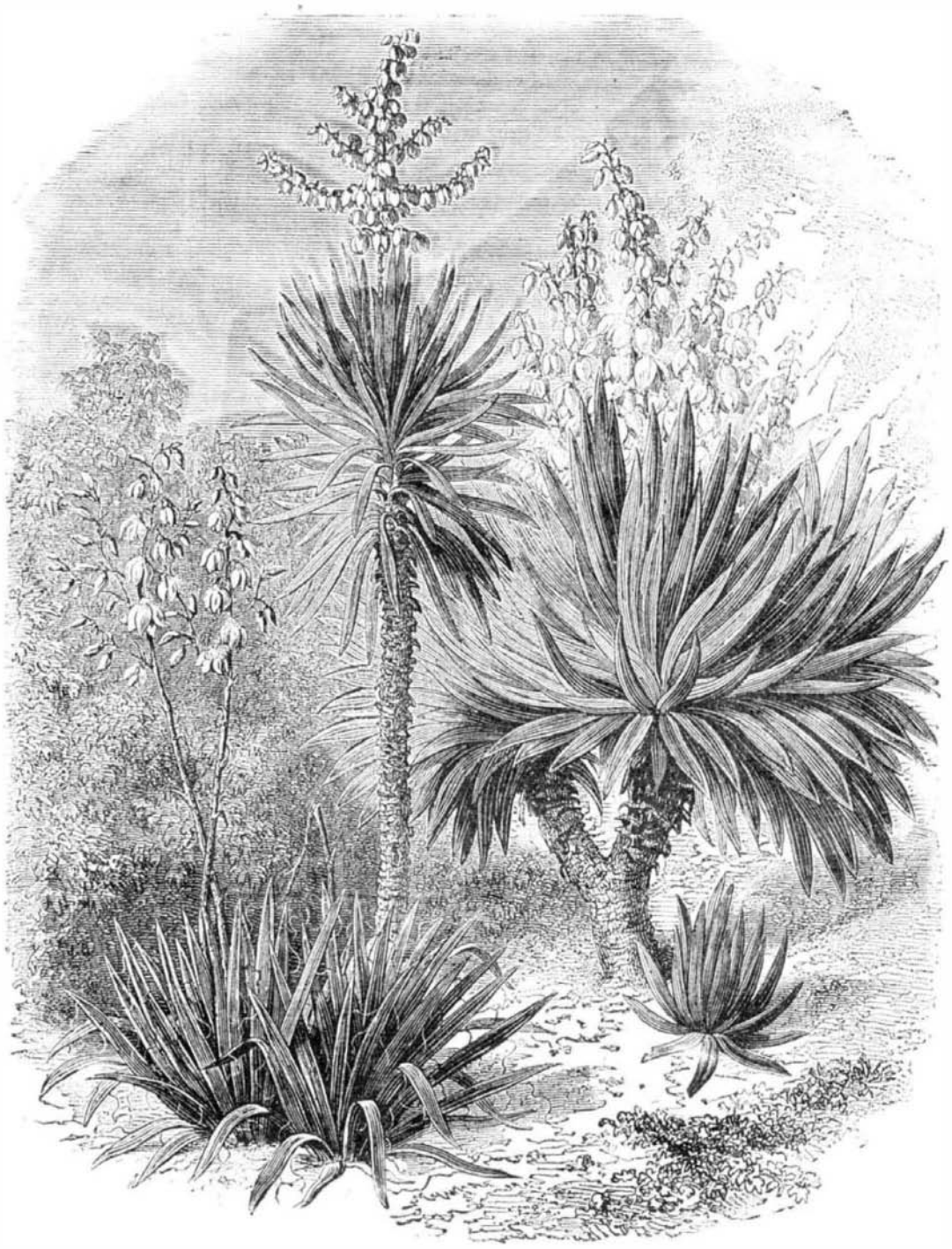
THE YUCCAS.

Much might be written, and that to good purpose, on the stately effects to be obtained by the judicious planting of yuccas of different kinds in garden scenery. It is impossible to overlook their beauty, even when planted singly or in formal lines; but if arranged in bold groups and masses, they are unsurpassed as flowering and foliage plants for outdoor decoration. Their great panicles of pearly white, bell-shaped blossoms contrast so well with bright green conifers and low-growing shrubs of less distinct contour that all through the summer and autumn it is possible to form charming pictures by massing them either on the margins of shrubberies or in sheltered nooks on the lawn and pleasure grounds. These plants are simply invaluable if properly used in forming picturesque groups and clumps, instead of being, as is too often the case, dotted indiscriminately here and there on turf in unmeaning regularity. It has often been said that the hollyhock is the only decorative flowering plant of any importance to the landscape gardener. But the yuccas are even more stately, however; and they are permanent in character, being quite as ornamental in winter as in summer. They succeed nearly equally well in any soil, but a deep, rich, well drained loam is preferable; and they make finer specimens, if sheltered from rough, cold winds, than they would do if more exposed. The flowers of all the species (and these are more numerous than many imagine) closely resemble each other, being mostly of ivory-like whiteness within, the backs of the thick, wax-like segments being more or less tinted with purple. Much may be made of yuccas by associating them in well arranged masses along with other distinct and gracefully habited plants, such as the pampas grass, *arundo conspicua*, hardy bamboos, dwarf fan palms, and a score of other valuable decorative plants too seldom seen in our gardens.

Our engraving shows how a shrubbery recess may be made a charming picture by the use of yuccas alone; and it is in positions such as these that the flowers show to the best advantage. The kinds here shown are *y. filamentosa* on the left, a kind which bears rather lax but graceful spikes of flowers. The central specimen is *y. aloiolia*, a form generally met with in cool conservatories, although perfectly hardy in sheltered positions; and it is a rather curious fact that the variegated form of this plant is found to resist cold better than the normal kind. Both, however, make noble plants. The right-hand figure represents the common Adam's needle (*y. gloriosa*), one of the most robust of all the species; and associated with it is the free and vigorous *y. recurva*. These last rarely fail to flower every year.—*The Garden.*



A GROUP OF YUCCAS IN BLOSSOM.

The Diamond Drill.

The diamond drill is now extensively used in preliminary mining, to ascertain the exact location and thickness of ore or coal at given points. It is not uncommon to bore into the sides of hills or mountains for hundreds of feet with a 2½ inch diamond drill of tubular form. By this means solid cores or specimens of the borings can be had. Conglomerate rock cores, 12 feet in length, in one piece, have thus been obtained.

The Yarn Congress.

The second session of the Congress, held first at Vienna last year, to establish a uniform system of numbering yarn, has recently concluded at Brussels.

It was unanimously admitted that all textile fibers should be numbered upon one universal system; that the metric system is gradually becoming generally employed for weights and measures, and that it is the only one that is admissible in the reform sought for by this commission; that, although it would be possible to adopt one perimeter for all classes of threads, it is advisable to take into consideration established customs, and the difficulties that would have to be overcome in introducing so great a change; and considering that there is no real necessity for fixing in an absolute manner the reel perimeters for each class of threads, and, moreover, that the perimeter of the English reel for cotton of 1·37 meters (1½ yards) is that which offers the best chances of bringing England to admit the metric system, it is therefore decided:

1. That the international numbering of threads shall be based on the metric system.

2 The number of the threads shall be determined by the number of meters (meter 3·28 feet) of thread contained in a gramme, (15·43 grains).

3. The length of the skein admitted for all kinds of threads is fixed at 1,000 meters (1,100 yards), with decimal subdivisions.

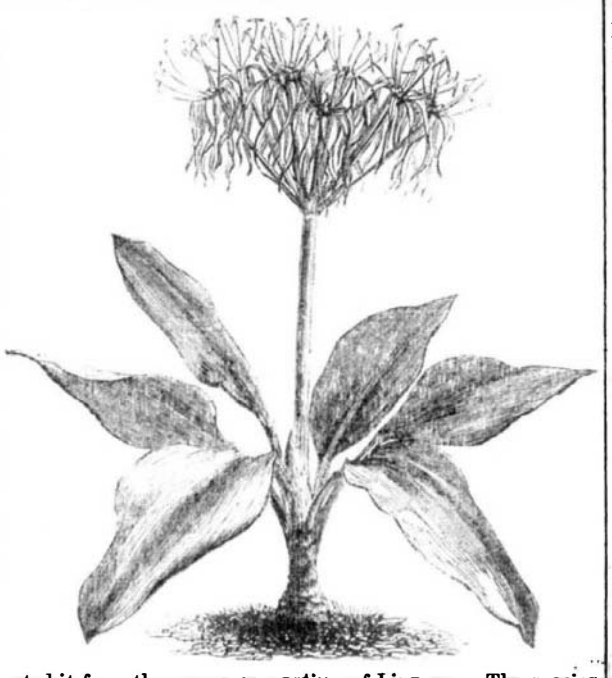
4. Any system of reeling, provided that it gives 1,000 meters of thread per skein, is admissible.

5. The numbering of silk threads to be 1,000 meters as a unit of fixed length, and the decigramme (1·54 grains) as a unit of variable weight.

6. In order to provide for the commercial relations of all countries, the scale of numberings for silk will be based on the variable weight of the unit of fixed length, and trials will be authorized on 500 meters (550 yards) weighing 50 milligrammes (0·772 grains).

THE HYMENOCALYX UNDULATA.

The genus *hymenocalyx* was founded by Herbert, who separated it from the genus *pancratium* of Linnæus. The species which forms the subject of this note (*h. undulata*, or *pancratium typhyllum*), is a native of Caraccas, New Granada, and is one of the handsomest stove plants in cultivation. From an elongated bulb, it sends up a stout compressed scape or flower stalk, about 1½ feet high, terminated by an umbel-shaped inflorescence, at the base of which are numerous scarious bracts of a greenish white color. The flowers are tubular, very fragrant, about 6 inches long, pure white, slightly greenish at the ends of the petals, which are five in number, linear in shape, reflexed and twisted, and from 3 to 4 inches long. "In the center of each flower," says W. M., an English amateur, "is a shallow cup, from which issue six long stamens. The leaves are radical, persistent, stalked, oval-elliptical in shape, and a foot or more in length; the leaf stalks are winged, and sheathing the flower stem." This very striking plant, the habit of which is well shown in our illustration, deserves more attention than it appears to receive at present. It is easily multiplied by separation of the young bulbs, which should be taken from strong plants after they have done flowering. It may also be multiplied by means of the suckers which the plant frequently produces.



Deep Mining.

Many of the leading mining companies on the Comstock lode are now down to the depth of 2,000 feet, and a few still deeper. When mining first began on the great lode, such a depth was not thought of, or, if thought of, no one expected to see mining operations carried to such a depth as 2,000 feet in less than fifty years. Now we not only do not feel startled at hearing the great depth of 4,000 feet spoken of, but when we see preparation in actual progress, for sinking that far, we think but little of it. The Savage company, whose works we yesterday visited, have broken ground for the foundations of new machinery, which is to be sufficiently powerful to sink their main incline to a depth of 4,000 feet. This incline is already some distance below the 2,100 foot level, and is still being vigorously pushed downward. The new hoisting machine will be supplied with two 24 inch horizontal cylinders, of 4 feet stroke, and will be of over 400 horse power. The foundations of this engine are being laid about 80 feet to the westward of the present hoisting works. A building, 50x60 feet in size, will be erected over the new hoisting engine and the machinery connected therewith. The carpenters are already at work framing the timbers for this building. The steel wire rope to be used is to be 4,000 feet in length, and will weigh about 24,000 pounds. It is now being manufactured by John A. Roebling's Sons, Trenton, N. J. It will be a round rope, and the upper end will be two inches in diameter, but 2,500 feet of its length will be tapered, and the lower end will be 1¾ inches in diameter. The reel on which this cable will wind and unwind will be conical, and the cable will wind about it spirally. The Ophir company contemplate the erection of similar machinery, and propose pushing their works to a like depth. The Crown Point company already have in operation machinery of much the same character as that being erected by the Savage folks, and having a cable of sufficient length to sink to the depth of 3,500 feet. The Hale & Norcross company, Consolidated Virginia company, and other leading companies at this end of the lode will erect similar powerful works, and will at once plunge down into the great unknown "depths profound," in which lie hidden the silver roots of the Comstock —*Virginia Enterprise.*

The Imitation of Lace on Silk by Photography.

A new and beautiful application of photography has lately appeared in England, by the aid of which any lace design can be transferred to silk, so that the latter material appears to be covered with the delicate and costly fabric. The lace to be copied is secured in a frame in contact with sensitive albumenized paper, and exposed to the light until a very deep impression is obtained. This is then fixed, and the paper, washed and dried, forms a perfect negative. Another piece of paper is then sensitized with bichromate of potash and gelatin, and exposed under the negative. Inking with lithographic transfer ink follows, and the paper is placed in water and lightly rubbed with a sponge. This throws out every detail of the inked spaces, the rest remaining white or free from ink. The impression is lastly transferred to a lithographic stone, and thence printed upon the silk by the usual process.

EIGHT pounds of oxygen gas and one pound of hydrogen are combined in nine pounds of water.