varieties of many plants is considered, the wonder is that buyers can make their orders with such assurance that almost every plant received will be correctly named.

This weeding out of synonyms from catalogues, however, is a small portion of the work which this Committee is called upon to do, and many of the suggestions made by Mr. Raynolds and Mr. Manning were well worthy of consideration. In the first place, it is pretty clear that some rules should be laid down for the direction of all persons who name new garden-plants—rules similar to those adopted by the American Pomological Society and now observed by all who name new fruits. The rules on the nomenclature of vegetables which the Association of Agricultural Colleges proposed are also worth considering, and some of them might apply as well to flowering plants as to vegetables. For example, the name should be short, and consist, if possible, of a single word. It should not be superlative or bombastic. A plant should not be called a hybrid when it is not a product of true species, and it may be added that garden varieties should never have Latin names. One good reason for this is that since descriptive Latin terms have been used in botanical nomenclature they should not be used in the case of plants which are sufficiently distinct for garden purposes, but which are botanically identical. Besides this, the addition of varieties will bring about at last a name too cumbersome for ordinary use. Good examples of these names could be taken from almost any nurseryman's catalogue, and such combinations as *Ulmus campestris aurea Wredei* are by no means uncommon. English names are certainly to be preferred for ordinary garden varieties, and these names, as has been well held, should not be descriptive. It would not be difficult to formulate a code of rules which could be applied to the great majority of florists' plants, and there is little doubt that if some authoritative organization like this Association should promulgate these rules new plants would as a rule be named in conformity with them.

As a branch of this general question an effort is being made to bring the descriptions of plants in catalogues to greater accuracy, and here we are at once confronted with the difficulty of describing colors. It would seem that the only way to convey an accurate idea of the color of a flower is to have some chart of standard colors to which reference can be made. As an illustration of the difficulties in this regard it was stated in the Convention that a single plant was described in seventeen different colors or combinations of colors, which ranged from "pink with a white centre" through "yellow orange red" up to "velvet shaded purple." Such fearful and wonderful colors as "garnet red tinted with rosy brick" and "black amaranth marmorated chestnut brown" were given as attempts to describe accurately the tints of some flower or leaf. The sample cases of spool-silk made by the Brainerd & Armstrong Co., which have been advertised in this paper, contain more than 200 shades, but very few of them, it was said, are found practically useful in describing flowers. On another page of this issue Mr. Orcutt attempts to use the "Nomenclature of Colors" adopted by Robert Ridgeway for the use of naturalists. Of course, if one has not this system to refer to, Heliotrope-purple and orange-vermilion will not convey a precise meaning, but if these terms and others become identified with a standard print they will be of great assistance to all who wish to describe the tints of flowers.

"Whatever contributes to render the scenes of nature delightful is amongst the subjects of gardening; . . . and nothing is unworthy of the attention of a gardener which can tend to improve his compositions, whether by immediate effects, or by suggesting a train of pleasing ideas. The whole range of nature is open to him, from the parterre to the forest; and whatever is agreeable to the senses or the imagination, he may appropriate to the spot he is to improve; it is a part of his business to collect into one place the delights which are generally dispersed through different species of country.—*From Whately's "Observations on Modern Gardening,"* 1770.

The Clark Elm.

WE have already given a picture of a typical American Elm (see p. 287), and in this number (see p. 443) we give a winter view of another characteristic form of this tree as it appears in New England, where it is known as the "Willow-tree type." It is a magnificent specimen, standing in Lexington, and known to many, for its home is amid scenes which are memorable in Revolutionary annals. It is on the premises of the Clark-Hancock house, whose history is summarized in this tablet: "Built 1698; enlarged 1734. Residence of Rev. John Hancock fifty-five years, and of his successor, Rev. Jonas Clark, fifty years. Here Samuel Adams and John Hancock were sleeping when aroused by Paul Revere, April 19th, 1775." It is within earshot, too, of the spot where Major Pitcairn called upon the Lexington rebels to throw down their arms and disperse. It was but a stripling on that day, having been set out only five years before by the Rev. Jonas Clark named in the tablet. Its age, accordingly, is about 125 years.

The trunk forks at four feet ten inches from the ground. The special divisions of the two great branches spring lightly upward in noble arches, the branchlets at the extremities sweeping the ground even in winter, while in summer when the branches are weighted down by the leaves the whole tree presents the appearance of an immense leafy dome poised upon a tremulous edge of green. The circumference of the trunk at four feet above the ground is thirteen feet five inches. The circumference of one branch at the point of furcation is eight feet seven inches, and the other branch eight feet eight inches. The height of the tree is seventy feet, and its spread is eighty-four to ninety feet.

Our illustration is from a photograph by Mr. Henry Brooks, of Medford, and the tree is one of those whose portraits will appear in the "Typical Elms and other Trees of Massachusetts," now in course of preparation by that gentleman.

Color Notes on California Wild Flowers.—I.

IN describing the colors of the following wild flowers of California, I have taken pains to compare each with the colored plates given in the "Nomenclature of Colors for Naturalists," by Robert Ridgeway, of the United States National Museum. I have matched each color as closely as I was able in the field, with fresh flowers before me, usually in consider-able numbers, so as to note the range of variation in each.

This character is frequently ignored by botanists, but with cultivators of flowers it should receive very careful attention. Ridgeway's "Nomenclature," above referred to, though not wholly satisfactory and far from complete, is still our only standard authority on the subject. To secure uniformity of nomenclature no other chart can be used with safety, unless compared with Ridgeway's first. The sample-case sent out by Messrs. Brainerd & Armstrong Co. I have not seen, but if it uses a different nomenclature from our standard, it will be as mischievous as useful. Ridgeway's "Nomenclature" may be had of Messrs. Little, Brown & Co., of Boston, and should be in the hands of every one desiring accuracy in his descriptions.

California is associated in the mind with gold and "golden" flowers. Frequent in literature are references to "fields of green and gold" and "seas of golden flowers;" yet it is doubtful if the color of gold can be matched in any flower that grows. The "golden" Eschscholtzia is of an orange hue, and any yellow tint is golden to the popular eye.

Fritillaria biflora, familiarly called by the children around San Diego by the name of the Chocolate Lily, is an elegant plant, related to the Crown Imperial. The plant grows from a few inches to a foot or more in height, with broad base leaves and a strong leafy stem, producing from one to five large and beautiful deep claret-brown campanulate flowers, like a spray of bells. The flowers are an inch long, slightly mottled with green. It is one of the finest species in a large genus of stately and handsome flowers.

Allium fimbriatum is a pretty plant, abundant in the mountains of Southern and Lower California, bordering the Colorado Desert. It sends up a stout scape a few inches high, bearing

twenty-five or thirty showy flowers of a very dark rose-purple color—sometimes lighter. Its Mexican name is *Lavina*.

Lathyrus venustus is the very pretty wild Pea so abundant through Southern and Lower California, in the cañons and valleys near the coast. The clusters of flowers are of a bright magenta. It is frequently taken for our more magnificent *Lathyrus splendens*, which has much larger flowers of a brilliant rose-red to crimson.

Frasera Parryi is a tall, stately biennial, growing in the mountains of San Diego County, usually from two to four feet in height. The first year the plant forms a cluster of broad radical leaves, which makes a mat on the ground, and, as the leaves are usually bordered with white, the plant is quite pretty at that stage. The second season it sends up its tall panicle of curious blossoms, with a deeply four-parted, rotate corolla, each division with a glandular and fringed pit on the upper side. The flower is scarcely an inch across, white (sometimes of a slightly greenish cast), with an apple-green spot on both sides of the hairy glands; while the midveins from the glands to the apex of the divisions are Heliotrope-purple. The corolla is thickly dotted with fine spots of Heliotrope-purple. It is a curious and striking plant, well worthy of cultivation, like nearly all herewith mentioned—many of which, indeed, are in cultivation in Europe, if not in America.

The Mohave Desert, in San Bernardino County, yields a multitude of beautiful flowers, none of which probably exceed in brilliancy of coloring the orange Mariposa Tulip (*Calochortus Kennedyi*). I have only been able to compare dried specimens of this lovely flower with Ridgeway's nomenclature, by which I would describe its color as between a Chinese orange and an orange-vermilion. If I may trust my memory through the eight years since I collected this plant I should say that its color when fresh is the same as when dry. The plant seldom exceeds four to six inches in height, and produces several of its showy flowers, which are about two inches across.

A large plant of *Cereus Schottii*, from San Quintin, Lower California, is just blooming in the garden (July 7th, 1890). This gray-headed "Old Man" Cactus, known by the Mexicans as the *Carambuya*, called by some of them the *hombre viejo* or *cabeza vieja*, according to Brandegee, and in Sonora known as the *Zina*, *Sina* or *Sinita* (Schott), is a tall, stately plant ten to fifteen feet or more in height. The flower is of a delicate shade between rose-pink and flesh color, an inch long and less than an inch across, quite pretty, but very insignificant beside the huge plant that produces it.

Opuntia prolifera, the common Chollas Cactus so abundant in the vicinity of San Diego, has flowers of a wine or pomegranate purple, which are very pretty, but are so well guarded by a multitude of formidable spines as to almost repel admiration. The fruit is proliferous, the seeds almost invariably abortive. The plant forms impenetrable thickets, covering quite extensive tracts along dry water-courses, on hill-side and mesa, attaining a height of four or five feet or more, and is one of the most characteristic features in the vegetation of Southern California near the coast.

Orcutt, California. *C. R. Orcutt.*

Diseases of Chrysanthemums Caused by Insects.

THE cultivation of Chrysanthemums has come to occupy such a large place in floriculture that any disease which affects their growth and beauty naturally causes annoyance if not pecuniary loss to the growers of these popular flowers. They have not been subject to many injuries in the past, the best known being caused by Aphides commonly called green or black "flies," and by a fungus or "mildew" which attacks the leaves and affects their appearance and vitality. Gardeners have learned how to avoid or combat these pests, but there is another trouble which they have suffered from for years for which no definite cause has been given.

In describing this disease of the Chrysanthemums many gardeners use the terms "blinding" or "disbudding," meaning that the ends of the branches look as if stunted, the leaves are crowded together and the internodes much shortened; and worst of all, the flower buds become abortive and the expected blossoms are not produced. It was thought that these effects might be due to minute fungi, but expert fungologists were unable to detect any fungus growth in badly affected specimens submitted to them.

It is generally the practice of gardeners to start the Chrysanthemum cuttings in frames or under glass in spring, and after danger of frost is over to transplant them to the open ground. Aphides soon become abundant on the tender terminal shoots, and these are followed by other insects of the bug family, whose relation to the Chrysanthemum is little known. Few caterpillars or insects of other orders attack the plants. With the object of discovering if possible the cause of this blight of the flower buds, a careful examination of the Chrysanthemums in different localities about Boston was made last year and have been continued the present season. The results although incomplete show conclusively that the distortions are due to the work of bugs of one or more species, which, with their slender beaks, pierce and suck the sap of the leaves and tender stems, causing the arrest of growth and giving them the familiar tufted appearance.

Probably the worst insect—one which is more abundant on the plants than all the other species together—is a leaf-hopper (*Cicadula quadrilineata*) which was first described in 1884 by Professor S. A. Forbes in his Fourteenth Report as State Entomologist of Illinois, and which is stated to have been abundant in wheat fields and injurious to Indian corn in some parts of that state. When at rest the general color of this little insect is an iridescent light yellowish green. The head is pale yellow with black eyes, and several distinguishing but variable and small black spots in front of the head between the eyes. It is very active, and on account of its color as well as diminutive size is not easily seen either on the plants or when flying, unless close and careful attention is given.

One or two larger species of leaf-hoppers are occasionally found about the plants, but they are usually rare and very probably their presence is accidental.

The common Tarnished Plant-bug (*Lygus lineolaris*) is always present in considerable numbers and doubtless is very mischievous. The Four-striped Plant-bug (*Lygæus lineatus*) punctures the young leaves and causes brown spots in them, which are often so numerous as to result in the drying and withering of the foliage. This bug is bright yellow, about three-tenths of an inch long, and has a broad and a narrow black stripe down each wing cover. Both this and the Tarnished Plant-bug feed upon a great variety of vegetation.

The Insidious Flower-bug or False Chinch-bug (*Triphleps insidiosus*) is one of the smallest bugs found on Chrysanthemums. The general color is black, but there is a broad yellowish white or light reddish band across the front half of the wing covers, while the ends appear colorless.

This little bug has a favorable record as preying upon other injurious insects, and whether it is injurious or beneficial to the Chrysanthemum has not been clearly ascertained. It is usually present in considerable numbers, and may be found, in various stages of growth, hidden in the crevices about the buds and young leaf-stalks.

Plagiognathus obscurus is common about the plants, but whether it injures them or attacks other insects is not known, as little seems to have been recorded of its habits. That it may be a serious enemy of the plants may be inferred from the fact that observation on three or four specimens of a closely allied species of bug showed that they were capable of keeping the young fronds of a Fern (*Aspidium*) in check and causing them to become stunted and brown colored. Besides these bugs several other species are occasionally found; and there are also many small flies noticeable about the plants. The flies are often of bright or metallic colors and are harmless, probably being attracted to the plants by the sweet "honey dew" from the Aphides.

Gardeners usually care more for a means of destruction than a description of an insect, so that only the names or most obvious characters of the injurious bugs are given here. The detailed and often lengthy descriptions may be found in various writings on insects.*

All of the insects named are true bugs, having no jaws, but obtaining their food by sucking the juices of plants (or, as in the case of *T. insidiosus*, the juices of other soft insects) by means of their slender beaks, which they insert within the tissue. They thus avoid taking any poison which may be applied on the leaves and which would be effectual in destroying foliage-devouring larvæ. Consequently, recourse must be had to substances which compass their destruction by suffocation. Fresh Buhach, or Pyrethrum Powder, is one of the most effective remedies against many insects of this kind, and it has the advantage of not being injurious to the plants. By the use of a hand-bellows it may be dusted on dry; or, it may be applied in a liquid form at the rate of a tablespoonful to a gallon of water. It should be dusted or sprayed forcibly, so as to come in contact with all the insects. This remedy is

* *Lygus* (= *Phytocoris*) *lineolaris*, Harris' Insects Injurious to Vegetation, pp. 202–202.

Triphleps (= *Rhaphigaster* or *Anthocoris*) *insidiosus*, in Description of the Insects of North America, by Thomas Say, edited by J. L. Leconte, vol. i., p. 337.

Plagiognathus obscurus, P. R. Uhler, in Hayden's Fifth Annual Report of the United States Geological Survey (1871), p. 412.