared that he was not able to distinguish this from *schlehani* Schott; however, the specimens that I have received from the Paris Museum and those that I have found in the rocks of northern Italy showed characters as follows: large rosettes, glaucous-gray (8-10 cm. in diameter); leaves with recurved tips; flowers smaller, with narrow petals; stamens normal.

We have received it from Chaté in Paris (1890); from Van Houtte (1895); from the Paris Museum (1915) and I have found it many times in Italy.

S. GRANDIFLORUM Hort. (Non Haw.)

Variety of *TECTORUM* with large flowers.

S. GREENII Baker, Gard. Chron. 1877, II, p. 230.

A small *TECTORUM* with very glaucous leaves marked with a terminal



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Background *S. cornutum*; upper left, *S. mettenianum*; upper right, *S. fimbriatum*;
lower left, *S. arenarium*; lower right, *S. violaceum*

brown-black blotch; it is a sort of calcareum reduced in all its parts.

Sent to Kew in 1875 by Mr. Green of Reigate. We have received it in 1901 from the Rev. Ellacombe and in 1911 from Kesselring.

S. GUILLEMOTH Lamotte, Bull. Soc. Bot. Fr. III, 1856, p. 457.

Rosettes subglobose; leaves spreading-erect, somewhat glaucescent, dark brown toward the tip, oblong-lanceolate, sharply acuminate-mucronate; stalks 10-12 cm., long villous, glandular; stem leaves short, hispid-glandular; panicles covered with long hairs, soft and glandular; flowers medium size (2.2-2.5 cm. in diameter); petals very pale, dull rose, striped with carmine, linear acuminate; filaments purple.

Lower Alps.

S. *heuffelii* var. *boissieri* Hort. See S. ATROVIOLEACEUM Hort.

S. *himalayense* Klotzsch, Bot. Ergeb. Waldem. Reise, 145, fig. 43. See S. ACUMINATUM Schott.

S. *italicum* Hort. See S. CALCARATUM Baker.

S. JURATENSE Jord. & Fourr., Brev. Pl. Nov. fasc. II, p. 28; Reuter, Cat. genev. ed, II, p. 86.

This is a TECTORUM differing from the type in its rather lax rosettes, medium size (4-6 cm. in diameter), its stem leaves somewhat attenuate at the base, its smaller flowers (1.8-2.2 cm. in diameter) of a pale rose and its flowering 5 days earlier. Its leaves are reddish at the tip.

It is found in the Southern Jura and on the summit of the Vuache; one finds it sometimes even on the plain. In the canton of Geneva, Mr. John Jullien found it 10 kilometers from the city, on a sandy terrace formed on the banks of the London, near its confluence with the Rhone. It makes there forms much stronger, due to the soil rich in humus, and takes on varied tints, from apple green to dark violet, passing through gray-green, bronze, and copper colors. It

is there, in three localities, by the million and carpets the earth where snakes are plentiful. We have cultivated it since 1884 and received it from Van Houtte under the name of *S. juratum*.

S. LAETEVIRENS Jord. & Fourr., Brev. Pl. Nov. fasc. II, p. 37, Icones, fig. 140.

Related to VERLOTTII. Rosettes of 5.8 cm. in diameter; leaves narrowly elongate, self-green, long acuminate; panicles short pubescent; flowers 2.4-2.5 cm. in diameter.

La Grave en Dauphiné.

S. LA HARPEI Hort. Flor.

Rosettes of medium size; leaves clear green, reddish beneath, red-brown at the tip, shortly reflexed in a rigid point; panicles large; flowers light rose, almost gray-white; petals twice as long as the calyx.

This plant has been found in Valais by M. Ed. de la Harpe, who has long cultivated it out-of-doors in Paris on a balcony and on a terrace. Sent to Floraire in 1886, where it flowered in 1896.

S. LAMOTTEI Bor., Mem. Soc. Acad. Marne-et-Loire, 1859, p. 86.

This is a METTENIANUM with large rosettes (8-10 cm. in diameter); leaves green, slightly glaucescent, oblong-ovate, shortly attenuate to a short point, green or a little reddish; stalks 25-40 cm., rather weak and long villous and glandular; panicle very spreading; flowers large 3-3.2 cm. in diameter), all sessile or subsessile; petals narrow, very pale rose, marked above with purplish veins, twice as long as the calyx; filaments purple, slightly hispid on the lower part, anthers salmon rose.

Puy-de-Dôme, Allier, middle and eastern France to Alsace. We have received it from Paris in 1885 and from Dr. Goudet in 1910 and we have raised it from seeds from the Botanic Gardens of Brunswick, Munich, Bonn, Geneva, etc., but have never obtained it pure from seed.

S. lasiopogon Hort. See *S. ALPINUM* Griseb. & Schenk.

S. legrandi F. Schultz, Flora, I, 1867, p. 469.

A provisional name that has never been confirmed.

The plant is identical with *CANTALICUM* of Jordan.

S. LEHMANNI Hort.

A horticultural form having rosettes of moderate size, widely open, with numerous offsets; stolons short; leaves long acuminate, green and reddish, terminated with a long point; hairs long and stiff, somewhat woolly at the tip.

Received in 1921 from M. Pauli.

S. LEPTOPETALUM Jord. & Fourr., Brev. Pl. Nov., fasc. II, p. 43; Icones, fig. 145.

This is an *ARVERNENSE* with medium-sized rosettes; leaves oblong-lanceolate; stalks 15–20 cm.; panicles short, with two-parted branches; flowers smaller (2–2.5 cm. in diameter); petals narrow, linear, lined, shaggy only on the tip.

Rocks of Cantal, the Loire, and Aveyron.

S. LESURINUM Lamotte, Mém. Acad. Sc. Clermont, VI, 1864, p. 282; Prodr. pl. cent. p. 313.

Related to *ARVERNENSE* from which it differs in its much smaller rosettes (3.5–4.5 cm. in diameter), its oblong, cuneiform leaves of a rather deep green, often reddish, and less attenuate in a brown point which, here, is longer than the calyx; stamens with filaments deep purplish red, entirely glabrous; anthers oval, red-orange.

Plants rather rare on the wild rocky cliffs of the Lozère. We have received it from Paris in 1895.

S. luxurians Jord & Fourr., Brev. Pl. Nov. fasc. II, p. 34; Icones, fig. 141.

See *S. BREVIRAMUM* Jord. & Fourr.

S. MAGNIFICUM Hort.

This is an *ATROVIOLACEUM* with

even larger rosettes, that is much cultivated in England.

I have seen its beauty in Mr. Bowles garden at Middleton House in 1922.

S. MAITREI Lamotte, Mém. Acad. Sc. Clermont, VI, 1864, p. 273.

This is an Alpine form of *TECTORUM*, in which the large rosettes have leaves of different lengths, those of the outside being much longer than those of the center, which is usually the case, but here the disproportion is particularly marked. Rosettes loose (6–9 cm. in diameter); outer leaves passing gradually to the center, very glabrous, deep green, glaucous, without red coloring at the tip, red at the base, oblong-obovate, 6–10 cm. long, somewhat long-attenuate to a green point, showing little red; stolons short, stalk 25–35 cm.; panicles covered with long hairs and down; petals rose streaked with carmine; linear-oblong, somewhat sharply attenuate and ended with a short point; filaments purplish.

Graian Alps, Petit Saint-Bernard.

S. MAJUS Neck., Delic. Gallo-Belg. I, 213.

This is an enormous form of *TECTORUM*.

S. marmoreum Griseb., Spicil. Fl. Rumel., I, p. 239. See *S. PURPURASCENS* Schott.

S. METTENIANUM Lehm. & Schnittsp., Flora, XXXVIII, 1855, p. 4.

S. alpinum Vis. & Sacc.

Medium sized rosettes, with many offsets closely packed about them; leaves obovate-lanceolate, gradually acuminate and terminating in a spur like a claw; reflexing from the base; flowers small, rose, with linear-lanceolate petals, short and hairy. It is related to *BOUTIGNYANUM*. Rouy (Flore France, vol. II, p. 132) has made it a type to which he attaches *lamottei*, *luxurians*, *pallidum*, *rhodanicum*, *robustum*, *seusanum*, *validum*, as varieties. But as his description differs completely from that of Schnitts-

pahn, we do not accept his way of looking at it.

We grow in our collection, under the name of *METTENIANUM*, the old type which we received from the Paris Museum in 1893 and again in 1915, and from the Botanic Garden of Zurich in 1895 and of Brunswick in 1898.

At the Botanic Garden of Strassburg, the Alpine rockery is filled with a curious sempervivum of the *fimbriatum* section bearing the name *METTENIANUM* Schnittspahn, which has nothing to do with our plant.

S. METTENIANUM is a rare plant in the western and Bergamasque Alps where it grows at between 1,000 and 1,500 meters altitude.

S. MINUTUM Bourg., Nym. Consp., 258.

This is a small form of *TECTORUM*, found in Spain about 1850, which has never been described. It is known only in herberia.

S. MODESTUM Jord. & Fourr., Brev. Pl. Nov. fasc. II, p. 38; Icones, fig. 133.

A *CALCAREUM* with medium sized rosettes; with leaves mottled with rose, long acuminate; with many stalks, lax, bearing a certain number of small panicles at different heights, which form a large rosy spike.

S. montanum Sibth. & Sm. Fl. Graec. Prod. I, 335. See *S. TECTORUM* L.

S. MURALE Bor.

A *TECTORUM* that is cultivated on old walls and is distinguished from the type because it often has the twelve inner stamens and all the stamens besides transformed into pedicellate carpels and separating the sepals.

Received from Paris in 1884, from Van Houtte in 1885, from Holland in 1891, and the Botanic Garden of Geneva in 1895. Collected at Cornaux (Neufchatel) in 1916.

S. MURITHII Lagg., Bull. Soc. Murith. II, 1873, p. 49.

Rosettes of medium size; leaves

ovate-lanceolate of a clear green, reddish at the tips; stolons short, the young rosettes being pressed against the old ones; stem-leaves scattered, long, acuminate, ciliate, and furnished with several hairs at the tip which is reddish and reflexed; panicles spreading, with both long and short hairs; flowers deep red; petals twice exceeding the sepals which are reddish, acuminate, and end in a long point.

Collected in 1862 at Grand Saint-Bernard and at Catogne (Valais). I have found it on the cliffs which command Sembrancher at Valais.

S. NIGRUM Hort.

This is a *TECTORUM RUBUM* with even darker leaves.

Received from Vilmorin (Verrières) in 1910 and from Kesselring in 1911.

S. OBOVATUM Jord. & Fourr., Brev. Pl. Nov. fasc. II, p. 32.

Differs from *ROBUSTUM*, to which it is related, in its much smaller flowers, and the much larger radical with somewhat contracted margins.

S. ORNATUM Hort.

A *TECTORUM* with large flat rosettes, leaves dark brown at the base and green toward the tip, exactly the opposite of *calcareum*. My *PIEDOYANUM* of the Maritime Alps may be this plant.

Received from Van Houtte in 1885.

S. PALLIDUM Jord. & Fourr., Brev. Pl. Nov. fasc. II, p. 33.

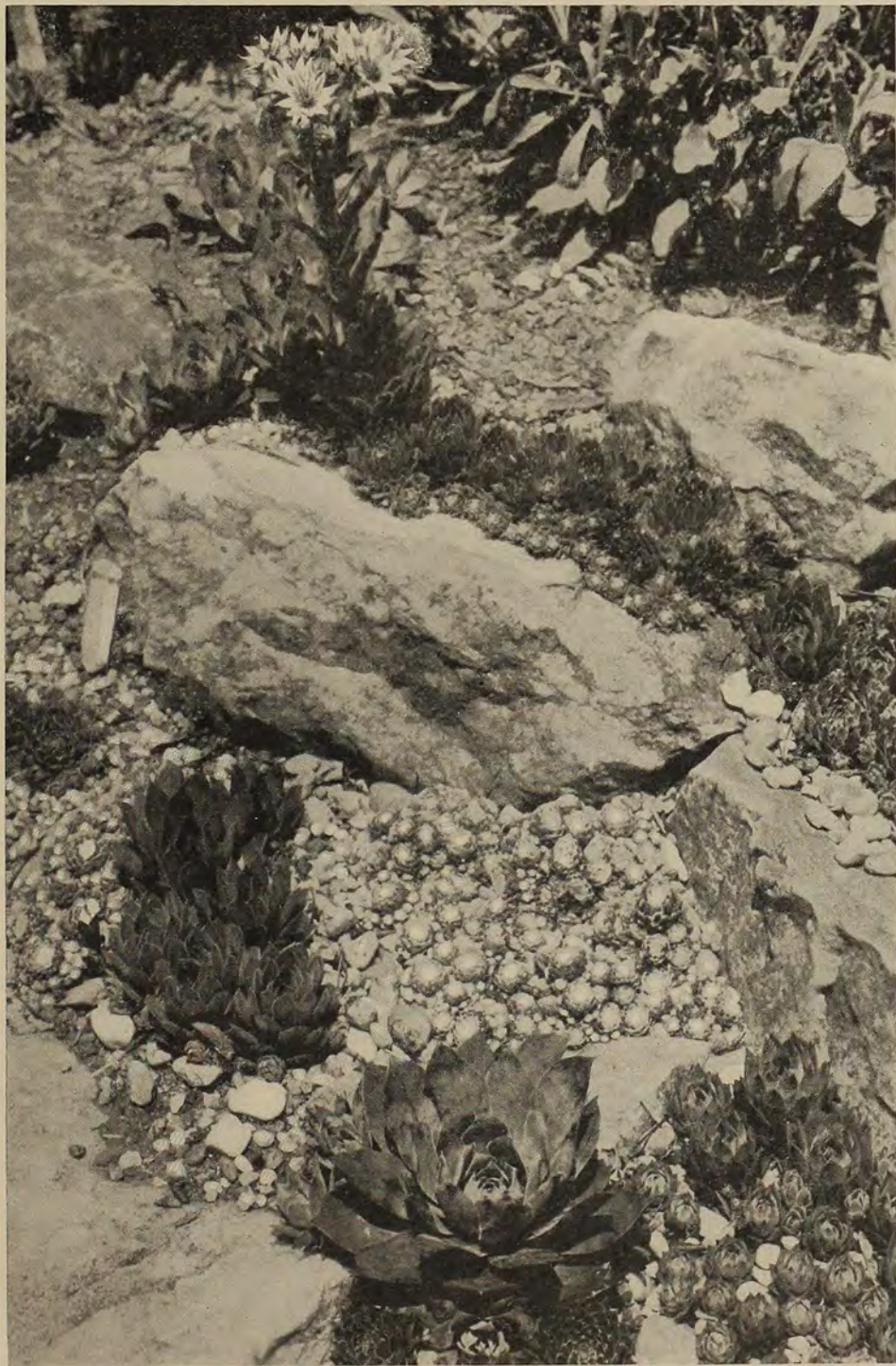
A form of *ROBUSTUM* with leaves rounding from their base toward their extremities and sharply contracted; with whitish flowers.

Le Monestier, High Alps.

S. PARVULUM Jord. & Fourr., Brev. Pl. Nov. fasc. II, p. 38.

This is *CALCAREUM* in miniature, with reddish leaves, oblong, cuneiform, rounded points, of a yellowish green tipped with red.

S. PRAESTABILE Jord. & Fourr., Brev. Pl. Nov. fasc. II, p. 29.



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In planting use species of contrasting size and character

A *TECTORUM* with large rosettes (8–10 cm.); glaucous, with leaves sharply contracted to a point more or less elongate; stem leaves rounded at their bases; panicles corymblike; flowers rather large (2.5–2.8 cm. in diameter). Very close to *CALCAREUM* Baker, if not identical.

S. PULCHRUM Hort.

Simply a form of *CALCAREUM* sometimes cultivated under the name *Sempervivum* sp. Bosnie, although this type does not occur in the Western Alps; here again we have an error in labelling.

We have cultivated it since 1887 and received it from the Imperial Garden, the Belvedere, at Vienna.

S. pulverulentum Dulac, Flore des Hautes-Pyrénées, p. 325. See *S. ARVERNENSE* Lec. & Lamotte.

S. PURPURASCENS Schott (Boiss. Flor. Or., vol. II, p. 796).

S. marmoreum Griseb.

Related to *TECTORUM* from which it differs in its leaves of mottled brown and green and its petals not united at the base.

Mount Athos, at between 1,500 and 1,900 meters altitude.

S. pyrenaicum Hort. See *S. ARVERNENSE* Lec. & Lamotte.

S. PYRENAICUM Lamotte, Mém. Acad. Sc. Clermont, VI, p. 284.

S. pallescens Jord. & Fourr.

Rosettes loose (4.5 cm. in diameter) with leaves pale green, glaucous, reddish at the summit, oblong-elongate, sharply attenuate to a short reddish point; stolons numerous, short; stalks 15–25 cm., with short glandular hairs, sprinkled with longer soft hairs; lower stem leaves glabrous, upper hispid-glandular, usually reddish toward the top; panicles covered with short hairs and less numerous longer, glandular hairs; flowering branches elongate; flowers pedunculate 2–2.5 mm. in diameter; calyx covered with short glandular hairs, mixed with other

longer ones; petals very pale, hispid on the margins, whitish on the upper part, linear-oblong (1.5 mm. in breadth 8–10 mm. in length) twice exceeding the calyx; stamens with purple filaments.

High Pyrenees (near Saint-Sauveur).

S. RACEMOSUM Jord. & Fourr., Brev. Pl. Nov. fasc. II, p. 44, Icones, fig. 133.

This is a *CALCAREUM* with long acuminate leaves, narrow panicles, bearing on short branches 8–9 relatively small flowers.

Lower Alps (Digne, Gorges of the Verdon).

S. REQUIENI Lehm & Schnittsp., Hort. (Vilm. Fleurs de pleine terre, ed. III, p. 572).

Very closely related to *S. TECTORUM* var. *ROBUSTUM*, if not identical.

We have received it as seed from the Botanic Garden at Bremen in 1891, from Vienna in 1892 and from Brunswick in 1895, and as plants from the Jardin Defregger à Kufstein (Tyrol) in 1895. Vilmorin indicates as a synonym the *tectorum rusticum* Schnitt.

S. RHODANICUM Jord. & Fourr., Brev. Pl. Nov. fasc. II, p. 31.

Rosettes large and strong, with broad oblong leaves, sharply contracted to a point; stem leaves truncate at the base; flowers distinctly pedicellate, the inner ones somewhat longer, arranged in broad panicles on usually 2-parted branches; petals linear-lanceolate, rose.

Cliffs in the département of the Ain, near the Rhone. Received in 1912 from the Botanic Garden at Geneva.

S. rigidum Jord. & Fourr., Brev. Pl. Nov. fasc. II, p. 35. See *S. SPECIOSUM* Lamotte.

S. ROBUSTUM Jord. & Fourr., Brev. Pl. Nov. fasc. II, pl. 32; Icones, fig. 136.

A very lovely species with large rosettes (8–10 cm. in diameter); leaves

flat, deep green, brown at the tip; stalks very tall and strong (50–60 cm.); flowers with petals larger than those of *RHODANICUM*, from which it is distinguished by the brown spot on the tips of the leaves.

It was found by the authors on the cliffs in the département of the Ain. I have found it in the Maritime Alps and elsewhere. We received it from the Botanic Garden at Lyon 1895 and from Kesselring in 1911.

S. ROYANUM Corr. (nom. provis.).

This is a form of very remarkable proportions which exceed those of all other semperviva. It is related to *CALCARATUM* Baker, but its rosettes measure up to 12 cm. in diameter; they are glaucous, self-colored, with red-brown tips. It is an even stronger robustum, although its flowering stalks rarely exceed a bare 50 cm.; flowers brownish rose in widely opened stars.

It grows on the rocks commanding Fontan, on the Roya Maritime Alps, where I found it in 1914.

S. RUBENS Hort.

A *TECTORUM* with large rosettes (7–8 cm. in diameter), the numerous offsets borne closely crowded about them on short stolons; leaves large, reddish without, green within, sharply attenuate to a short point; hairs short and stiff. It has not yet flowered at Floraire.

Received from M. Pauli in 1921.

S. RUBRUM Hort.

Another form of *TECTORUM*. Rosettes globular (6–7 cm. in diameter); the leaves furnished with hairs long and transparent with a slight tuft at the top, which suggests a hybridization with the group *Barbatulae*; stolons long.

Received from M. Pauli in 1921.

S. RUPESTRE Rouy & Cam., Flor. France, vol. VII, p. 130.

This is a subspecies of *TECTORUM* which its authors make the type of the varieties *affine*, *beugesiacum*, *brachiatum*, *brevistylum*, *decoloratum*, *jura-*

tense, *praestabile*, *speciosum*, and *violaceum*. It has moderate-sized rosettes, stalks 25–30 cm. in height with leaves abundantly glandular pubescent, great, many-flowered panicles with branches more or less elongate; flowers reddish brown; stamens hairy, not changed into carpels as in *tectorum*.

Mountains of Europe, mostly Central Europe. We have received it from Chaté in 1887, from Van Houtte in 1890, from Kesselring in 1911.

S. rusticanum Hort. See *S. CALCARATUM* Baker.

S. RUTHENICUM Hort.

S. arenarium Stev.

Large rosettes; stalks 25–28 cm., robust, erect, with oblong-lanceolate leaves, puberulous on both faces, reddish at their tip, acuminate, with brown points; large oblong panicles with 12 to 15 short, divided branches; flowers large, pale lilac or shining gray; petals narrow-lanceolate, reddish purple at the base, two and one-half times longer than the calyx, downy on the margin. Related to *ZELEBORI*.

We have received the horticultural type as seeds from Petrograd in 1893, from Defregger in 1895, from the Botanic Garden at Geneva in 1895, from Amsterdam in 1895, from Elliott in 1911, from Kesselring in 1906 and 1911, from the Paris Museum in 1915.

S. SABAUDUM Jord. & Fourr., Brev. Pl. Nov. fasc. II, p. 29.

This is a *VENUSTUM* with the leaves of the rosettes long-acuminate, those of the stalks spreading at the base, and more short-acuminate; flowers smaller; lobes of the calyx erect; petals less washed with rose; styles longer. Monts Vergys (Haute-Savoie).

S. saxosum Jord. & Fourr. See *S. BRACHIATUM* Lamotte.

S. SCHLEHANI Schott, Oestr. Bot. Wochenbl., III, 1853, p. 12.

Related to *GLAUCUM*; large rosettes with spatulate leaves, tips rounded to cuspidate; stalks 15 cm. high, very

pubescent, with leaves puberulous and pubescent-ciliate, gray-green with reddish tips; inflorescence umbellate with 5-6 branches; petals rose, downy on the margins, edged white.

Rocks of Dalmatia. We have received it from Prague in 1890, from Tottenham (Holland) in 1895, from the Botanic Garden of Brunswick in 1895, from Haage & Schmidt in 1904, and from the Paris Museum in 1915.

S. SCHNITTSPAHNI Lagg., Regens. Flora, 1858, p. 659.

S. longifolium Schnittsp. which has never been published.

S. funkii Lej.

Related to *TECTORUM*; rosettes of medium size; leaves ovate-lanceolate, deep green and bronze, ending in a short downy point; stalks rigid, covered, through all the panicle as well, with long curving hairs; petals broad-lanceolate, twice as long as the sepals, reddish brown passing to clear rose; stamens much shorter than the petals.

Valley of the Viège, between Stalden and Randa where I have never found it. We received it in 1911 from Kesselring.

S. schottii Baker, Gard. Chron. 1874, II, 103. See *S. GLAUCUM* Tenore.

S. SCHOTTH Lehm. & Schnittsp., Ber. Offen. Ver. Naturk. I, 1860, p. 35.
S. acuminatum Baker.

Medium size rosettes; leaves green, flat on upper surface, rounded beneath, ending in a white tip; stalks up to 30 cm.; flowers clear reddish brown, with petals 3 times as long as the sepals, which are very hirsute.

Tyrol.—In 1894 I collected it in the Bergamasque Alps. Received in 1888 from Prague, in 1895 from the Botanic Garden of Laybach, in 1895 and 1899 from the Botanic Garden of Erlangen, and in 1911 from Kesselring.

S. SEGUIERI DC., Prodromus, III, p. 414.

S. stellatum Pollini.

Mentioned as having an herbaceous

stalk, compact, with opposite leaves, obovate and occurring originally in Monte Baldo. I have considered it, judging from specimens received from Paris and Kesselring, as *CALCARATUM* Baker. It is a mythological species of which one can never find a complete description.

S. SEUSANUM Jord. & Fourr., Brev. Pl. Nov. fasc. II, p. 35.

This is *METTENIANUM* with large rosettes; leaves sharply acuminate, the stem leaves rounded at the base; panicles in short corymbs, with few branches erect and elongate; flowers large (3-3.3 cm. in diameter).

Found near Gap, on Mont Seûze.

S. SPECIOSUM Lamotte, Mém. Acad. Sc. Clermont, VI, 1864, p. 265.

S. rigidum Jord. & Fourr.

TECTORUM with pedunculate flowers, petals of deep rose color, broader and less long; plant strongly tinted with red and turning deep bronze in winter, like many of its relatives elsewhere.

Mont Viso, La Grave (High Alps). I collected it in the picturesque valley of Champorcher (Graian Alps) in 1910 and we have received it from Vilmorin at Verrières and Kesselring, in 1911.

S. SPINULIFOLIUM Hort.

Plant forming a dense clump, so dense that it rises in the center like the crown of a hat. Rosettes of medium size; leaves oblong-lanceolate, reddish, acuminate passing insensibly to a bright red point; panicles 4-5 cm. broad with numerous short branches, carrying 5-6 flowers with narrow lanceolate petals of reddish brown striped darker toward the base, twice as long as the calyx.

We received this from the Botanic Garden of Brussels in 1886, from Petrograd, as seed, in 1893; from Haage & Schmidt in 1904, and finally, in 1911, from Kesselring.

S. stellatum Pollini, Flor. Veron, II, p. 114. See *S. seguierei*, and also as doubtful as that species.

S. TECTORUM L., Sp. Pl. p. 464.

S. ciliatum Gilib.

S. montanum Sibth. & Sm.

This is the most widely distributed type, forming a group to which are attached a number of the species and varieties that have been described by Schott, Schnittspahn, Lehmann, Lamotte, Boreau, and particularly Jordan and Fourreau. A good colored illustration of the type has been published by Seeboth (Alpenflora fig. 39); see also Correvois (Champs et Bois fleuris, pl. 43). The type has large to medium sized rosettes with flat leaves, oblong-obovate or acuminate, with tips lacking in hairs; the stem leaves more narrow; flowers rosy-bronze, more or less pedicellate at least the lower ones, rarely sessile, arranged in a scorpioid panicle; sepals lanceolate-acute; petals narrow-lanceolate, pubescent, twice as long as the calyx; carpels oblong-acuminate, erect, somewhat divergent, showing a space in the center.

Found everywhere, especially on calcareous rocks over all Europe, except in the most northern regions.

S. TRIFURCUM Jord. & Fourr., Brev. Pl. Nov. fasc. II, p. 41.

A *BOUTIGNYANUM* in which the rosettes have leaves broadly obovate-cuneiform, sharply contracted; panicles trifurcate.

Gède (High Pyrenees).

S. TRISTE Baker, Gard. Chron., 1879, II, p. 39.

Rosettes 5-8 cm. in diameter; leaves oblanceolate-cuneiform, of a dark green at the base, all the rest being dark bronze or brilliant red; stalks robust as in *TECTORUM*; leaves reddish bronze; lower flowers distinctly pedicellate; calyx covered with reddish brown hairs; corolla a beautiful rose; stamens in a circle, much shorter than the petals. Baker says it is a rare form of which he does not know the origin.

We received it from Van Houtte in 1884, from the Botanic Garden at Geneva in 1893, from Petrograd in

1894, from Zurich, as seed, in 1895, from Brunswick and Rostock in 1897, and finally, in 1910, from Cambridge.

S. TRISTE BICOLOR Hort.

Sent us in 1911 by Kesselring. It is identical with *BICOLOR*.

S. VALIDUM Jord. & Fourr., Brev. Pl. Nov. fasc. II, p. 31; Icones, fig. 139.

Differs from *RHODANICUM* in its short dense panicles and erect branches; its smaller flowers with linear-lanceolate petals.

S. VELLARUM Lamotte, Mém. Acad. Sc. Clermont, VI, 1864, p. 280.

Rosettes hardly compact, 4-5 cm. in diameter, with leaves glaucous green, not very dark, obovate-oblong, flat above, rounded and flabby, keeled beneath, edged with hairs slightly recurved; stalks 20-25 cm. with short glandular pubescence, mixed with some very long hairs, divided at the tip into three bifid branches, sometimes accompanied by small, few-flowered branches lower (on the stalk); flowers pale rose, veined with carmine.

Granite rocks on the upper Loire (Haute-Loire) and the Loire.

S. VENUSTUM Jord. & Fourr., Brev. Pl. Nov. fasc. II, p. 29; Icones, p. 138.

An elegant plant related to *AMBIGUUM*; rosettes smallish; leaves oblong-cuneiform with narrowly contracted points, long acuminate, glaucous green and short ciliate; stem leaves narrow long acuminate, yellow green, the uppermost finely tinted with rose; stalks rose, downy; flowers rather large (2.5-3 cm. in diameter) in rather small panicles.

Mont. Arbeiran (Savoy).

S. VERLOTHI Lamotte, Mém. Acad. Sc. Clermont, VI, 1864, p. 275.

S. americanum Hort., Jord. & Fourr., Icones, fig. 149.

A form of *TECTORUM* from the Dauphiné, very closely related to *BLANDUM* Schott. Rosettes small, of

a deep green, shining; leaves elongate and long acuminate.

Rouy considers it as a hybrid of *TECTORUM* and *MONTANUM*.

Alpes du Dauphiné. We received it in 1884 from Paris, from Chaté in 1885, from Tottenham (Holland) in 1895, from Kew in 1898, from Göttingen in 1898, and from Kesselring in 1911.

S. VIOLACEUM A. Br., Gard. Chron.

Very closely related to *GLAUCUM*, but of a coloring more uniformly violet.

We received it in 1886 from Chaté, from Van Houtte in 1888, from Tottenham (Holland) in 1895, from the Botanic Garden in Geneva in 1895, and from the Paris Museum in 1915.

S. VIOLASCENS Jord. & Fourr., Brev. Pl. Nov. fasc. II, p. 334.

Related to *JURATENSE* from which it differs in its very late flowering, its much larger rosettes (8-10 cm. in diameter); leaves of a glaucous violet, tinted with purple from base to tip, the stem leaves truncate at the base; flowers in erect, not-spreading panicles.

High Alps near Gap. I found it

in the valley of Fully sur Martigny (Valais) in September, 1910, and in the southern Jura.

S. WIDDERI Lehm. & Schnittsp. Ber. Offenb. Ver. Naturk., I, 1860, p. 36, with a colored plate.

Rosettes of medium size; leaves linear spatulate, short acuminate, lightly striped with gray and red at the base; stem leaves slightly recurved, with broad brown stains at the tip; stalks 20-25 cm., glandular; flowers of medium size; petals linear, once again longer than the calyx, downy beneath, red at the base and greenish toward the top; stamens with red-brown filaments, slightly longer than the style. Related to *WULFENI* but with rose colored flowers and petals twice as long as the sepals. Possibly it may be a hybrid?

Discovered by the pharmacist Kilder in the Tyrol in 1856. It grows in Carinthia and Professor Vaccari (*Annali di bot. du Prof. Pirotta*, vol. III, fasc. 2) says that he found it on Mt. Masucco below Bormio (Valtelline).

(To be continued.)

Tendencies in the Development of American Horticultural Associations, 1800--1850

By HAMILTON TRAUB

[Continued from page 26, January, 1930]

NATIONAL POMOLOGICAL ASSOCIATIONS, FORM 1848

Toward the middle of the century, as we have seen, the horticultural industries, especially pomology, were attracting more than sectional im-

portance, and the increasing importance of fruit growing coupled with the fact that nomenclature was in a confused condition made necessary a further development in the associations for promoting horticulture.⁴² Up to 1848 such organizations had been only of

⁴²C. M. Hovey, in *Magazine of Horticulture*, 1848, p. 104, "To say nothing of the great confusion of synonyms, we have up-

wards of a dozen well-known fruits, which have been rechristened."

local importance, but the solution of practical questions of general concern demanded an association with a wider scope. The emergency was a pressing reality, and a typical case need only be cited to make this plain.

In the December issue of the *Magazine of Horticulture*, 1847, C. M. Hovey describes the "Melon" apple, synonyms: "Norton's Melon," "Watermelon," specimens of which had been forwarded to him with the information that the only description previously published had appeared in a local nursery catalog.⁴³ In the January issue of the same periodical, 1848, Ellwanger and Barry explain that the fruit in question had been previously described in the *Albany Cultivator* of 1845, and in the *Boston Cultivator* of the same year, as "Norton's Melon," and that they have thought it well to place these facts before him and the readers of the *Magazine* "for the purpose of preserving, as far as possible, uniformity of nomenclature." Hovey adds that the "agricultural papers of the country are now so numerous that we do not pretend to look out the little pomological information which they may occasionally contain. * * * It is scarcely to be expected that pomologists will look to agricultural papers for descriptive accounts of new fruits, when there are the legitimate channels—horticultural periodicals—for the express purpose of communicating such information. * * * This variety has been described under three names, all of which would have been avoided, had our correspondents sent their account of it to us. The Massachusetts Horticultural Society have recently described it as the "Watermelon."⁴⁴

Such occurrences as this were not uncommon, and by 1848 "upwards of a dozen of the well-known fruits [had] been rechristened," to say nothing of the many minor varieties. In order to realize the gravity of such diffi-

culties and the ease with which they could arise, one has but to consider the wide territorial extent of the United States. This condition has been long existent, but only with the increasing interest in pomology did it become expedient to seek a solution for the problem.

The keen intellect of the pomologist, T. S. Humrickhouse,⁴⁵ with a sound historical background, was apparently the first that suggested a solution for the problem, and his ideas regarding a uniform nomenclature were first published in the *Magazine of Horticulture* in 1846. With clear insight he goes to the very foundation of the matter even so far as to touch the basic economic reason for the consideration of the question at this time. His set of seven rules are of no little importance historically for it was these that precipitated the discussion that led to further developments. Only the concise statements of Humrickhouse are given below—the lengthy expositions under each head have been purposely omitted:

"First: That every cultivator note the sources from whence his varieties have been obtained; and where identity of any two or more be suspected, or where misnomer of any kind be suspected, that trees of those kinds be immediately procured by him from other and different sources.

"Second: That when a synonym is detected, a return shall be had, at once, to the original name.

"Third: That no test but actual inspection and comparison of the fruits, shall be regarded as sufficient to determine identity or misnomer.

"Fourth: That in case of detected misnomer, if the fruit, after full trial and examination, be deemed worthy of being retained in cultivation and be an unnamed variety, he who first makes the discovery may give it a name; or he may refer it to the most convenient horticultural society for that purpose, provided, that what-

⁴³*Magazine of Horticulture*, 1847, pp. 537-538.

⁴⁴*Ibid.*, 1848, pp. 13-14.

⁴⁵Of Coshocton, Ohio.

ever action is had be immediately made public.

"Fifth: That the names given to new seedlings be sufficiently distinctive to guard against and prevent their being confused with previously named sorts.

"Sixth: That cultivators shall not, in any case, disseminate a kind, unless certain that it is true to name.

"Seventh: That correct orthography, in nomenclature, be constantly aimed at."⁴⁶

While the rules suggested by Humrickhouse are not in conformity, in all particulars, with our present ideas regarding the rules of nomenclature, they served the convenient purpose of a starting point for more extended discussion. As interest in the question rapidly increased, rules of nomenclature were adopted by "associations * * * both horticultural and agricultural, but nearly in every case with some variation, and, in several, with such important ones; as to give them but very few features in common."⁴⁷ By 1848, the horticultural societies of Massachusetts, Rochester, Buffalo, and similar societies elsewhere, as well as the New York Agricultural Society, had adopted each its own code of pomological nomenclature.⁴⁸ It is beyond the scope of the present discussion to examine all of these codes in detail. It will suffice to concentrate our attention upon two of the more prominent sets of rules in order to establish clearly the divergence of opinion. The code adopted by the Massachusetts Horticultural Society was fairly comprehensive for an early statement of the case:

"I. No new seedling fruit shall be entitled to a name, or to pomological recommendation, which is not at least equal, if not superior, to any similar varieties of the first rank already known; or which, if only of second rate flavor, is so decidedly superior in vigor, in hardiness, or productiveness,

to varieties of the same character already known, as to render it well worthy of cultivation.

"II. The originator, first grower, or he who first makes known a new native variety of merit, shall be entitled to suggest a name for such variety, which name, if a suitable one (i. e. coming within the rules of nomenclature), shall be adopted by the writer describing the fruit for the first time. But if the name proposed is inappropriate, or does not come within the rules, then the describer shall be at liberty to give a name.

"III. No new native fruit shall be considered as named until the same has been accurately described, in pomological terms, by some competent person conversant with existing varieties, some pomologist of reputation, or the standing fruit committee of some established horticultural society.

"IV. The description shall embrace the following particulars: 1st. The form and exterior color, the texture and color of the flesh, and the flavor of the fruit, with the addition, in stone fruits, of the size of the stone, adherence or non-adherence of the flesh, form of the suture, and the hollow at the stem, and, in kernel fruits, of the size of the core and seeds, the length, position and insertion of the stalk, and form of the eye. In peaches, the form of the leaf-glands and size of blossoms; in grapes, the form of the bunches; and, in strawberries, the character of the blossoms, whether staminate or pistillate; and also, where there is any marked character in the foliage, growth of the young wood, or bearing tree, the same shall be given.

"V. The name of the new variety shall not be considered as established until the description shall have been published in at least one horticultural or one agricultural journal, having the largest circulation in the country, or some pomological work of large circu-

⁴⁶Magazine of Horticulture, 1846, pp. 53-57.

⁴⁷Magazine of Horticulture, 1848, p. 97; Horticulturist, Vol. II, p. 436.

⁴⁸Ibid.

lation and acknowledged standard character.

"VI. In giving names to newly originated varieties, all harsh, vulgar, or inelegant names shall be avoided, such as "Sheepnose," "Hogpen," etc.

"VII. No new names shall be given, which consist of more than two words, excepting only when the originator's name is added.

"VIII. Characteristic names, or those in some way descriptive of the qualities, origin, or habit of the fruit or tree, shall be preferred.

"IX. All superfluous terms shall be avoided.

"X. Before giving a name to a new fruit, its qualities should be decided by at least two seasons' experience.

"XI. When two persons have named or described a new fruit, then the name and description first published, if according to the rules herein indicated, shall have priority.

"XII. No person, introducing new fruits from abroad, shall be allowed to re-christen the same, or give them his own; but shall submit the same to some competent pomologist to ascertain the true name.

"XIII. In deciding the names of fruits already described, the latest edition of the 'Catalogue of the London Horticultural Society' shall be considered the standard European authority, and the latest edition of Downing's 'Fruits and Fruit Trees of America' the standard American authority."⁴⁹

The set of pomological rules adopted by the Executive Committee of the New York Agricultural Society in 1848, constitutes another, and a concise, statement of the case:

"Rule 1st.—No new seedling fruit shall be entitled to a name or to pomological recommendation, which is not at least equal to any similar varieties of the first rank already known, or which if of second rate flavor, is so decidedly superior in vigor, hardiness, or productivity, to varieties of the

same character already known, or which may be found of such superior excellence in particular regions, as to render it well worthy of cultivation.

"Rule 2d.—The discoverer, originator, or he who first makes known a new variety of merit, shall be at liberty to confer a name on it, which name, if appropriate, and coming within the rules of nomenclature, must be adopted by the writer describing the fruit for the first time; but no new native fruit can be considered as definitely named, until the same has been accurately described in pomological terms, by the fruit committee of some State Agricultural or established Horticultural Society, or by some pomologist of reputation, conversant with existing varieties, or until such description shall have been published in at least one Horticultural or one Agricultural Journal, or some pomological work of acknowledged standard character; and when two persons have named or described a new native variety, then the name first published, if consistent with the above, shall be the name of the fruit.

"Rule 3d.—The description shall embrace the following particulars: The size, form, and exterior color; the texture and color of the flesh; the flavor and time of ripening of the fruit, with the addition in the stone fruits of the size of the stone, adherence or non-adherence of the flesh, form of suture, and the hollow at the stem; and in kernel fruits, the size of core and seeds, the length, position, and insertion of the stalk, and form of the eye. In peaches, the form of the leaf, glands, and size of the blossoms. In grapes, the form of the bunches, and in strawberries, the character of the blossoms, whether staminate or pistillate, and also, where there is any marked character in the foliage, growth of the young wood or bearing tree, the same shall be given.

"Rule 4th.—In giving names to newly originated varieties, those in some way descriptive of the qualities, origin or habit of the fruit or tree, or

⁴⁹Magazine of Horticulture, 1848, pp. 98-103.

those which commemorate a particular place or person, shall be preferred; all harsh and inelegant names must be avoided, and unless the originator's name be added, no names shall be given which consist of more than two words, and fruits introduced from abroad, shall not be renamed.

"Rule 5th.—Before giving a name to a new fruit, its qualities should be decided by at least two seasons' experience, and no new fruit can be safely recommended for general cultivation until the same has been tested and found valuable, in more than one locality."⁵⁰

While these codes are similar in most respects, such differences, for instance, regarding the definition of what constitutes publication and the standard authority adopted, defeat the very purpose, uniformity, for which the rules had been adopted. Thus the situation had reached a stage when cooperation on a wider than a local scale, was necessary to cope with a problem confronting the pomologists since no one local society had sufficient prestige to make its mandate effective over more than a local area. Out of the cross currents thus engendered, the codes adopted by the local horticultural societies, and the attempt of the New York Agricultural Society to legislate in the field of horticulture, developed a situation almost immediately that seemed grave for a time, but in the end proved capable of amicable settlement and led finally to effective national co-operation in the field of pomology.

In 1847 a State meeting of pomologists and fruit growers, the Ohio Nurserymen's Convention, apparently the first meeting of its kind, had been held at Columbus, Ohio,⁵¹ but this

was purely a regional gathering and a foreshadowing of greater events to follow.

The New York Agricultural Society took the initiative, however, and called a national convention of pomologists and fruit growers to be held during its fair at Buffalo beginning September 5, 1848. The objects of the convention were to engage in general discussion, "to identify synonymes, to correct errors in the names of our fruits, and to establish a uniform nomenclature."⁵² But no sooner had the call been issued than others, including some of the foremost pomologists of the day, "proposed to hold another convention at New York, in October."⁵³ The counter movement was sponsored chiefly by the horticultural societies of Pennsylvania, Massachusetts, New Jersey, New Haven, and the Board of Agriculture of the American Institute of the City of New York. Downing, in the columns of the *Horticulturist*, upheld the New York convention. In reply to the question of the propriety of counter action, Downing held that Buffalo was too remote, and remarks, "Let our Western friends crystalize their experience at the Buffalo Convention, and afterwards by an able delegation, add it to the accumulated facts which will be presented at the New York Convention."⁵⁴ Although a resident of Boston, C. M. Hovey seems to have been less prejudiced, and had from the first sponsored the Convention proposed by the New York Agricultural Society on the principle of priority, and as a result of the diverging opinions there loomed a split in American pomology, the outcome of which no one could have predicted at the moment.

The Buffalo Convention assembled as scheduled September 1, 1848. This

⁵⁰Magazine of Horticulture, 1848, pp. 67-69. Hovey endorses these rules with the reservation that they should be suggestions rather than rules.

⁵¹Magazine of Horticulture, 1848, p. 535; *Horticulturist*, Vol. II, pp. 342, 435.

⁵²*Ibid.*, p. 327.

⁵³Hovey, in sympathy with the work of the N. Y. Agri. Society, remarks,—“probably with a view to carry out their own designs, knowing that at Buffalo they would have but little influence.” *Ibid.*

⁵⁴*Horticulturist*, Vol. III, p. 48.

was the first meeting of its kind, national in character, ever held. Invitations had been sent out in the Spring to the horticultural societies of the country to appoint delegates to the Convention. The number of delegates assembled was between fifty and sixty, from Massachusetts, Vermont, Connecticut, New Jersey, New York, Pennsylvania, Ohio, Michigan, Indiana, Illinois, Wisconsin, Missouri, and the Canadian Provinces,—fourteen states and provinces in all.⁵⁵ The more active members who participated in the discussions were: F. W. Hayes, New Jersey; W. R. Prince, Flushing; Charles Downing, Newburgh; D. H. Wendell, Albany; P. Barry, Rochester; J. W. Bissell, Rochester; N. Goodsell, Rochester; B. Hodge, Buffalo; W. R. Coppock, Buffalo; J. J. Thomas, Macedon; L. F. Allen, Black Rock, all in New York; F. R. Elliott, Cleveland; H. H. Coit, Euclid, both in Ohio; J. D. G. Nelson, Fort Wayne, Indiana; J. C. Holmes, Detroit; A. T. Prouty, Kalamazoo, both in Michigan; J. A. Kennicott, Chicago, Illinois; Thomas Allen, St. Louis, Missouri; C. Beadle, St. Catharines; and James Dougall, Amherstburgh, both of Canada.⁵⁶

The sessions lasted three days, and merely a beginning was made in the discussion of fruit varieties. It was realized that the task which confronted the American pomologist would require years for its solution. It was, therefore, decided upon to hold similar conventions in the future to be called by the New York Agricultural Society. No permanent officers, committee, or board of directors was appointed. Prior to adjournment the convention was dignified by the name North American Pomological Convention.⁵⁷

The National Convention of Fruit-growers met at New York City during

the fair of the American Institute, October 10, 1848. The delegates assembled at Judson's Hotel, but the "room not being sufficiently spacious to accommodate all the delegates (and the displays of fruits) the meeting adjourned to Clinton Hall."⁵⁸ It was the most important assemblage of horticulturists ever brought together in the United States up to that date for almost all the Northern States were represented, and "not only was almost every horticultural society in the country represented, but a large number of the leading agricultural societies sent delegates * * * nearly all the leading fruit growers and pomologists of the country were present."⁵⁹ The convention resolved itself into a permanent national association under the name American Congress of Fruit-growers, and appointed committees to collect information and report at the next meeting. Mr. M. P. Wilder was elected president of the Congress. In addition, seven vice-presidents and three secretaries, were chosen.⁶⁰

As there was no room for two national associations of this character, the question at once arose as to which of the two had the legitimate claim to recognition. This led to a journalistic controversy. When certain members of the North American Pomological Congress issued a call for a new convention to be held at Syracuse in September, 1849, Downing, in the pages of the *Horticulturist*, did his utmost to discredit the call, remarking that the Buffalo meeting "was considered a state convention * * * called by the president of a state society and dissolved without the appointment of a single standing committee or board of officers; dissolved only to be called anew by the State Society whenever and wherever the latter should hold its annual fair * * * it has no claim to a permanent national

⁵⁵Ibid., p. 192.

⁵⁶Magazine of Horticulture, 1848, pp. 535-542. Number of delegates reported as between 70 and 80. See also *Horticulturist*, Vol. III, p. 192.

⁵⁷*Horticulturist*, Vol. III, pp. 421-424.

⁵⁸Ibid., p. 246.

⁵⁹Magazine of Horticulture, 1848, p. 508.

⁶⁰*Horticulturist*, Vol. III, p. 246; see also Appendix A, below.

organization."⁶¹ The meeting at Syracuse was held, however, in spite of the objection of Downing and others. A permanent organization was effected, and officers elected. Dr. J. A. Kennicott, of Illinois, was elected president, to be assisted by six vice-presidents; F. R. Elliott and B. Hodge were elected secretaries.⁶² On October 2, 1849, the second meeting of the National Congress of Fruit-growers was held in Castle Garden, New York City.⁶³

At the first meeting of the North American Pomological Congress efforts had been put forth to come to an understanding with the National Congress of Fruit-Growers, but nothing was accomplished. At the Syracuse meeting, a second resolution was passed in favor of a union of the two national bodies,⁶⁴ and a committee of five was "appointed * * * to confer with a similar committee to be appointed by the approaching Congress of Fruit-growers to effect a combination of the two national organizations into one, and promote uniformity in Pomology."⁶⁵

The situation was undoubtedly grave, but probably not as serious as one would be led to believe by reading the controversial statements appearing in the *Horticulturist*, and the *Magazine of Horticulture*. J. J. Thomas throws light upon this question in the *Cultivator* of 1849: "From various articles which have appeared in the *Horticulturist*, and other periodicals, it appears quite evident that there is a very erroneous opinion of those two conventions [the Buffalo and New York pomological congresses] * * * we believe that not five persons, having any connection with either, desire any rivalry, or wish to assume any hostile attitude toward the other."⁶⁶ The desire of the majority seems to have prevailed, for in the first years of the following period, in 1850, the successful consummation of the union was accomplished by the fusion of the two organizations into the American Pomological Society which was destined to perform a great mission during the latter half of the Nineteenth Century.

⁶¹Ibid., pp. 421-424.

⁶²Ibid.

⁶³*Horticulturist*, Vol. IV, p. 192.

⁶⁴Ibid.

⁶⁵*Albany Cultivator*, 1849, p. 308.

⁶⁶Ibid., p. 245.

Dwarf Coconuts From Malaya

By ROBERT A. YOUNG

Coconuts are generally thought of as growing on tall trees that must be climbed with the aid of special devices in order to gather the nuts. Most coconut trees, indeed, do grow to such height, but there are also dwarf kinds from which, at least during

the first few years of bearing, one can pick the fruits while standing on the ground. Three varieties, or races, of these dwarf coconuts introduced from Malaya in 1921 are now growing in southern Florida, and there are fruiting trees of them at the Chapman Field



Edward Simmons

[*Courtesy U. S. Department of Agriculture*]

A nine-year-old yellow dwarf Malay coconut tree with trunk eight feet high

Plant Introduction Garden of the United States Department of Agriculture, near Coconut Grove, Miami, Florida. A brief account of this dwarf type of coconut¹ may be of interest to readers not familiar with it.

It may be remarked at the outset that the ordinary tall coconut palm is a fairly rapid grower and soon attains the proportions of a tree. As it does not begin to bear until the sixth or eighth year and the crop is borne near the crown of the tree, the gathering of the nuts is from the beginning attended with labor and some difficulty. The dwarf trees not only grow more slowly in height but the varieties selected for commercial cultivation often begin to flower in their third year and to ripen nuts in the fourth. The fruits sometimes hang so low as to touch the ground during the first year of bearing. This feature of the dwarf type is largely what led to the original introduction of the nuts in 1921 for planting by Mr. Hugh Matheson, a large grower of coconuts in southern Florida. Apropos of the size of the tree, Dr. David Fairchild, of the Office of Foreign Plant Introduction, Bureau of Plant Industry, jokingly wrote the sender of the nuts as follows:

"Thank you very much indeed for sending the coconuts. If they behave here like the palm on the right of your excellent photograph, this coconut will be a great thing for Florida. What they want down there is a coconut for the back yard. They are in the habit of sending a little boy out for a coconut, and he comes back with tears in his eyes because he can not climb the tree, for although the Florida

boys are very agile they can not touch the conventional coconut gatherers of the Tropics, the monkeys."

Dwarf coconuts are found in Java, the Malay Peninsula, Philippine Islands, Tahiti, and elsewhere in that quarter of the globe. There are many different dwarf varieties, and while some of these doubtless have arisen from certain others, investigators believe that dwarf forms have on rather rare occasions and in different places sprung from the tall coconut types. There appear to be distinct races of these dwarfs, which tend to come true from seed even in mixed plantings, and it is believed that they are to be considered as true mutants.

The dwarf coconuts of Malaya of commercial importance are of three races: The Nyior (also Nyiur) Gading, or Yellow coconut, of which the husk of the fruit is ivory yellow; the Nyior Rajah, or Red coconut, having an apricot-red or golden yellow husk; and the Nyior Puyah (also Pujoh), or Green coconut, with a green husk. Trees of the three are growing at the Chapman Field Plant Introduction Garden. The Yellow is said to be the sweetest of coconuts as well as being very rich in oil. It is the most highly prized by the Malaysians for domestic use. A quotation from Malayan Folk Lore (Winstedt) speaks of "Nyior Gading, the golden coconut, only to be found in princes' gardens." It may be remarked that the term "golden" is hardly applicable to this variety, ivory-yellow being more accurately descriptive.

The Red dwarf (Nyior Rajah) is also known as the King coconut. It is well known by that name in Ceylon, and Doctor Fairchild has reported from there that not only is it one of the most valuable varieties for drinking and household purposes but that as a landscape tree it excels other varieties.

Although the Yellow dwarf coconut (Nyior Gading) was formerly planted in preference to the others for com-

¹The data relative to coconuts in Malaya have been taken from correspondence with Mr. Will P. Handover, Port Dickson, Fed. Malay States, in 1920-21, and from papers by Messrs. H. W. Jack and W. N. Sands, in the Malayan Agricultural Journal, Vol. 10, No. 1, and Vol. 17, No. 6.

mercial purposes, because it was thought to be the most prolific, it has proved in recent years to be a less desirable commercial type in Malaya than either the Red or the Green. The principal counts against it are the difficulty of curing the meat and a lack of vigor in the trees. The former probably is associated with the high sugar content, while the lack of vigor would be a natural result of the reduction of green coloring matter (chlorophyll) in the plant generally. The Red and Green dwarf races have somewhat greener leaves and, consequently, more vigor. They also appear to yield a little larger quantities of copra (cured coconut kernel), the Green leading slightly. It is of some practical interest that experienced observers have found it not difficult to separate even the seedling plants of the three dwarf races by means of the difference in shades of coloring.

In Malaya, dwarf coconut trees have given an average annual production of about 90 fruits per tree in the fifth to the seventh years from seed, which is a much higher number than is obtained from tall and semi-tall trees. The coconuts are smaller, however, than those from the larger trees, and have thinner meat, so that the quantity of copra from a single tree is smaller than that of an average tree of one of the taller types; but, since 90 or more dwarfs per acre are grown as against 50 tall trees, the advantage in production of copra rests with the dwarf type so far as the present behavior of the trees is concerned. The trees produce with much greater uniformity both in quantity and quality, than do those of the tall type. This is thought to be due to the higher genetic purity of the dwarf races. The development of pure high-yielding strains of tall trees would, of course, bring about a change in these respects. It has been calculated from studies by the investigators in the Federated Malay States that under present conditions, with both

types of trees in full bearing, the copra yield per unit area should be about fifty per cent greater from the dwarf than from tall trees.

Those unfamiliar with coconuts in the immature stage will perhaps be interested to know that when the fruit has reached full size the space inside the nut is filled with a very rich liquid called coconut milk. The kernel, or flesh, of the coconut is formed gradually on the inner surface of the shell from the food materials composing the "milk." This development begins around the embryo, at the stem end of the nut, and proceeds toward the opposite end in a manner somewhat suggestive of the growth of new bark on an injured tree trunk.

As the kernel grows, the nutrient fluid becomes more watery, and is reduced in volume. Coconut milk is highly esteemed for drinking purposes from about the beginning of development of the kernel until it is completed. Often it is extracted for the use of the owners of estates in the Orient and the nuts with the kernels are left for the servants. At a certain stage the freshly formed soft kernel can be eaten from the shell with a spoon.

The question will naturally arise in the minds of some as to whether and when it is going to be possible for interested persons in southern Florida to obtain dwarf coconuts to plant. This is a question that can not be answered here. It will doubtless depend largely on whether people who want to eat these coconuts get first chance at the limited supply that there will be for some time to come from the present commercial planting.

Besides being smaller than the ordinary coconut, the dwarf nut has a thinner shell and thinner meat, and the texture of the meat is slightly different from that of the larger type. One can only speculate as to whether public taste and fancy will "elect" the dwarf type of coconut in the United States when it has the chance to choose.

What's In a Name¹

By A. E. WALLER

The Botanical Profession which I humbly represent has painstakingly and faithfully been engaged for many years, centuries, on a problem which only the professed botanists can solve. It is to give the precise individual name to each plant. Simple as this program may sound in the bare statement, in its solution it is amazingly difficult. Therefore all persons interested in knowing the names of plants are looking forward with great interest to the summer of 1930. There is to take place, this time in England, an International Congress which is expected to accomplish much in bringing order out of chaos in the important tasks of naming plants. It is expected that through the work of the coming congress a harmonized procedure will be evolved so as to bring nearer to reality the goal of one name distinct for each plant.

In this Congress the Horticulturists need representation and need to have their views set forth. For they have shown their impatience with the apparent lack of interest on the part of the botanists toward what seems a most pressing obligation, namely, getting names for the garden and orchard plants attended to at once. They have registered their impatience in the publication of "Standardized Plant Names," with which you are doubtless fully familiar. I, for one, heartily sympathize with the action undertaken by the American Joint Committee on Horticultural nomenclature in boldly outlawing some plant names and retaining others. But whether their action becomes the final word in such matters remains to be seen. The most welcome suggestion is that of dropping the use of Latin names in imitation of species names for hybrids and other varieties of garden origin. At best a hybrid variety is an ephemeral

thing. As styles alter and produce changes in gardens so certain hybrids have their popularity and vanish. It is of little moment as long as the parent species are available. New forms in keeping with current tastes can be prepared at will. And the originators can have all the fun they like in giving new names to the endless chain of varieties. They should obviously not tamper with names that lead to confusion with specific and generic names. Sometimes botanists, a little too eager to supply names, have been the offenders in this particular.

Sincere as is the purpose of the committee on horticultural nomenclature in proposing convenient and understandable names, every member of this audience is doubtless aware that the committee has been criticized as being too arbitrary. It showed impetuosity because action was demanded, and the committee took action. I beg leave to submit that the idea back of the book is even more important than the book.

For fear of being misunderstood, let me say that I regard it as axiomatic that Horticulture is a Botanical Science. Or facing the proposition the other way Botanical Science and its applications in Horticulture are fundamentally the same. The development of this viewpoint is necessary as rather marked distinctions have sometimes been drawn separating Botany from Horticulture as Pure and Applied Science. The botanists have been regarded as impractical as opposed to their eminently practical brethren in Horticulture. It is true that the desire to know all that can be known about plants irrespective of the use to which this knowledge can be put is a strong motivating force for the scientifically minded botanist. Explorer as he is into a world of living organisms with which he can never communicate but which he must as a

¹Papers from the Department of Botany, The Ohio State University, No. 252.

scientist and a philosopher interpret, he is faced with more facts than he can use, so why bother to pick out only useful facts. Or rather, why try to decide which are the facts more useful at the moment, when all facts that he can command will eventually be found inadequate, and he will have to search for some new ones. The applied botanist or horticulturist has an entirely different job. It is not of necessity less scientific and certainly not less philosophic. His work is different on the ground that only the facts applying to a particular useful end are wanted for a given case. The right and useful facts and their interpretation must play a more important rôle than the search for new facts or principles. There have been propositions coming from the captains of industrial research that pure research be stopped for an interval of time to allow us time to squeeze dry the facts already known. But all science is only capable of expansion if at the time we are most using known facts we are getting new ones or inventing procedures to get new ones. If we err it has been on the side of drawing too plainly the differences in the view points between the obviously practical and therefore popular application, and neglecting the impractical background.

You can see that the publications of Standardized Plant Names by the Horticulturists for their convenience is therefore a means of making the botanists who are interested and concerned with *all* plant life aware that certain aspects of their work are of practical importance though they gave no thought to usefulness when they made their discoveries.

Similarly, the Horticulturist is being introduced to the great wealth of the plant kingdom, and learning that each year increases the richness of our store of plants. Putting aside our knowledge of plant reactions, growth, structure, reproduction, geographic distribution, and the application of this knowledge to field, forest and garden,

we can see how botanical science is accumulating facts from the increase in number of known plants. The Greeks knew possibly six hundred plants. John Ray, engaged to bring out a work on scientific international nomenclature in England in 1682 completed his enumeration of 18,000 species of plants in 1704. At the present time there are probably 150,000 flowering plants known and described as distinct species and at least an equal number of flowerless plants. Of cultivated trees and shrubs alone, the scholarly manual recently published by Mr. Rehder includes approximately 6000 forms, of which over 2300 are species.

Is it not clear therefore that with the great increase in the known plants and the facts we want to know about them that we must have both discovery and applications going on simultaneously? That with so much to do we lose no time in having the botanists and the horticulturists engaging in joint labors toward a common goal. That where the botanists have blazed the trails of discovery, we will soon find broad avenues leading to useful, practical fields of work. What has been done is but little compared with what will be done in the future.

It has been pointed out that the common Virginia Creeper had in 1916 no less than six Latin names in use in catalogs. These are *Ampelopsis quinquefolia*, *A. virginica*, *Parthenocissus quinquefolia*, *P. virginica*, *Vitis hederacea*, and *Psedera quinquefolia*. Standardized Plant Names has elected to use the first name given as the Latin designation. In choosing the scientific name for this plant Standardized Plant Names cites the authorities using it, Bailey's *Cyclopedia* and the Economic Herbarium of the United States Department of Agriculture. In Britton & Brown's *Flora of the Northern States and Canada* the plant is referred to *Parthenocissus*. Rehder of the Arnold Arboretum of Harvard uses the same designation. The Seventh Edition of Gray's *Manual*,

edited by Professors Robinson and Fernald of Harvard, prefers *Psedera*. Who is to take the lead?

It is a puzzling question and one that needs to be examined carefully. From the field botanists' standpoint, *Ampelopsis* was once referred to a vine with only a few scattered tendrils at the top of the plant. *Parthenocissus*, on the other hand, has abundant tendrils located on two out of three nodes. On the rules of priority *Ampelopsis* is the older name. Can it be made to absorb both of the existing genera with the result that the other name would be eliminated? Several authorities seem to think it can. The point, however, is not capable of settlement from a study of existing preserved specimens alone. However, in the absence of enough collections that show how variable the plant is we lack adequate claims from the field botanists to make a distinction clear. In order to settle the point, collections from the field need to be taken under the shade of a heavy tree canopy, and where light can reach the plants. Why? Any mature vine growing up to the eaves of a house will show that the light has a marked effect upon the number and the effectiveness of the tendrils. We also need to have the forms gathered together to be grown under careful observation. From this we could determine the hereditary capacity of the plant to produce tendrils. My point is this: since Darwin's time, narrow conceptions of the fixity of species have receded in the face of an overwhelming amount of evidence as to variation. If a survey of the existing specimens were made it could be shown that some vary because of inherited capacities being held in check or in other cases expressed due to the combined action of such environmental and growth conditions as happened to be present.

The modern field botanist, therefore, must not apply a name until he has produced evidence that he has not exceeded the limits of variation which his type specimens permit. In order

to understand his problems he must be adequately trained in both of the newer fields of biological thought, Genetics and Ecology.

Decision as to the correct name, instead of being the first thought of the botanist becomes a matter of mature judgment after all the evidence has been properly weighed and accounted for. Anything less would only add to the existing confusion. Improper judgment can in part account for the confusion that already does exist in the case of Virginia Creeper. To proceed hastily has been shown to be fatal, yet there is the practical need of having temporary names at least, whereby Virginia Creeper can be confidently bought and sold. Does it not become, in practice, a case where honest effort in stock taking and in description is rather more important than the name? The dealer should know whether the plants can climb a vertical brick wall or merely scramble loosely over trees and rocks. How many catalogs using Standardized Plant Names record this important fact? I look forward to the time when catalogs will be prepared in such a careful way as to note the full set of characters possessed by the materials being offered. Is it too much to ask of dealers that they add specimens to the nearest herbarium collection in their respective localities?

Another thing can be shown by this single case of *Amelopsis*. In choosing this name it so happens that the editors selected one little known to the public. Yet the interval that has elapsed is sufficient to have acquainted the public with the name. I wish therefore to bring out clearly this encouraging fact, that no matter which name is proposed it will not take long for the name to become current. I repeat I am in favor of having plant names standardized and foresee that the coming Congress in 1930 will provide such changes in rulings as will aid in bringing about the solution of problems. If it doesn't, it is at least to be hoped that the

waiting public will become informed as to the perplexities and difficulties attending the final designation of names.

Let us take another case, which unfortunately lacks an equally happy solution. It is the genus *Rhus* which stands for Sumach. Attempting to reduce generic names has resulted in putting Sumach, American Smoke Tree, Poison Ivy and Fragrant Sumach, all quite different plants, into the same genus. The poisonous properties of some of the members of this group would seem to the field botanist a real reason for separating the plants so that their distinctions may be well known and emphasized.

If as Standardized Plant Names explains in justifying its arbitrary methods, it wants convenience in horticultural nomenclature this seems to be the place to act as a separator and divide the genus into the sections that have already been proposed and accepted by botanical authorities. The name meaning poison wood, *Toxicodendron*, has been proposed to include Poison Sumach and Poison Ivy, native in this country and the equally poisonous plants in Asia from which the famous lacquered boxes of the Orient are made. Even the lacquer on these boxes causes the well known skin injuries to some people. Fragrant Sumach, which is a valuable garden plant, unfortunately resembles the more erect forms of Poison Ivy superficially. If it were referred to the genus *Schmaltzia* which has been proposed for it, fear and prejudice, to say nothing of the confusion, could be allayed. The garden value of the commonly known Sumachs likewise would not suffer if referred to a genus away from Poison Sumach.

I have chosen these two cases relating to familiar plants to show you that while the classifiers of plants have referred to themselves or their colleagues jokingly as "lumpers" or "splitters" by temperament, that sometimes reducing the number of names is advantageous, and in other

cases increasing the number is desirable. No simple, one-way rules have yet been evolved, nor can any rules be adopted without the cooperation of botanists in all parts of the civilized world. There has never been a time in the history of the world when there was such a wealth of plant material being studied and when intercommunication among the workers is so rapid and easy. Can any one imagine that a condition of chaos in nomenclature will be permitted to remain a stumbling block in the path of advancement in the plant sciences?

We might borrow from music the simple idea of opus and number to designate a species. The analogy is not so remote as it may at first appear. A carefully worked out description of a plant followed by its classification is as genuine a product of creative human intellect as is a musical composition. Beethoven, Opus 27, No. 2 happens to designate the composition known popularly as the "Moonlight Sonata." We have in this a fixed name free from typographical difficulty that could be compared to Genus, Species and Variety, and in addition a common name. Of course musicians have the advantage because each man's work bears an individual stamp. It is not necessary to go through the earth's history to arrive at a designation of the name.

In every age men have asked the same question that you and I ask now. What are the characters of this plant? How is it like and how does it differ from other plants? We have to know two things. First a set of facts that can be learned from the study of plants themselves. This involves having plants on hand to watch development of their characters. It also means recording in descriptions and in preserved specimens the salient features of the plant. The facts are of course always there. The difficulty is to see them clearly and tell about them.

The second point is how to make use of the facts as they accumulate.

For the facts found by one observer may not be found by another. So in addition to scientifically collecting facts, we must philosophically interpret them.

Let us review very briefly how this has been done. Plant classification can be divided into two main periods. First, from the Greeks to Linnaeus, and second from Linnaeus to the present. Important as the early work is in gaining a knowledge of how men learned to do things we may pass over it hastily as being a period in which philosophic guesses ran far ahead of facts. The Greeks, for all of their culture and civilization, were never explorers into nature. The Aegean Sea and later the Mediterranean circumscribed their world. They, however, wrote their philosophy so conveniently that down through the middle ages in Europe men preferred to accept what was in their books rather than painstakingly make discoveries of new facts about plants for themselves. Botany was mainly pharmacy and medicine. The descriptions of Asiatic and Mediterranean plants did not fit the species of Western and Northern Europe. If ghosts could rise, we would have an army of people who died of misprints. The succession of botanists trying to make accurate descriptions of plants and classify them begins in Bologna in 1555 with Ceasalpinus. It includes the distinguished names of Magnol, Lobel, Pena at Montpellier, Tournefort in Paris, and Morrison and Ray in England. There are many others, but I can not stop for them. They classified plants by their fruits, by corollas, by leaves. Tournefort is outstanding among those mentioned as he gave his attention to genera rather than species and his generic names have been retained. The last one of these classifiers is Linnaeus, and his principal work was published in 1753.

It is on two grounds that Linnaeus's claim to fame rests. He applied the so-called Sexual System for naming

plants. That is, he used the number and arrangement of the sex organs, relatively stable characters, as means of systematizing his plants. All plants were grouped as monandrous, diandrous, etc. Secondly, he applied rigidly the binomial system. Each plant was given a generic and a specific name. Now this concept of classification is purely static and it was so recognized. Linnaeus admitted it was artificial, but he went on using it. Collections of plants were sent him from all parts of the world and for the first time there were grouped in one place enough plants to begin classification seriously.

In post-Linnaean times the Natural System developed in France and Switzerland. The principal exponents were Jussieu, Lamarek, and the De Candolles. The fixity of species was fully taught and developed. Plant Families, not capable of assemblage under the Linnaean system, were studied and have given the background to our present classifications.

In England, under Darwin, Joseph Hooker, Bentham, and in the United States with Asa Gray the concepts of evolution brought an entirely new viewpoint to classification and all other human activities. Instead of being static, life was shown to be always changing. While it applies to all human affairs equally, we can see at once in this connection that the systems of classification would have greatly to be enlarged. The origin of species turned out to be very different when the facts were studied, than in the days of the Greeks who spread philosophies before their facts were well marshalled. Not only were there more families of plants than the Greeks knew, but it was found that other parts of the world possessed the important critical forms from which new concepts of families and genera had to be developed. Furthermore, the origin of new forms from natural hybrids and mutations dealt the final blow to the concept of fixity of species.

In 1867 the first International

Botanical Congress was held in Paris. The result was the formulation of the Paris Code, the first set of International Rules on nomenclature.

In Germany the first edition of Engler's Syllabus appeared in 1892. Its seventh edition was published in 1912. At present it forms the basis for the International System. There have been other International Congresses. The fourth one met in Vienna in 1905. This congress determined 1753, the date of Linnaeus's principal work, as the starting point for names. In 1910 the Congress at Brussels adjourned to meet in 1915. The war preventing this, a meeting was held of the sixth Congress in Ithaca in 1926. Avoiding legislation at this time they have prepared materials which will be discussed and enacted in London next year.

In thus briefly sketching some of the changing viewpoints in plant classification, I have endeavored to show that as with all great human undertakings we are bound by the time and opportunities under which we live. Knowledge about plants so

great as to be almost overwhelming has suddenly become heaped up around us. Old principles not broad enough to include the multitude of facts have been discarded. On the whole, progress, if slow, is being made in interpreting facts in a harmonious way. It is clear that the great centers of botany with their accumulations of priceless relics in the way of type specimens will always be the authorities on nomenclature. The mark of a good botanist is to be cautious about supplying names. For the plant must be one without a name, and the name must not have been applied to another plant.

Stock taking is as useful in science as it is in business. In both fields a name is always necessary when dealing with a plant. There is this distinction, however. In commerce the name is preliminary to the business. In the scientific world the name is not applied until some definite facts become known about the plant. As human knowledge increases we must be prepared to supply new names for plants, or revise the old ones to include the facts.

A Book or Two

Since the check list of the American Iris Society calls forth so much comment that it can not be compressed into the bounds of the usual short review and because the editor feels that it should have as much attention as the reviewer has given it, the discussion has been postponed again to the next issue of the quarterly. Apologies are offered not only to the American Iris Society and the reviewer but to our readers for this delay. Even the greatly increased number of pages, our largest issue since the publication of the magazine, does not permit the inclusion of all the material.

It may be noted that the title is "Alphabetical Iris Check List." It

was edited by Mrs. Wheeler H. Peckham and printed for the Society in Baltimore. It may be had from the Science Press, Lancaster, Pa., for three dollars.

Our Familiar Island Trees, by Mary Dillingham Frear. R. G. Badger, Boston, Mass., 1929. 161 pages, illustrated. \$1.50.

When we first come to the iridescent Hawaiian Islands and dip into the shade of their lush green trees we are overcome with the brilliant reds, purples, and greens of the flowers and foliage and take it all in romantically with our emotions. But soon we are so struck by the sight of the

pandanus roots striking straight down for the ground like a collection of canes hanging loose, without an umbrella-stand to rest in, or the tortuous twists of the banyan's trunks and branches that we look eagerly for further botanical enlightenment.

Mrs. Frear's little book is not written like a text book, but from the approach of a poetic garden lover, yet sufficiently a lover of accuracy and science to give Latin names and arrange the plants under family headings. It is a book to take in one's hand as one saunters forth along the Muana valley, to open and glance at when you want to see what that tree with flaming red blossoms is, or the banana that looks like a fan, or any of the hundreds of other striking and strange plants.

The book will interest those who have not the good fortune to go to the Hawaiian Islands, too, if they like to read about how the Polynesian used the bread fruit tree, and that he called it "Ulu," or what he does with the Ki plant (*Cordyline terminalis*), or the Koa tree (*Acacia koa*) whose wood was formerly used for canoes and is now much used for furniture. There are bits about the planting customs and many exquisitely poetic descriptions of flowers and trees. It is just the kind of book a person would write who loved his home and all the plants that grew near by, and was able to arrange the material accurately and systematically, and to express it all in poetic language.

HELEN M. FOX.

Exploring for Plants, by David Fairchild. The Macmillan Company, New York City. 1930.

A special review of this interesting volume will appear in the next quarterly. Meantime let us note that here is sufficient testimony that one can travel about the world looking for plants with as delightful results as if one pursued jewels or inaccessible poles. Technical only to a degree, yet de-

lightfully readable, it should be read by all gardeners and many non-gardeners.

The jasmin that forms the subject of our first article in this issue is part of the treasure trove from the expedition Dr. Fairchild discusses and is only one of the many plants now growing in this country as a result of his expeditions.

He is at present travelling in the Mediterranean region, particularly visiting some of the islands of the Greek Archipelago with an eye for plants that may find similar conditions in the warmer portions of our own country.

Landscaping the Home Grounds, by L. W. Ramsey. The Macmillan Company, New York, 1930. 170 pages, illustrated. \$2.00.

By far the best of the handbooks designed for self-instruction and use of home gardeners who can not afford professional advice and yet who desire authentic information in a form they can understand. The text is readable and the illustrations and diagrams good. Best of all, they are in excellent taste and include examples from humble ranks as well as some of more pretentious nature.

As should be expected in so small a volume, much of the text is compressed almost to the extent of seeming hurried and fragmentary, but in few places does it become inadequate.

Bulbs for American Gardens, by John C. Wister. The Stratford Company, Boston, Mass., 1930. 278 pages, illustrated. \$6.50.

It is a difficult task to write any book for the entire American field and a bulb book is no exception. The author has followed the safest system and discussed bulbous plants for their own sake with more or less discussion as to their uses, as is indicated by the chapters for spring gardens, rock gardens, and wild gardens.

The text reflects the author's atti-

tude and taste for catalogs, check-lists and reports and has little that urges one to discovery or adventure. The best chapters are those on the tulip, narcissus, and curiously enough, the hyacinth. The discussions of crocus and tulip species are lamentably brief and the section on lilies is quite routine. The half-tone illustrations are numerous and usually excellent, but the line drawings are often vague and, in the case of the narcissus flies and the structure of the poeticus narcissus flower, flagrantly inaccurate.

The Cherry and Its Culture, by V. R. Gardner. The Orange Judd Publishing Co., Inc., New York, 1930. 128 pages, illustrated. \$1.25.

An excellent book on the culture of the cherry, written in a clear, concise, interesting manner, which is instructive to the amateur as well as to the commercial grower of sour and sweet cherries. Introducing his subject with a short history of the development of the cherry in America, the author follows this with a discussion on each of the various orchard operations, which are so important to successful cherry growing, centering his discussions around the results of careful studies made by the experienced cherry growers and the trained horticulturists throughout the United States. The last chapter which deals with the economics of cherry growing as a business should be particularly valuable to the commercial cherry grower or to those who contemplate growing cherries on a commercial scale. No one is better qualified to write this book than Dr. V. R. Gardner, for in addition to his well-known experimental work with the cherry, he is one of America's leading horticulturists.

W. E. W.

Wild Gardening, by E. H. M. Cox. F. H. S. Dulau & Co., Ltd., London, 1929. 125 pages, illustrated. 5s.

Although Mr. Cox proceeds immediately to limit and define his field, it may be well to say at once that his

title does not refer to a garden in which are used only native plants in a style to simulate an idealized spontaneous grouping.

He is himself here concerned chiefly with the "landscape wild garden" in which "plants are cultivated under as natural conditions as possible." In his garden, as described, are to be found plants from all parts of the world with conditions patterned after those in which they might have grown in their native wilds.

Several things must be said in advance. The garden is not small and is so planned as to require a high degree of intelligence to execute successfully. The book can not be taken in hand, therefore, as a sort of cook book for wild gardening.

For the American gardener, it will be valuable in many ways, but perhaps most valuable in this day of interest in collections of new and rare plants to show gardeners how to have many things in their gardens without having a sort of vegetable mangrove.

As always is true of Mr. Cox's books, this small volume is both pleasant and inspiring reading that no amateur who makes any pretense of being more than a gardener-because-it-is-being-done can afford to miss. If he really reads it and gets the meat of the matter, he can create his own garden practice with the plants peculiar to his soil and conditions with parallel if not identical success.

Rock Garden and Alpine Plants, by Henry Correvon. The Macmillan Company, New York, N. Y., 1930. 544 pages, illustrated. \$6.00.

This long expected volume is of particular interest and value to American gardeners, who hold M. Correvon in especial affection. It is said not to be a translation of his *Les Plantes des Montagnes et des Rochers*, and yet one reads the chapters on The Fernery, The Terrestrial Orchids, and Hardy Cacti, with something of a chuckle if he compares their text with the texts

of Mr. Lane's translations that appeared in the April, July and October (1928) issues of this magazine. One finds contemporary names substituted for the originals, changes in form, a few omissions, and a few timely additions. As the Lane translations were made with M. Correvon's permission and cordial approval, and as one knows of M. Correvon's regret that he could not also include *The Lilies*, appearing April, 1929, one wonders a little that among the numerous acknowledgments, Mr. Lane might not have had a bow—at least—for his excellent spadework! Nevertheless, we are delighted to have this much of Correvon, for even this English text keeps much of the tremendous vitality of the man, the peculiarly intimate and personal quality of his knowledge, the authoritative nature of his experiences.

The major portion of the book (pp. 142-525) becomes a sort of cyclopedia, with many compact paragraphs and numerous lists of names followed by even more numerous code symbols than those that adorn a Correvon seed list, as witness the almost two page list of *hypericums*, a list that would lure only the hardiest of gardeners to a passion for *St. John's Worts*, and also the multitudinous *senecios*, while from the *campanulas* and *primulas* one turns away inconsolably!

Possibly one wants too much, or perhaps one wants something else than what is offered—more of Correvon and less of statistics.

The Lawn, by Lawrence S. Dickinson.
Orange Judd Publishing Co., New York, N. Y., 1930. 116 pages, illustrated. \$1.25

The author begins by stressing the importance of a good lawn to the

development of any place, pointing out the need of areas of good turf not only for their own value but for emphasizing the other features in the composition. He enumerates the several factors controlling the formation of a good lawn in various parts of the country and then proceeds to the practical matters in hand, grading, soil preparation, seed selection, fertilization particularly in relation to maintenance, the control of pests, including weeds as well as moles and insects. There is a special short chapter on maintenance, one on mowers, two on special turfs, and a final chapter of tables of useful data.

Rose Garden Primer, by Eber Holmes.
A. T. De La Mare Co., Inc., New York, N. Y., 1930. 208 pages, illustrated

A primer should have certain characteristics that need not be so apparent in other books. Its fundamental character must be that it shall meet the needs of the veriest beginner and that it should lead him on beguilingly from one essential to another.

The present small volume written by a man who has grown roses through a lifetime is just such a book, presenting the essential facts so that the untutored gardener who would commence the cultivation of roses can find in it not only what he needs to know about roses as roses, but what he should do to make a beginning. It comes near enough to offering recipes to satisfy the literal minded. It offers simple lists for the timid. It clarifies briefly the differences in procedure for different parts of the country. It furnishes a chapter of simple questions and answers that should delight the querulous.

The Gardener's Pocketbook

NEGLECTED NATIVES. 5. ALUMROOT.

Heuchera pubescens Pursh.

The genus *Heuchera* (correct pronunciation hoyk-sheer-a) is represented in most rock-gardens by one or more varieties of Coralbells (*H. sanguinea*), but other species are rarely seen in cultivation in this country. The flowers of most of them, it is true, are without ornamental value; but the foliage is often decidedly attractive. They have the additional merit of thriving in the shade, where few of the much-used rock-plants will grow at all; and they are more or less evergreen and relatively free from pests.

One often hears of a rock-gardener endeavoring to bring together a complete collection of some genus, as for example *Sedum*, or *primula*, or *Dianthus*. Since, however, these genera include hundreds of species, many of them native to remote parts of Europe, Asia or Africa, real completeness is practically impossible to attain. If a group like the *Heucheres* were selected, instead, a full representation might be hoped for, since there are only about 75 species known, and these are all native to the United States and Mexico.

Some of the species have round-lobed leaves, and are often popularly referred to as "rock-geraniums"; others show sharp or jagged points to the lobes. In some the foliage is smooth, in others densely hairy. Perhaps the most striking of all is the one here pictured, which has leaves with dark green or maroon veins on a gray background, no two individuals being marked exactly alike. It is a native of deeply wooded limestone ledges in the Appalachian region, but, as the illustration shows, has taken kindly to a shaded heap of rocks in the writer's garden.

EDGAR T. WHERRY.

Washington, D. C.

Meconopsis baileyi Prain. (See page 155.)

From China—that land of mystery, philosophy and flowers, a trinity yielding both spiritual and aesthetic satisfaction—have come, thanks to the untiring and often dangerous journeys of explorers, many wonderful plants, primroses, lilies, rhododendrons, clematis, gentians. It is a breath-taking sight to find these heavenly denizens of foreign alps growing lustily at our lower levels. Now the Chinese poppy, *meconopsis*, joins the company with many beautiful forms, usually blue or yellow flowered, but sometimes scarlet, and in particular *Meconopsis baileyi*, the subject of our note, quite the most beautiful addition to the long list of rare and lovely species from the Flowery Kingdom.

Much has been written the last three or four years as to the culture and propagation of *Meconopsis baileyi*, which I am convinced is more akin to *M. betonicifolia*, rather than the Himalaya species *M. simplicifolia*. I send herewith a picture of *M. baileyi* produced in prolific bloom, four feet high, eight and ten blossoms, four inches across, blooming just fourteen months from germination of seed. I have had more than three thousand plants of this *Meconopsis* the last three years, and I believe, reading as I do the much bewildered correspondence back and forth, that most of those who try to grow them experience sad disappointments in their dampening off and disappearing after a short while, are nowhere on the right path. I am referring to American growers, as in England and Scotland they grow these beautiful poppies much as one would grow hollyhocks.

I am convinced that *Meconopsis baileyi* and other *meconopsis* of the same type, must be treated as one treats other high alpine subjects and that, therefore, their seeds must be



Edgar T. Wherry

Heuchera pubescens

[See page 153]

frozen to get good germination. I therefore plant the seeds in sterilized leaf-mould and silver sand early in January, allowing them to stand out, freeze, and if fortunate be snowed upon, after which time I bring them in to a

partially warm alpine house, temperature about fifty-five or sixty degrees.

They germinate quite freely, and from the time of germination until they are planted out in rows in the beds, they must be brought along



Edith H. Banghart

Meconopsis baileyi

[See page 153]

quickly. For instance, like most high alpenes, especially the gentians, androsaces, etc., they must be pricked off in the cotyledon stage, before the second pair of leaves appear, into flats of rich leaf-mould, loam, and gritty sand. I allow them to grow on in flats until they are about two inches high, which will not be long, as they grow quickly when they have the right soil requirements, and they should be planted out in their permanent quarters, if for private gardens, about the middle of June.

Presuming, as has been given us to understand, that they grow in their native habitat in the Orient in east and northeast exposures, this would call for a very shady location, and for that reason I get the best luck in my garden planting them in with my rhododendrons, in very acid soil, rich and deep, and somewhat moist. These grow very luxuriantly. In my nursery field where they are planted out like cabbages in a row, I have had to make the soil, as my soil is naturally light and sandy, splendid for many alpenes, but for those loving partial shade and an acid peaty combination, I have had to add quantities of leaf-mould, peat, very old cow manure and plenty of grit, and I cover them with slats during the heat of the season. Some of my plants did not look very thrifty for a short time last year, and around these I used ammonium sulphate. They picked up immediately, which satisfied me that they do require an acid soil condition.

They have to be watered every day, after the heat of the day is over, as they really prefer a humid atmosphere, but they should not be watered so late that the leaves will not dry before nightfall, or the leaves will spot and turn brown. Quite as likely as not, along about the middle of August they will begin to die down, although those in pots in my cold frames passed through a very severe winter in leaf, but they are a deciduous type, and should they die down do not be alarmed, you will find the life kernel alive, to

return again in the very early Spring. Being like other Oriental poppy types, late August or early Fall is their dormant season and the best time to move them.

I have successfully bloomed *Meconopsis quintuplinervia*, and *Meconopsis pratti* I grow in the moraine along with the little Chinese *Delphinium tatsienense*, alpine poppies, alpine linums, and the little Chinese *Geranium pylzowianum*, a very lovely little bulbous type with blue-rose coloring. *M. pratti* likes a lighter soil, and sunnier conditions, and seeds itself all over the place in my garden. It, too, is very lovely, but while *M. baileyi* nearly always adheres to its lovely azure blue coloring, *M. pratti* sometimes comes a deeper blue, almost verging on the purple, but I have never had it come the wishy-washy whitish blue that some enthusiasts complain about.

EDITH H. BANGHART.

Medina, Washington.

Kurume azaleas. (See page 157.)

So much has been written of these charming small-flowered azaleas during recent years that little can be added. Essentially a garden race, as represented by the present range of forms and color selections, their origins go back to the Island of Kyushu in southern Japan. This fact suggests doubts as to their hardiness in this country and the earliest records of their cultivation in Great Britain suggest the same difficulty. The clue to the situation, however, seems to lie in the degree of ripening of the wood. Very young plants and later growths on old plants usually suffer severely.

For the first difficulty we need only plant older plants or carry young plants through their second winter in a coldframe. For the second difficulty one is less able to control the situation except by checking all growth out of doors after September.

Here the flowers bloom rather early, coming just after the Korean azalea,



Lilian A. Guernsey

Kurume azaleas

[See page 156]

*Lilian A. Guernsey**Lilac, Floreal*

[See page 160]



E. L. Crandall

Prunus sieboldii

[See page 160]

so that a situation sheltered from the first hot sunlight is to be desired.

As far as soil is concerned, they seem to be not particular except that humus is required, and certainly one finds quick response to careful feeding with well-rotted manures.

Washington, D. C.

Syringa, Floreal. (See page 158.)

In recent years more than one person has discovered the beauty of lilac species and now we are beginning to have more frequent use of their hybrids.

This variety, originated by Lemoine, has a somewhat complex ancestry that is discussed at some length in Mrs. McKelvey's monograph, "The Lilac" (p. 107-8).

For the gardener it is an important plant as it flowers after the *vulgaris* hybrids have passed their prime. It makes a tall, somewhat widely branched bush with rather yellow-green foliage and large panicles of flowers. The individual blooms are rather small, rosy-lilac in the bud but clear lilac when opened. There is little fragrance. It is important also in that it makes a large bush rather rapidly—far more quickly than the *vulgaris* hybrids. Propagation is by the usual methods.

Washington, D. C.

Prunus sieboldii Wittmack. Takasago. (See page 159.)

The earliest of the double-flowering pink Japanese cherries, at least in the vicinity of Washington, D. C., is the lovely Takasago, known also as Naden. (The latter name, however, is used by some authorities for an entirely distinct variety of *Prunus serrulata*, so that to avoid confusion the name Takasago appears preferable.) The flowers of Yoshino, the early-blooming cherry which has made famous the Tidal Basin in Washington, have not yet entirely fallen before the Takasago makes its debut in the spring flowering cherry procession.

With smooth gray bark and stout, erect-spreading branches, the Takasago apparently never makes a large tree, usually not exceeding about 18 feet in height. In early summer the young twigs are dark purplish red. The young foliage is yellowish brown, at times reddish bronze, and the mature leaves are densely hairy on both surfaces, a characteristic which distinguishes this variety at once from any other flowering cherry, and makes identification possible after the flowers are gone. Normally appearing before the leaves, the semidouble flowers, up to an inch and a half across and usually in clusters of three, are a delicate pink, generally paler toward the center. The reddish brown calyx as well as the pedicels are decidedly villous. Occasionally the flowers and leaves develop at the same time, in which event the flowers are apt to be paler, even almost white, and more nearly single, and the peduncles are longer. Under favorable conditions the trees are densely covered with flowers. The Takasago has never been reported in a wild state, but is rather commonly cultivated in central Japan.

As far north as the Arnold Arboretum, at Jamaica Plain, Mass., the trees appear perfectly hardy, and one nursery in central New York lists this variety in their catalog, so that it is probable that the Takasago would be winter-hardy wherever peaches are grown. Propagation is the same as for varieties of *Prunus serrulata*,—that is, budding or grafting on seedlings of *P. serrulata*. In the absence of such stock mazzard might be used, except for regions having severe winters. It is believed that the trees would be longer-lived if Japanese stock is used. PAUL RUSSELL.

Washington, D. C.

Berberis sargentiana Schneid. (See page 161.)

Among the many beautiful evergreen barberries from China, surely



Lilian A. Cuernsey

Berberis sargentiana

[See page 160]

*Lilian A. Guernsey**Lilium elegans*

[See page 164]



Lilian A. Guernsey

Allium unifolium

[See page 164]

none makes a more welcome addition to the borders of the more northern gardens than this species that has proved hardier than most of its near relatives.

It forms dense bushes well clothed with leafy branches to their very base. The oldest plants known here are about six feet high at about fifteen years of age and are four to five feet through.

With the main stems both stiff and erect, it makes an excellent plant for informal hedges, requiring little trimming to keep it well in bounds. In addition it is well armed with vigorous 3-parted spines that form a sure defense against all comers.

Its first beauty comes in early spring when the new shoots push out, bronze and coppery-red in color like the new shoots on healthy tea roses, giving a new brilliance to the shining, deep-green leaves that have come through the winter. The crowded clusters of yellow flowers soon follow but make little show though they are well beloved by bees. Then there is no further incident until autumn when the blue-black berries ripen and show darkly among the leaves. As the plant is evergreen, there is less of autumn color to be expected, save on the oldest leaves that color brilliantly before they fall. If the winter is severe, the new leaves often take on a protective dull bronze, especially on the sunny side of the plant, but this color disappears with spring.

As the plant comes fairly quickly from seed and may be propagated also by winter grafting on seedlings of *Berberis thunbergi*, we should soon have this excellent barberry for common use. Seedling plants, however, are much to be preferred.

Washington, D. C.

Lilium elegans Thunb. (See page 162.)

One ventures into dangerous territory in assigning a name to any lily of this general character, but whatever may be the final unravelling of their

diagnoses and family trees, the name above commonly brings on bulbs of a dwarfish lily with robust habits and strong and rather coarse coloring.

It is often a problem to know just where to place them in borders as their dull orange-reds are opaque in quality and often muddled by streaks of duller color, particularly on the edges and tips of the segments. Planted, however, on the edges of shrubberies, away from the gay masses of the earlier perennials, they make a brave display. In one combination here they have been particularly successful, rising behind the spreading masses of *Juniperus depressa plumosa* which is tipped with new, pale-green shoots just as the lilies flower. What may happen later when the junipers have exceeded their present bounds, one dares not guess.

As to soil and situation, there seem to be few particular requirements as this group responds well to good garden soil—not forgetting, of course, the usual aversion to manure near the bulbs and the need for adequate drainage.

Washington, D. C.

Allium unifolium Kellogg. (See page 163.)

Among the California bulbs put in for trial in 1929 was this native onion with rosy white flowers. Planted on a gentle slope with a bit of sand and fine gravel added to the soil mixture, it came through the winter with its minimum of -6° F. without any sign of tenderness. Like some other bulbous plants from more temperate climates, it pushed up its leaves, for it has several in spite of its name, so early in the spring that the tips were caught by the late frosts. The flower buds came up later and developed their 12 to 14 inch stalks in time to bloom with the true *Phlox amoena* just after the familiar *Phlox divaricata* had passed.

The flowers are of the palest pink with a flush of rose at the base of the



Lilian A. Guernsey

Iris missouriensis

[See page 168]

*Lilian A. Guernsey**Narcissus, Callirhoe*

[See page 168]



Lilian A. Guernsey

Cotoneaster acutifolia

[See page 168]

segments and a deep rose line down the center of each, giving a pink and white beauty much like that of the spring beauties of the Eastern woods. As the flowers wither they become papery and last like ghosts of themselves long after the leaves have disappeared.

Whether or not this species will become rampant in its spread remains to be seen, but unless it does it should form a pleasant addition to the smaller bulbs that add zest to the early borders.

Washington, D. C.

Iris missouriensis Nutt. (See page 165.)

The flowers illustrated show first blooms from seed collected in Colorado and seem for some reason not to fit closely some of the published descriptions of the species, suggesting rather some of the Pacific Coast species and a possible mistake in collection. In any event, the half-evergreen leaves suffered considerably during the winter but were soon replaced by new shoots and overtopped by the unbranched stalks bearing the twin flowers inside the rather conspicuous bracts. The colors varied somewhat among the familiar iris lavenders but tended toward pink lavender rather than blue lavender. Although somewhat small for the mass of foliage, they are of such distinct shape and color that they attract attention.

The species flowered here at about the same time as *tenax* and *gormanii*, two very charming species from the coast.

Like all the native species from the West, it is easiest to manage from seed, although older plants travel well either early in spring or in late summer before the autumn root growth.

Washington, D. C.

Narcissus, Callirhoe. (See page 166.)

To the gardener who finds no pleasure in the delicate gradations from white to yellow that may now be had in modern narcissus, the charms of this exquisite variety, raised by Mr.

F. Herbert Chapman of Rye, England, may seem pale, but surely no one could fail to see and enjoy the beauty of its symmetrical perianth and the well-balanced and charmingly ruffled trumpet.

Although sometimes classed as a white trumpet and indeed paler than many known as such, it is in fact a very pale bicolor with white perianth and the coolest of sulphur-yellow in the trumpet. To those disposed to improve their visual pleasure in such varieties as these, it is especially commended and such varieties as Moira O'Neill and Tapin might serve as running mates. Bouquets of these, with Mrs. Krelage, White Emperor, and Moonlight for contrasts, make exquisite groupings, particularly under artificial light.

Like all good narcissus, it makes its best appearance when cut as the buds unfold and allowed to finish its development in a cool room. There comes then a perfection of finished and a smoothness of petal that is known only to the initiated.

Washington, D. C.

Cotoneaster acutifolia Turcz. (See page 167.)

For no special reason save common familiarity, one is likely to think of most cotoneasters as red-fruited and indeed the species of that coloring do make the more brilliant showing in the autumn shrubbery. This species from western China need not be considered among the most showy of the species for the garden, perhaps should not even be included in the number for the small garden.

If included, it can be given a place toward the back of the border where its dull, white flowers will show a little and where the fruits may be seen as they turn slowly from dull, purplish-red until nearly black.

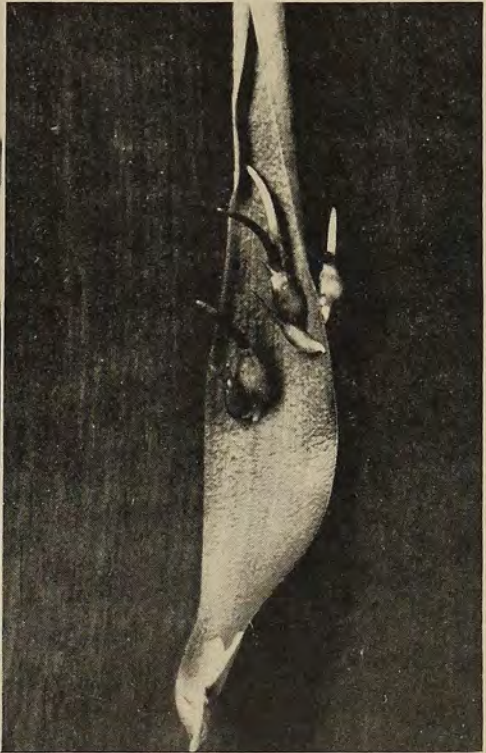
In this vicinity it is almost entirely deciduous, as indeed are most of its fellows.

Washington, D. C.

Correspondence

It has long been the hope of the editors that members would send in without continued urging and browbeating various contributions for our pages from formal ones for the first part of the book to smaller ones for the more intimate pages in the Gardener's Pocketbook. Members seem to be as poor at letter writing, however, as the editor himself and so we have gone empty handed until this issue. There follow several communications, all of which should bring responses from other members. Do send in your comment and so retrieve the

last pages from that curse of "dullness" that one member levels against us. Take the matter seriously to heart, remembering that it is your magazine to be filled and colored by the wishes of the members themselves as far as they express themselves; that it is a quarterly gathered together and put in shape by nights and in holiday times and that it is growing slowly but surely into the most important plant quarterly that we have in this country. No group can accomplish this goal single handed. Will you give your help?



SIR: The plant of *Ornithogalum thyrsoides* from which the pictured leaf was taken was being forced this winter. A sudden freeze frosted the leaves, the injury being most severe

at their bases, thus girdling them and preventing the proper flow of sap. This presumably was the cause of the profuse production of bulblets on the surface of the leaves.

I never knew before that leaves of bulbous plants could produce bulblets from their surfaces. As the hyacinth produces bulblets from the bulb scales and as the leaf is merely an extension of the bulb scale, why could not hyacinths be propagated by this method? The downward flow of sap could be checked presumably by cracking the leaf toward the base.

The second photograph, taken at a later period, shows the development of the bulblets.

BENJAMIN C. AUTEN,
Cartersville, Mo.

SIR: I am sending you herewith interesting literature about the newest of English horticultural societies, of which I have the honor to be the Secretary for the United States, and I should be grateful if you would write a paragraph for the next issue of the magazine inviting any one to join the Alpine Garden Society. I believe that it is very worth while and that many of our amateur rock-gardeners need the information available to members. I am busy distributing these leaflets to other societies and garden clubs so haven't time to compose for your extremely interesting (to me) periodical.

Sincerely yours,

(MRS. CLEMENT) M. G. HOUGHTON,
Suffolk Road,
Chestnut Hill, Mass.

It is a great pleasure to greet another organization particularly devoted to the cultivation of special plants. Persons wishing to join may remit through Mrs. Houghton or directly to the Treasurer, Dr. P. L. Guiseppi, "Trevoze," Felixtowe, Suffolk, England. The annual dues are 10s. 6d.; life membership, £10-0-0.

The society has already held one exhibition with great success and is particularly interesting to many persons as the members concern themselves very largely with the growing of plants of their own collecting in the Alps and elsewhere. Horticultural forms and strains are taboo and one

must forego the horticultural pride that is measured in circumferences and stature and keep his raptures for the purer pleasures of the unimproved beauties of the alpine regions.

SIR: I am interested in adding a few shrubs and trees to an extensive collection planted some twenty-five years ago, and am wondering if some of the readers of National Horticultural Magazine would be so good as to make suggestions which would help me in my selection, and also call attention of other gardeners to available new plant material for gardens south of Washington?

In the past quarter of a century much new material has been added to American gardens through woody plants introduced into this country by E. H. Wilson and other plant hunters and distributed by the Arnold Arboretum. A great many are perfectly hardy in all sections of the country and their merits as garden subjects are unquestioned, but there are more tender sorts which are being grown successfully in the favored climate of California. The question arises, is it possible to adapt them to our southern climate? What of cotoneasters? I should be very much interested to know which varieties have been successfully grown in Virginia, the Carolinas and southward? E. H. Wilson thought it possible that the following evergreen species which are used extensively in California might be found to be hardy in Virginia: *Cotoneaster franchetii*, *C. harroviana*, *C. wheeleri*, and *C. pannosa*, also the following broad-leaved evergreens: *Photinia serrulata*, *Photinia glabra*, *Stranvaesia davidiana undulata*, *Stranvaesia davidiana*, *Camellia cuspidata* and *Jasminum primulinum*. I should like to know what success has been met with in growing these shrubs south of Washington.

Also what of the evergreen barberries? *Berberis darwinii* used as an hedge plant in California, and other fine sorts used there, *B. stenophylla*, *B.*

hakeoides and *B. sargentiana*. Who has tried them in the Eastern States?

My own garden is in the western part of Virginia in a rather exposed position with the added handicap of a limestone clay soil; however, we have been successful in growing some of the more tender shrubs and trees, as for instance Pomegranate and *Magnolia grandiflora* are apparently well content. I should be appreciative of any information in regard to the newer shrubs that might be adaptable to our climate.

ELIZABETH S. RAWLINSON,
Staunton, Va.

SIR: Why do people who want to get away from the formal garden and apparently have an urge for Nature's own type, always go in for a rockery with its glaring patches of yellow alyssum, purple aubrietia and masses of weedy sedums? How much more interesting to have a wild garden making a collection of indigenous plants, shrubs and vines. A bit of water always adds and is easily gotten at most places. A few good, well chosen, colored rocks, stepping stones or a pine tag walk, maybe, and if one's artistic self must have expression, a bird basin fashioned or scooped out stone with a tiny squirrel on its brim, such a one as I saw a few days ago, done by a woman of little means but much originality, would complete the picture.

N. L., Richmond, Va.

SIR: Would you please send me whatever information you or our readers may have on the growing of *Meconopsis baileyi*?

F. J. S., Chicago, Ill.

SIR: It would be of great interest to me to hear the experience of others in growing any or all of the forms of *Fritillaria imperialis*. Is the type of bulb procurable in the trade to-day a practical subject for establishment and, if so, what advice can be offered in regard to soil, situation, etc., together with any suggestions as to the

necessary powers of persuasion for a seemingly transient guest?

M. McD. B., Ashland, Va.

SIR: Will you kindly supply the botanical name of the so-called "Poet's Laurel" of the type one sees in the garden pilgrimages through Virginia? It presents something the appearance of sprays of smilax, growing in large luxuriant clumps in the gardens of Shirley, Brandon and Hickory Hill.

C. H. D., Philadelphia, Pa.

SIR: It has occurred to me that my success in the making of synthetic manure may be of interest to some of the readers of The National Horticultural Magazine. Compost heaps have been a failure for me for one reason or another, chiefly, I believe, because wire grass would rush in and take possession of the compost before it was sufficiently decayed for use. Then, several years ago, The American Society of Agronomy published a formula for making synthetic manure. It was as follows: 60 pounds of sulphate of ammonia, 100 pounds of lime, mixed together and applied to each ton of fibrous organic matter. For my simple needs weighing the organic matter was too troublesome and proved unnecessary.

I had built an open pen about 7 feet square located under an apple tree in an out-of-the-way corner of the garden. Grass cuttings, fallen leaves, indeed all waste material from the garden except hard large stalks such as those from holly hocks, are disposed of here. My man has orders to put in a layer of five to six inches of garden waste, sprinkle liberally with the mixture of ammonium sulphate and lime and then turn on the hose and water thoroughly.

The result has been, after the first three or four months, a constant supply of manure from the bottom of the pen.

When I set out roses or any large plants, I put a spadeful of the synthetic

manure and a handful of bonemeal in the bottom of the hole with absolutely satisfactory results. In the early winter, the mixture is piled high about the roses and dug into the bed the following spring. It is, wherever needed, an excellent mule and it also supplies humus so much needed in the heavy clay soil of this region. In so far as I can judge it is in every way a perfect substitute for animal manure.

S. G. A., Staunton, Va.

SIR: One wonders a bit at the neglect of the campanulas in the rock garden where they make such valuable contributions to the summer effects. They are so easily managed that they deserve attention.

All may be raised from seed, but division is better for the increase of special plants as then we have the identical plant in each case. Division is best practiced just after flowering has finished. Seed should be sown as soon as it is ripe, but with imported seed I find the best success from sowing in February. Once established, a single plant will furnish all the seed that is necessary thereafter, and seedling should be as limited as possible as the plants often seed themselves to death, particularly such fragile beauties as the tiny ground-covering *pusilla*. Such as this should be clipped back immediately after flowering, and indeed this is a practice that is good for all of them excepting, in each case, the one plant that is to be left for seed bearing.

Campanula garganica is the first to bloom with me, quite dwarf in stature with exquisite starlike flowers in blue. It loves to be planted on a mimic hill and well protected by stones.

Campanula glomerata blooms in early June. Set in a moist sheltered spot among the lilies, its eighteen-inch stalks of purple bells are very effective.

Campanula laurii has a neat green tuft from which spring innumerable grass-like stems with pale lilac blooms, most delicate and lovely. The plants

love rocky ledges and should be grown in colonies of twelve or more. *Viola lutea* and *Myosotis semperflorens* make an admirable company for them with the forget-me-not in the low places below the campanula.

Campanula rotundifolia, *C. petiolata*. D. M. Andrews says that these are the same. Both are supposed to be for moist meadow land. I find that *rotundifolia* does best in low places. Both form very close mats of viola-shaped leaves, and produce quantities of deep blue bells, somewhat erect with very graceful carriage.

Campanula muralis with its fan-shaped growth belongs in a wall or against an upright rock facing the east for its best effect.

Campanula carpatica in its blue and white forms is the old standby for late summer bloom. The new hybrids with pale blue and white bells open facing you love to hang over a rocky ledge in a half shaded position.

All of the foregoing campanulas thrive with me in a neutral soil with sand humus and grit. I never use manure. Bonemeal, in spring and fall, is acceptable.

Campanula turbinata is another delightful plant, with close mats of viola-like leaves and erect blue bells that come late in the season. Plant it in generous drifts with *Myosotis dissitiflora* and *Anemone pulsatilla* for a happy combination.

Campanula punctata forms an eighteen-inch plant and showers interesting pale blue pendant bells in June. I use it as a background growing on the north side of a large boulder, with *Dianthus alpinus* and *Gypsophila repens* in the cracks of the boulder on the south side.

All of these campanulas are hardy, even in uncertain winters, when their great enemy, alternate freezing and thawing from December to April, plays havoc elsewhere, if they are given rock protection and a mulch for their crowns.

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