2 o'clock P. M.

The society having been called to order, Mr. Greenman read the following

ESSAY ON GRAPE CULTURE.

The successful cultivation of grapes, in this country is a desideratum long sought for, and realized by but few of those who have engaged in their culture. At first European varieties were largely planted, but without success. The variableness of our climate forbidding their cultivation in the open air. Recourse then was had to our own native American species, followed by better success.

The *vitis labrusca* is generally considered the best type to improve upon, while many believe that the *vitis cardifolia* is to be preferred, and that from these, seedlings will be produced that will have the ability to withstand the rigors of our winters, and whose early ripening, healthy foliage, and excellence of fruit will crown our efforts with success; and were it not for such experiences as that of 1867 and '8, very little more could be asked, so far as varieties are concerned.

Clay loams and calcareous formations are the best soils for vineyards; while eastern and southern exposures are to be preferred. Much, however, depends upon a thorough preparation of the soil, all the parts should be loosened to the depth of twenty inches; on soil's free from stone, the subsoil plow will be requisite. Trenching will be necessary on gravelly hill-sides, where it is well to invert the soil, leaving the stone near the surface.

Good two-year old roots are the best for planting, and the distance apart will depend upon the variety and mode of training. Upon this point different cultivators are not agreed; but that system of training that will not impede a free circulation of air, and at the same time expose the foliage to the rays of the sun, thereby elaborating the crude materials in the sap, developing well ripened buds, and wood, will be most conducive to the advancement of grape-growing in this country. To secure these ends, I recommend the adoption of a low trellis,
the construction of which will be explained under another head. Lay off the rows six feet apart, and the vines six feet in the rows, setting a small stake for each vine. Dig a hole large enough to receive the roots, and ten inches deep; spread the roots out evenly; raising the crown of the plant two inches; cover lightly with soil and press firmly upon the roots with the hands; fill the balance with loose soil; mulching liberally, to secure the plants against drouth. Allow but one cane to grow the first year. Removing all laterals, as they appear; pinching out the top when the vine has obtained a height of six feet; allowing it to have its own way the balance of the season. Prune to three feet; cover with soil, and mulch for winter protection.

A low trellis is constructed in the following manner: prepare stakes four feet long and two inches or more in diameter, sharpen one end and coat with coal-tar half way up; to secure their durability, drive a small staple near the top on each side, making four staples to each stake. The bows may be riven as for hoops, or sawed one inch wide, by one-half inch thick, and sixteen feet long. These should be steamed and bent on a former, on a half circle of seven feet, allowing both ends to project in a straight line two feet. The ends are sharpened to fit the staples in the stakes. It requires one stake, and two bows for each vine; drive the stakes eighteen inches deep, and two feet in advance of each vine in the row; place one end of a bow in the first stake in the first row, and the other end in the second stake in the second row, then commence in the second row in the same manner, and so alternately, until all the stakes are filled. This crosses the bows in the center between the rows; and these should be fastened together in the outside rows. A bow will extend from stake to stake around the vineyard. These bows will be high enough to allow cultivation with a horse. Bring the vines to the stake at an angle of about forty-five degrees. This will facilitate laying down for winter protection, when the vines have attained a large size. Allow the four top buds to grow, except on the corner vines, which will have three; train one branch of each
bow; rub off all the buds on the lower portion of the vines, and allow no fruit to set, as all the strength of the vine will be required to produce wood for next year's fruiting. Keep the laterals pinched in, and by the end of the season, the canes will have reached the center of the bow. At the fall pruning, cut back to two feet, and cover with soil, and mulch for winter protection. The next season extend the fruiting canes to the center of the bows, and a moderate crop of fruit may be taken from last year's wood. The next year the vine will be in full bearing. Prune on the short spur system, renewing the canes as often as desirable. The advantages claimed for this trellis are cheapness, durability, and simplicity of construction; exposing the foliage to the rays of the sun, and at the same time shading the fruit; allowing a free circulation of air, and thus secure the necessary conditions in successful grape culture.

I now come to the important matter of selecting varieties for the vineyard. This will depend more upon the location than the soil, as the aggregate amount of heat differs materially in the same latitude, and their adaptability can only be approximated, by a close observation of the amount of heat required by the different varieties, to bring them to perfection. From observations taken at Waterloo, N. Y., in 1862, and reported in the Horticulturist, I find that it requires an average of 53° of Fahrenheit to bring the Delaware to leafing, which occurs about the middle of May, and an average temperature of 59° for a period of forty-five days, or a total of 2,678° Fahrenheit from the breaking of the leaves to the setting of the fruit; and requires a period of 122 days, with an average of 63°, or an aggregate temperature of 7,927° from leafing to the ripening of its fruit, while the Concord requires about 500° more than the Delaware to bring it to perfection; and the Isabella needs 10,000°, while the Catawba cannot do with less than 11,000°, and requires about 142 days from leafing to ripening. At Janesville, Wisconsin, for six years, from 1857 to 1863, the summer mean temperature averaged 71° Fahrenheit, and at Prairie du Chien, for 19 years, the summer mean corresponds to 72° Fahrenheit, while at Green Bay, for four
years, the summer average was 68 °. From this I conclude that the Delaware and Concord may be safely planted in southern Wisconsin, and that the Delaware will ripen at Green Bay. While near large bodies of water, or on high altitudes, where the September mean temperature extends into October, without intervening frosts, the Isabella, Catawba, Iona and some of Rogers' hybrids, with other late varieties, will succeed. I, therefore, further conclude that no varieties should be extensively planted that require an aggregate summer temperature of over 8,000 ° Fahrenheit, while near lakes, as at Madison, or on the bluffs along the Mississippi, or near Baraboo, the late ripening varieties may be planted with expectations of success.

Among the thoroughly tested varieties, I would name the Delawares as at the head of the list, and the Concord as nearly equal to it. While the Janesville, with its early ripening wood and fruit, together with its productiveness, adapts it to a large range of country, where the late ripening kinds cannot be successfully grown. And in concluding, let me urge the horticulturists of Wisconsin to observe the requirements of the many candidates for public favor, and thus determine what varieties to plant, that every family in our state may sit under their own vine and enjoy their refreshing fruits, using as not abusing, one of the best gifts of God to man.

The essay being completed, the president announced that the subject of discussion in order was

GRAPES AND VARIETIES.

Mr. Adams remarked, that with him, in northwestern Iowa, Rogers's Hybrid No. 8, ripened as early as the Delaware; and he thought much of that grape.

The Creveling.—Mr. Kellogg preferred the Hartford Prolific to the Creveling, for its fruit and bearing qualities.

Mr. Greenman said his Crevelings rotted badly on the vine.

Mr. Adams said the Creveling was of the first quality with him; though the bunches were loose, it fruited well.
Mr. Tuttle considered the Creveling better than the Hartford. It fruited heavily on his grounds, but does not ripen evenly in the bunch.

Dr. Hobbins said he was almost tempted to place the Creveling first on his list. It is a vine not injured by drought or cold, like some other kinds. His family preferred it to all the other kinds in his garden.

*The Diana and Rogers' Hybrid.*—Mr. Tuttle thought we had much better grapes than the Diana. The vine of that was too tender for our severe winters. We wanted not only a hardy vine, but also a berry with long keeping properties. Such could be found among the Rogers' hybrids. He would name Nos. 4 and 15, as grapes that possessed the long-keeping properties. The last in particular. He had some of No. 15 in a box, among other grapes that had rotted, and yet they were sound. They could be kept till April with proper care. He had noticed that it loses its muskiness with age. The first choice in his garden were the Rogers' hybrids.

Mr. Kellogg said that he had heard the Diana recommended for its long keeping qualities. But he knew the Delaware would keep as long as the Diana. He had Delaware's now which he had kept by merely putting papers between the bunches.

Mr. Adams saw the No. 15 at the Iowa state fair, in January, in good condition; and was satisfied of its long keeping properties.

Mr. Finlayson preferred the No. 15 to all others, except the Delaware.

Mr. Askew preferred the No. 15 to the Concord even.

A motion was then made and carried to place Rogers' No. 15 at the head of the list and before the Diana, for its long-keeping qualities.

Mr. Kellogg moved to place Nos. 4, 3 and 19 on the list for trial, which prevailed.

Mr. Tuttle should support this motion; as far as he knew, the Rogers' hybrids have all the good qualities of the Concord and often keep equal to or better than the Diana. Nos.,
3 and 19 commenced ripening as early as the Hartford Prolific, and Nos. 4 and 15 with the Concord.

Mr. Adams was in favor of the motion, as they had done so remarkably well with him.

The Janesville.—Mr. Plumb moved to place the Janesville on the list as a good grape for trial. He had watched this grape for some time, and it had behaved admirably. It was hardy and ripened its wood and fruit well, though in quality it could not be placed at the head.

Mr. Greenman. It has stood where the Concord and Delaware have failed. He hoped to have a large show of fruit for another year. He had started a large number of vines this winter, in a forcing house, but the house had taken fire, and he had lost the whole of that stock; and he did not know of any other for sale, except a few plants in his open grounds.

The motion prevailed, and the Janesville was recommended for trial.

Other Kinds.—Mr. Peffer has seen the Martha, which had made considerable noise, but it did not come up to the recommendation it had received. He thought it a regular humbug for this state.

Mr. Kellogg had seen the Worden Seedling in New York, where it was produced. He found the parent still alive, growing by the side of all the leading sorts, and ripening its fruit five days earlier than the earliest. He thought it was a seedling from the Concord. From three years' trial it had proved very hardy in his nursery, and he was favorably impressed with it.

NEW FRUITS AND EXPERIMENTS.

Mr. Plumb offered the following, which was adopted:

Resolved, That we, as a society, do extend to all producers of new fruits our warm sympathies in their efforts for the good of the cause, and recommend them to bring their fruits before the public through our patronage and under the observation of our members, and by placing them in the experimental garden.

Hor.—5.