THE GARDENERS' CHRONICLE,

DECEMBER 29, 1877.

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PLANTS often set us mortals an example we should do well to follow. When adversity comes they are not, as some of us are, overwhelmed and reduced to the narration of despair; they seem to act on the principle that a difficulty is a thing to be overcome, and if they cannot effect it in one way they will in another. This great pliability of plant-life—this adaptability to varied conditions and circumstances, strikes us every day, and never more forcibly perhaps than in reference to the various methods of treatment applied to the Grape Vine. It might have been thought that the main lines of practice were sufficiently laid down by our ancestors, but experience shows how great is the conflict of opinion upon a point of everyday practice. Experience also shows that, disregarding extreme and exceptional cases, the general results are much the same. Skill and care, you will have noticed, are more often the deciding factors than the methods used.

The following communication, which we have been favoured by Mr. Darwin, affords us another illustration of similar character:

"The enclosed branch of Ceylon (Echeveria). was cut out from a plant growing in my greenhouse at Bonnington and was suspended on August 10 in my study, which is a dry room, and in which a fire burns most of the year. It has sent out two fine flowering stems which, from the position in which the branch was hung, have been upwards [as may be seen in the figure]. They have now (December 6) begun to flower. You will see that the plant has sent out a number of new roots. I note that the specimen weighed on September 1 75g. On December 6 35g, so that its growth has continued in spite of a considerable loss from evaporation."

Mr. Darwin was kind enough to furnish us with the specimen from which the accompanying figure, was taken (fig. 159). It is of interest for several reasons—first, as showing how long life may be maintained with only a scanty supply of food from the air and the water therein. Growth in the form of the additional matter has taken place between September 1 and December 6—a loss which probably would have been greater but for the leathery kind of the leaves. But while actual growth, in the sense of increased bulk, has been checked, the course of progressive development has advanced to such a degree that two flower-stems shoot with their appropriate form of leaf, and with their still more widely different flower-leaves, have been formed. The mysterious tendency for the stem to ascend is manifested here as markedly as it usually is. Bromelia's manage to exist in a rock-state when hung up in our stores, but they are more liberally treated in the case of these plants. Echeveria was, Mr. Duchartre submitted some plants of this character to experiment with a view to determine what part of the rootless plant absorbs the water, and he ascertained that it was the base of the leaf which fulfilled the functions in question under those peculiar circumstances, and he, moreover, showed that watery vapour was not absorbed by the plant but was discharged in a liquid state. Many years before..."
THE GENUS AGAVE.

(Continued from p. 726.)

SERIES IV. — CARNOSO-HERBACEAE. — Leaves almost herbaceous in texture, dying down annually, often spotted with brown, the tip not at all pungent, the margin entire, or at most minutely serrulate. Flowers few, solitary, lady spicato-racemosum = Manfreda, Salis. These form a most distinct group, worthy, I think, of separation from Agave as a sub-genus, in which habit and leaf-character and shoot-life-duration run parallel with a well-marked distinctive type of inflorescence. The best characters by which to discriminate the species appear to be found in the relative length of the genitate, perianth-segments and perianth-tube, and in the shape of the latter.

* Filaments not longer than the perianth-segments.

130. A. (Manfreda) mexicana, Regel. Ined. Sem. Hort. Petrop. 1836, p. 16; Gartenflora, 1837, p. 133; 1835, p. 314; Engelm. in Torrey, Bot. Mex. Bound, p. 214; Jacobii, Monogr. p. 171; A. spicata, Hook in Bot. Mag., t. 5242 (1839); Jacobii, Monogr., p. 170; Engelm., Notes, p. 13; Penan in Gard. Chron. 1874, p. 1104, t. 273. — Actinatum. Leaves 12—20 in a rosette, lanceolate, spreading, 1—3 ft. long, 1—3 inch broad below the middle, narrowed slightly downwards, glaucous green, deeply channelled, mottled on both sides with irregular brownish blotches, the edges distinctly serrulate. scape 3—4 feet long below the inflorescence, furnished with a few lanceolate bract-leaves. Flowers in a lax subsimple raceme 1—2 ft. long; pedicels very short; bracts small, lanceolate, acuminate. Perianth purplish-green, 1—2 inches long; ovary oblong, under gathered by Mr. C. Wright (v. breviflora, Engelm., Notes, p. 131) but in our specimens of the same gathering, whilst the upper flowers of the spike have the obtuse or acute uncarinate style-length as long as in the ordinary form. Jacobii, in his first Nachtrag, p. 48, describes a variety minor, in which the leaves reach only 3—4 inches in length, and a third of an inch in breadth. This variety may be readily distinguished from all the other Manfredas by its short stamens and distinctly-toothed leaves.

** Filaments much longer than the perianth-segments.

† Perianth segments shorter than the tube.

131. A. (Manfreda) vancouverensis, Lindl. Regn. Plant., ed. ii., p. 423; Jacq., f. 1c, t. 378; Bot. Mag., t. 1151; Benth., Enum., vol. v, p. 832; Jacobii, Monogr., p. 171; Engelm. Notes, p. 139; but not of Miller, who describes a variety of A. americana — Aequalior. Leaves 10—15 in a rosette, spreading, lanceolate, 6—12 inches long, 1—1½ inch broad below the middle, narrowed gradually to the point and a little down at the base, channelled below the face, undulate, plain green or mottled with brown spots, the narrow cartilaginous margin very obscurely serrulate. Sepals of the raceme, exclusive of the tube, with only a few distinct small bract-leaves. Spike very lax, 1—2 ft. long; flowers with very short pedicels; bracts lanceolate, those of the lower flowers 1—3 inch long. Perianth greenish-yellow, 1—1½ inch long, including the ovary; ovary oblong, ¾ inch long; tube 1—4 inch long, in the lower flowers, little dilated from the base to the throat; segments linear-oblong, ½ inch long. Filaments inserted below the throat of the tube, exerted ¾ inch long; anthers ¾ inch long. Style reaching to the top of the filaments. Capsule nearly globose, 1—2 inch long, cuneate and subpubescent; seeds black, discoïdal, semi-circular, ¼ inch broad.

Widely spread through the Southern United States. Dr. Engelmann describes a variety fignirosa, a robust form with beautifully mottled leaves 1—1½ foot long, 2½—3 inches broad, gathered by Dr. Mellishamp, near salt marshes, on the coast of South Carolina. A. canadensis, Jacobii and Bouché, Monogr., p. 192, sent from Mexico by Ehrenberg, unknown in flower, is said to be closely allied to A. virginica.

132. A. (Manfreda) brachyphylla, Cavan. Desc. (1802), p. 453; Knuth, Enum., vol. v, p. 823; Jacobii, Monogr., p. 184; A. spicata, C. D. C., in Reg. Lab., t. 485, non Cav.; A. polygona, Cham. et Schlecht. in Linn. Journ., vol. vi, p. 83; A. suberosa, Lindl. in Bot. Reg., vol. xxv, Maj., p. 76; vol. xxvi, tab. 55; Jacobii, Monogr., p. 172; A. humilis, Roem. et Amer., p. 15—17; anemone. Leaves 20—30 or more in a rosette, spreading, lanceolate, 1—1½ foot long, 1—1½ inch broad below the middle, narrowed gradually to the point and a little downwards, channelled below the face, plain green, glabrous, the narrow cartilaginous margin very obscurely serrulate. scape 3—4 feet long exclusive of the spike, with a few distinct lanceolate bract-leaves. Spike lax, 1 foot or more long; flowers 3—5. Bracts lanceolate acuminate, those of the lower flowers 1 inch long. Perianth 2—3 inches long, inclusive of the ½ inch long-cylindrical ovary; tube 1—2 inch long, cylindrical in the lower half; segments greenish-yellow, spreading, linear-oblong; about ½ inch long. Filaments purple, inserted below the throat of the tube, exerted ¾ inch beyond the tip of the segments; anthers ½ inch long. Style overtopping the filaments; stigma deeply globed. Capsule semi-immature only, oblong, ¾ inch long.

A native of Mexico, introduced to the Madrid garden at the beginning of the century. The best published figure is that of the Botanical Register, under the name of A. amicaria. We have an excellent unpublished drawing in the Kew collection, made from a plant that flowered, in the garden about 1839, from seeds sent by Deppe. We have a living plant at Kew at the present time, contributed by Dr. Rev. H. E. Tollemache, and dried specimens have been distributed by Dr. Harvey from Zinacapan as No. 1355 of Dr. Coulter's gatherings.

133. A. (Manfreda) pubescens, Regel et Ortgies, in Gartenflora, 1870, p. 82, tab. 80; Jacobii, Monogr., p. 172; Jacobii, Monogr., p. 172; A. spicata, Hook in Bot. Mag., t. 5242 (1839); Jacobii, Monogr., p. 170; Engelm., Notes, p. 13; Penan in Gard. Chron. 1874, p. 1104, t. 273. — Actinatum. Leaves 15—25 in a rosette, spreading, lanceolate, 1 ft. long, 1½ inch broad below the middle, a little acuminate, both sides with brownish densely pubescent. Scapes 3—4 feet long, distantly bracteate. Spike 1 foot long, laxly 15—20 flowered; flowers small, purplish, ovary ¼ inch long; ovary oblong, ½ inch long; tube twice as long as the segments; segments cylindrical in the lower half; segments linear-oblong, 1—1½ inch long. Filaments and style much prolonged beyond the segments. Discovered in Mexico by M. Roel about 1870. We have not yet seen it in any of the English collections.