

Miscellaneous.

What Varieties Come True from seed.

An intelligent correspondent from Burlington says: "An apple-seed produces an apple-tree, but it will not always produce an apple-tree of the same kind. Wheat of any variety produces the same; seed of a scarlet variety of Verbena will not always produce its like. Why this anomaly? The "why" of the matter can not be told, but a few general rules may be useful. Seeds of plants found in the wild state, in their native habitats, almost invariably produce a progeny identical with the parent, and many species, even after they have been subjected to long years of cultivation, never appear to change seemingly in the slightest degree. Other species under cultivation quickly develop varieties entirely different from the original, and become what is technically termed "broken." Thus the original species of our well-known Verbena is indigenous to South America having a comparatively small scarlet flower. From this, and probably some other species hybridized with it, we have the gorgeous and varied coloring of the variety of to-day. But it took many years to produce this, for we can well remember in our early gardening days there was no white, and the furor that took place in the floricultural world when *Verbena leucocila*, the first white, appeared. It was far from being an attractive plant, but the color was novel, and single plants were sold by the florists at that time at a price that would now buy a hundred. The Verbena, then, is one genus whose species have given us innumerable varieties. The Chrysanthemum, Dahlia, Uedisia, Geranium, Pansy, Petunia, the Rose, and many others, are also familiar examples where the original species has "broken" from what may be termed its primary condition into ever-changing variety. Thus changed, it is probable that their seeds will never produce two individual plants exactly alike, any more than two identical human faces or forms are produced. It is probable that all species of animals and vegetables, under long years of domestication and cultivation, would ultimately "break" from the original type, though we know that in some species this tendency sooner develops than in others. It is not to be wondered at that the amateur horticulturist is puzzled at what looks like inconsistency in nature - why she refuses to produce always again his Apple or his Peach, his Striped Petunia or his Double Carnation, yet gives him back seemingly identical with the parent his Wheat, his Cabbage, or in flowers his Magnonette or Alyssum. I say seemingly, for it may be doubted if they are identical, only that the variation is so slightly marked that it escapes notice. Many whose experience in such matters should have taught them better are always confounding plants raised from cuttings or slips with those raised from seeds, and can not see why the plant raised from a slip or root of a white Dahlia, or a tree raised from the graft of an Apple, should be always identical with the plant or tree from which they are taken, while the seeds taken from either would not produce the same. Any cutting from a root or a branch, whether rooted itself or engrafted on another stock (except in rare cases of sports), will be identical with that of the original form from which it was taken; in fact, it is only a separated part of the same plant, while the plant raised from seed is a distinct individual. - Peter Henderson.

Hydraulic Rams.

Last spring I saw in your columns an advertisement of "Improved Hydraulic Rams," by Gawthrop & Son, Wilmington, Delaware. I sent for a circular, and have been well repaid. The pond from which I raised water by an ordinary ram receives the wash of a long clay road, and after a heavy rain is very much discolored for several days, making the water objectionable for house use. This is very simply overcome by Gawthrop's double-acting ram, which uses the pond water for power, but elevates water from a spring about thirty feet from the ram.

I will describe it for the benefit of those who may be similarly situated. When in action the impulse is expended upon the under side of an india rubber diaphragm about eight or ten inches diameter. The water from the spring is conveyed to an upright pipe a foot or more in height, and above the diaphragm. A valve at the foot of this pipe prevents the backward flow of the water to the spring when the diaphragm is lifted, consequently the pressure simultaneously opens the valve in the air chamber, and now the water is with every stroke passing up the delivery pipe as in the ordinary ram. The amount

of water delivered is as great as in the single ram. The motion of the diaphragm is so slight that I think it will last for many years. The valves in the upright pipe, and air chamber, are simple clapper valves, which can be quickly renewed when worn, and as all the parts are keyed together, a hammer is the only tool needed in taking apart or putting together. Mr. G. deserves great credit for simplifying the ram so that it can be easily taken care of. The piston, or outlet valve of the Gawthrop rams (one of the most important parts of the ram) is made with more care, and a better adjustment than that of any ram I have ever seen, and I believe I have seen all the different makes in use. They work with a perfection that seems to leave no room for improvement.

They also manufacture a regulator—a small, simple device, which is attached to the upper end of the feed pipe. It will stop and start the ram as the water falls or rises in the box into which the spring flows. This is very useful where the supply of water is small, or when the spring is affected by drought. With a regulator a ram will raise a greater percentage of water, as it may be set to work with a long, healthy stroke, and will not be so liable to stop. The regulator can be adjusted to run from one, to ten minutes, as desired, and then it will stop the ram without wasting any water, and as soon as the water rises again in the box it will open the valve, and thus alternately stop and start from one week's end to another. - Cor. Country Gentleman.

Does THE SAP FREEZE?—A remarkable paper has recently been contributed to a German magazine by Professor Mohr, showing not only that the sap does not freeze in trees and plants which live through hard winters, but also the reason why it does not freeze. He says that although it is true water, as we generally see and understand it, freezes at thirty-two degrees, it does not do so when its particles are finely divided. Tropical plants have large cells, and these are the ones in which the sap freezes; but in plants with very small cells in which the liquid particles are finely divided, there is no freezing of the liquids until after the structure has received injury of some sort. This is true, he says, of insects and insect pupae. They never freeze; but cut one apart, soon after the humors solidify, and on thawing life dies. - Ex.

SELLING BY WEIGHT.—Cannot some means be adopted whereby eggs and apples shall be sold by weight? A farmer in Madison carried eggs to market last week which weighed 28 oz. per doz; another person sold at the same store eggs which weighed 17 oz. per doz. Price paid to each was 30 cents per dozen.

If 1 doz. weighing 17 oz. are worth 30 cents, how much is 1 doz. worth which weighs 28 oz?

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As 28 :: 30 :: 17 18 6-28

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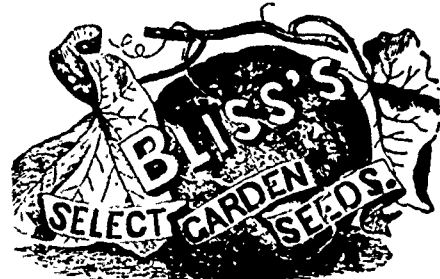
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Pear, Plum and Cherry Root grafts	-	-	1000, 12.50
Snyder Blackberry, strong plants	100	-	100, 15.00
do. do. young plants	100	6.00	1000, 40.00
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