

ance. The Green Mountain is a new, early, white grape of fine quality and a good producer; it is one of the most promising of the white grapes of recent introduction. The Mills grape is another new introduction; it is black and showy, but not healthy, and I have never been able to produce a single perfect bunch.

Fertilizers for Grapes.—*Previous crops.*—In planting a new vineyard, we can select rough land, full of roots, etc., providing that by stirring the soil the roots have well decayed. Land can have been planted one year to clover, lucerne, sainfoin, and the like, or even with hoed crops.

Fertilizer.—90-180-260 lbs. Super-phosphate, or 180-350-530 lbs. Thomas Slag or Bone meal, or for heavy soils, 90 180-350 lbs. high-grade Sulphate of Potash, or 80 per cent. Muriate, 180 350-530 lbs. Chili Saltpetre, 130-260 400 lbs. Sulphate of Ammonia.

Additional suggestions.—An application of 18 tons of stable manure is not sufficient to supply the plant food for an acre of vineyard for 4 years. Dr. Barth, who has experimented considerably in this direction at the Alsace-Lorraine Experiment Station at Rufach, has recommended an additional application of commercial fertilizers. His rules are to manure with stable manure once in 5 years, with phosphoric acid and potash once in two years, and with the necessary amount of nitrogen in the spring of each year.

Where stable manure or muck is not to be had, except at a high price, one can get along with fertilizers alone, and can keep the soil in good mechanical condition by planting green crops, or making and applying a compost. One can prepare a compost, that will last for 3 years, by taking 3-5 tons of fairly well dried muck, and mixing with it 450-900 lbs. lime and one of the two mixtures of artificial fertilizers recommended above.—B. 55 Geneva Experimental Station.

Nitrogen and Nitrogen-Gatherers.—A few words in regard to nitrogen in fertilizers will not be out of place. This is the most costly constituent of commercial fertilizers; and, in many instances, the increased cost of the fertilizer will balance or even exceed the increase in the proceeds from the crop, due to the nitrogen. Fortunately, we are not obliged to rely entirely upon commercial fertilizers for our supply of nitrogen to enrich our soils. Recent investigations have proved that the class of plants called "leguminous plants," to which the clovers, peas, beans, etc., belong, have the power of deriving from the air a part of the nitrogen required in their growth. For this reason they are sometimes called "nitrogen-gatherers." This fact helps to explain why clover is so valuable in restoring and enriching poor soils. If we fertilize our crop of clover liberally with potash and moderately with phosphates we have there the means of enriching our soil in all these "essential ingredients" of fertilizers. This is a very important principle in the use of fertilizers, and is in accordance with long established practice.—Bulletin No. 46, Ky. Ex. Station.