Home Course In Modern Agriculture

VI.—How Plants Are Propagated

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IN order to continue to raise crops from year to year we must propagate the plants in some way. There are two principal ways of doing this—by seeds and by divisions of the plant itself. The most important of these is by seeds, as it is in this way that most of the ordinary farm crops are multiplied.

In order to understand this process we must first learn how the seeds are formed. The tassel of the corn is the male flower and the silk the female. Some plants, such as certain varieties of strawberries, have only female flowers and must be planted in alternate rows with varieties which have both kinds of blossoms. In other plants the male and female flowers are combined in one. This is the case with the apple and many other fruits. In the apple the stamens, or male parts, grow in a ring around the pistil, or female part, which is in the center of the flower. The top of a stamen, which is expanded, is called the anther. This contains a yellow dust, the pollen.

The upper portion of the pistil is called the stigma. From it a tube called the style leads downward to the ovary. This ovary contains one or more egg shaped cells called ovules. Each of these ovules is capable of developing into a seed if fertilized with a pollen grain. When a grain of pollen alights on a ripe stigma it is held by a sticky substance secreted there. It soon germinates and sends a long, threadlike projection down through the style to the ovary. This slender projection enters the ovary, and the resultant union of the male and female elements causes a seed to develop. One pollen grain is required for each ovule, and each ovule develops into a separate seed. There are many thousand pollen grains produced by each stamen, and as there are several stamens for each pistil you will see that a great excess of pollen is produced. This is one of nature's methods of making reproduction more certain.

In flowers like the apple the pollen may sometimes fall directly on the stigma in the same flower. More often, however, the stamen and pistils ripen at different times. The object of this is to prevent self fertilization, which, if long continued, will weaken the vitality of the coming generations. Cross pollination—that is, the fertilization of the ovule of one flower by the pollen from another plant—unites the strength of both parents and produces larger, hardier seed.

This has been proved by many experiments. If the tassels are pulled from a row of corn before they have time to shed their pollen, the silks must necessarily be fertilized by pollen from other stalks. The cross pollination will cause the detasseled rows to produce heavier and larger ears. If this process is continued from year to year the yielding power of that particular strain will be considerably increased.

In such plants as corn the wind carries the pollen for rods in every direction. The air in the cornfield is so filled with the yellow dust that there is seldom any danger that the silks will fail to catch more than plenty to fertilize each of the many ovules that are to form the future kernels.

Some plants, however, are not so fortunate in this respect. The pollen of fruit trees is carried to some extent by the wind, but not nearly so much so as that of corn. In such plants as

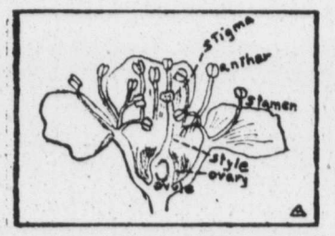

FIG. XII—SECTION OF CHERRY BLOSSOM SHOWING MALE AND FEMALE PARTS.

clover the stamens are at the bottom of a slender tube, from which they cannot escape unaided. Plants of this nature are dependent on insects to transfer pollen from one flower to another. In order to attract these insects the flowers secrete a sweet nectar, which collects in the bottom of the tubes of which the flowers are composed.

Ants, flies, butterflies and bees are very fond of this nectar and in collecting it carry the pollen of one flower to the stigma of another. Bees are most important in doing this work because they gather so much more of the nectar than do the other insects. They also carry home some of the pollen, which can be seen sticking in yellow balls to their hind legs, but enough is always brushed off to fertilize the flowers which they visit. The blossoms of red clover are so large that the short tongues of ordinary honeybees cannot reach to the bottom. It is upon the larger bumblebees that this crop depends for its ability to produce seed. So important is it so entirely dependent upon them that the crop of clover seed is in direct proportion to the number of bumblebees in the neighborhood. It is not anything but pleasant to run into a bumblebee nest of bumblebees with a mower or rake, but before you build a fire over them stop to think whether you want a crop of clover seed or not.

Some beekeepers are developing strains of honeybees with exceptionally long tongues. Some of these are able to obtain honey from second crop red clover, which has smaller blossoms than the first crop. When these strains of bees become a little better developed and more widely distributed the usefulness of the bumblebee will be over.

In the case of small grain cross fertilization is impossible, since the flower is inside of a closed hull. Two varieties of wheat may be planted in adjoining fields or even in the same field without the slightest danger of mixing. Varieties of corn, on the other hand, often mix when as much as forty rods apart.

The selection of seed corn will be taken up in the next article. The best

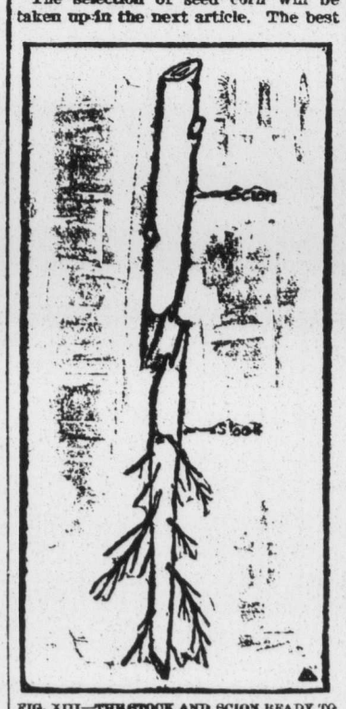

FIG. XIII—THE STOCK AND SCION READY TO BE UNITED.

method of selecting small grain is by means of the fanning mill. By running through three or four times as much seed as is needed all the small grains may be sieved out and the light ones blown over, leaving only the heaviest, strongest ones for planting.

Grain that is intended for seed should be stored carefully in order that it may go through the winter uninjured. The chief enemies of stored seed are moisture, insects and rats and mice. The seed should be dry when stored and kept where moisture cannot gain access to it. Dry seed will stand almost any amount of freezing without injury.

There are a number of insects that damage seed grain by burrowing into the germ. If the seed room is tight, they may be killed by fumigating with carbon disulphide used at the rate of a pound to each thousand cubic feet of space. Place this in an open dish on top of the seed, close the room as tightly as possible, and in a few hours the insects will be exterminated. Care should be taken not to go near the room with a light, as the gas is explosive. This same treatment is also fatal to rats and mice, unless they have some way of escaping from the room. If possible the seed room should be so well built that these pests cannot get into it.

The second method of plant propagation is by division—that is, by planting parts of the plant itself. Potatoes are propagated in this way almost entirely. If small willow and poplar branches are stuck into the ground, they will grow into trees. Apple and other fruit trees are propagated either by grafting or budding. Apple trees may be raised from seed, but the fruit of seedling trees is usually worthless. By taking a part of the tree and growing another from it, it will, of course, bear the same kind of fruit.

Grafting consists of joining pieces of small branches or scions of the tree which is to be propagated to pieces of roots or stocks. The roots of yearling seedlings are used for stocks. The scions, which should be about the size of a lead pencil, should be cut in the fall and packed in sand. The grafting can be done at any time during the winter. All that is necessary is to cut the lower end of the scion and the upper end of the stock at an angle, as shown in Fig. 13. These are then carefully fitted together and tied with a little common string. The essential point is to be sure to have the cambium layer of the scion join that of the stock. This cambium layer is the thin, light brown portion between the bark and the wood. It is the point where growth takes place.

The completed graft, which should be eight to ten inches long, is again packed in sand. In the spring the grafts are planted in a row in the garden and left until they are two or three years old, when they may be transplanted to their permanent place in the orchard.

FUNERAL OF ANDREW DUNN

The funeral of the late Andrew Dunn of Harcourt took place in that village in the forenoon of the 11th instant, Rev. R. H. Stavert conducting services in the home and church, and at the grave. The attendance was very large, showing the great respect in which the deceased was held by his neighbors. The Sons of Temperance, of which deceased was a fathful and prominent member, marched in a body in the funeral procession. Rev. Mr. Stavert preached from II Corinthians, Chap. V, after which an address was given by H. H. Stuart of Newcastle, District Scribe of the S. of T. The United Choirs of the village were present. The order of service was as follows:

Hymn—Peace, Perfect Peace.
Reading—Psalm 90.
Prayer—Pastor.
Hymn—The Lord Is My Shepherd.
Reading—Revelations, Chapter XXI.
Sermon—Pastor.
Address—H. H. Stuart.
Prayer—Pastor.
Hymn—O God of Bethel.
Hymn—(When dismissing)—Sweet Bye and Bye.

The pall bearers were H. Wathen, Wm. Livingston, W. G. Cameron, W. G. Thurber, D. W. Clark and Thomas Ingram.

The display of floral tributes was beautiful. Among them were: Pillow, from the Presbyterian S. S. and congregation. Sheaf of Wheat and lilies, from S. of T. Division. Sheaf of Wheat, Mr. and Mrs. L. W. McAnn, Moncton. Crescent, Mr. and Mrs. G. L. Keswick. Cut flowers, H. Wathen and the Misses Wathen. Cross, Mrs. O. L. Jones, of Grangeville. Crescent, Mr. and Mrs. Saulnier. Flowers, McKenzie Wathen. Crescent, Mrs. English and the Misses Campbell. Lilies, Mr. and Mrs. John Seattie. Cut flowers, Dr. and Mrs. Fairbanks. Wreath, Mr. and Mrs. Buckerfield.

FREE ROOFING SAMPLE.

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All you have to do in order to obtain the sample is to send a postal card request for same to the nearest office of Barrett-Patterson Mfg. Co., Ltd, St. John, N. B., Halifax, N. S.

EMERSON.

Mr. Will Beers spent Sunday with friends here.

Misses Lizzie and Eva Beers visited Harcourt on Friday last.

Mrs. Isaac Beers, who has been visiting friends here for some time, returned home on Tuesday.

Rev. Mr. Stavert passed through here on Wednesday en route to Beersville where he united in marriage Mr. Tom Glen and Miss Nellie Carruthers.

The Trustees of the district have succeeded in obtaining Miss Lyda Davidson's service for next year again.

Quite a number of the people attended the dedication of the new Baptist church in Grangeville on Sunday.

Miss Mary McGloin has returned to Moncton after a short visit with her parents here.

Mr. Fred Beers' many friends are pleased to see him visit his old home here.

Mr. T. O'Leary paid Harcourt a flying visit last week.

Mr. and Mrs. James McLeod spent Friday with friends here.

Miss Lyda Davidson, Miss Mae Howard and her brother Herbert, were the guests of Mr. and Mrs. C. O'Leary on Sunday last.

Mr. Adam McLeod was the guest of Mr. J. Beers on Wednesday last.

Miss Florence Beers and her brother David have returned home after a short visit with friends in Hopewell.

Mr. Robert Ogden spent Friday and Saturday with friends on the Harley Road.

It is rumored that wedding bells are to ring in the near future.

WHO IS
heMost Popular Employee
OF THE I. C. R?

Beginning with this issue of THE ADVOCATE, until the 26th of June, next, a contest will be waged for the most popular employee of the People's Railway.

Below will be found two coupons. The first when duly filled in and accompanied by one dollar for a full year's subscription to THE ADVOCATE, in advance, entitles the sender to 100 votes for the candidate of his choice. The second coupon when filled in entitles the sender to one vote for the chosen candidate. This coupon may be sent in by any person, whether subscriber or not.

Any person whose subscription is at present in arrears, may, by paying all arrearages and one year in advance send in one coupon No. 1 duly filled in for as many dollars as are remitted.

Coupon with remittance enclosed may be handed in at, or sent by mail to, the office of the publishers any time before ten o'clock on Saturday evening, June 26th, next.

Announcement of results will be made in these columns each week until above date.

The person receiving the largest number of votes will be presented with a handsome Morris Chair,

All employees of the I. C. R. and all retired employees are eligable for candidature.

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An order by the Harriman railway lines for more than a hundred new locomotives is taken as a sign that the panic of 1907 has completely passed away.