

table 2, 100 pounds will produce approxi- Therefore, the net x 22 1/2 cents = \$2.16. at is determined by es 56.84 cents. The red into butter may the market value of manufacturing differs e, the correct figures

RY.

Necessary.

ors in the successful nsable. These two health, vitality and e of three factors of foundation stock o factors being size

expect a great deal rly. The barnyard ost sight of, and in producer of human nite place on hun- ountry. Formerly omen and children, or various purposes arm flock of to-day

During the years stly with the result ed to use up either eliminated. More- estigating poultry of egg production at the knowledge it was a few years uring the summer e can, if we have ell, approximately profitable member- ond to cleanliness, as other live stock ade the hen work do so. Everyone he longer we keep e must have in tution and vigor, important factors that we expect her predecessors

r-production, and v a loss of vitality that a good hen e to five times the rage hen probably equal the weight n egg every three authorities have thirty times her o a certain extent Much of the low and much of the ks, can be traced nd constitutional cks show birds e strong in vigor. fully carried out and the per- rds increased. ers in order to fix where this done, e be given to the at are so bred, characteristics of reeding, nothing he birds so bred impart it to their ductive Poultry s which cause few paragraphs itality. These ill, so that they

or breeding will from immature fowl is allowed store up energy and it will be production are greatest degree fore, at as early ults which are them time to . The modern responsible for e it is desirable should be the extensive farms poultry plants. ve more vigor poses, as fruit e being raised ack of exercise of low fertility nness and im- ng chicks give ng stock with

superior physical vigor is another factor. If the desire is to increase or even maintain a high degree of vitality this election is paramount.

"Signs of high vitality or lack of it are easily distinguished. The following are a few: The actions and movements of fowls probably best indicate their physical condition. The physically weak are inactive and dull, and more likely to sit than to stand. They do not range to any extent in search of forage, nor do they scratch in search of feed. They are longest on the perch, possibly spending the entire day there. The loudness and frequency of the crow of the male, and the cackle of the female, are indications of physical strength and superiority. The weak fowls seldom crow or sing. There are certain body signs which indicate lack of vigor in a fowl; as, for instance, long neck, thin beak, narrow head, a long slender body, long legs and thighs, or a stilted appearance, while the reverse is true of vigorous birds. In the young, growing chick, common signs of low vitality are stunted growth, accompanied by slow feathering and a pronounced crow-like beak, drooping wings and head, and a low, squatting walk. The strong bird at any age should have a bright prominent eye, a well-developed, blocky body, bright plumage, and erect carriage, bright comb and wattles, and should be active and sprightly in movement. It is evident that there is a relation between the physical characteristics of fowls and their vitality; hence it should be the rule systematically to select for constitutional vigor at all ages and for all purposes."

HORTICULTURE.

Self Sterility of Fruit Varieties.

Every observant fruit grower is fully aware of the fact from long experience that some varieties of fruit, although equipped by nature with flowers bearing both male and female parts are not self-fertile; that is to say, they will not set fruit from pollen of the same variety. A great many varieties of strawberries are self-sterile by reason of the fact that the blossoms of these varieties lack the male organs of the flower. The well-known Northern Spy and McIntosh Red varieties among apples are self-sterile after the manner first named, that is to say, blossoms of these varieties show both male and female parts, but pollen of either of these varieties will not fertilize flowers of the same variety. No one knows exactly which varieties of the different kinds of fruit are self-sterile and which are self-fertile. In fact, no one can know under all conditions, because those who have investigated the problem have found that the self-fertility of varieties is likely to vary under different conditions.

Fruit growers, as a rule, neglect to pay particular attention to this very important point when selecting varieties to plant. It is for this reason alone that large orchards planted altogether to Northern Spy apples are very often unprofitable, for the reason that they do not bear fruit. If there are other orchards near, and bees as well as other insects are plentiful, a sufficient number of the blossoms may be pollinated to provide a satisfactory set of fruit, but this is not to be depended upon and one should always see that the varieties which are known to be self-sterile are planted in between other varieties. It does not matter whether the other varieties are self-sterile or not, so long as they bear plenty of pollen and will bloom at about the same time as the self-sterile varieties. There are certain varieties of tree fruits, of course, that are relatively

poor pollenizers, either for themselves or other varieties. Such, for instance, is the Kelsey plum, which, according to the California Experiment Station, must be considered inferior as a pollenizer for a number of other late varieties as well as for itself. A considerable amount of work has been done during the last five years at the California Experiment Station, in determining what varieties among plums are self-sterile, and while, as we have said before, self-sterility of a variety under one set of climatic conditions does not appear to mean self-sterility under another set of conditions, the results of these experiments should in the main apply to Canadian conditions. The following paragraphs are taken from the bulletin containing the results of these experiments, and should be of interest:

JAPANESE VARIETIES.

"Results with Burbank indicate that while absolutely self-sterile it is readily pollinated by any one of the several varieties used, and is also an efficient pollenizer for the other varieties which blossom at the same time. The only poor results were obtained when Kelsey was used as the male parent. The reciprocal of this cross,

viz., Kelsey X Burbank, also gave low results both years it was tried. Crossed with Satsuma, Wickson, Climax, or Sultan, Burbank gave as satisfactory results as could have been desired. The reciprocals of these crosses were also satisfactory. Burbank is undoubtedly one of the most sufficient pollenizers of its season, and a valuable variety for this reason.

"The Wickson was also found to be a reliable cropper and an excellent pollenizer. When Wickson was used as the female parent all pollenizers gave satisfactory results except Kelsey, Sultan, and Abundance. Kelsey has already been mentioned as an unreliable pollenizer. The Sultan and Abundance crosses were only made in 1917 and as the interval of time between emasculation and pollination was eleven and twelve days, respectively, these two varieties cannot be eliminated as pollenizers for the Wickson without further trial. Wickson has proved its worth as a pollenizer for Satsuma, Burbank, Climax, Sultan, and Abundance by the high average set these crosses produced throughout a series of trials. With Burbank it ranks as one of the best pollenizers.

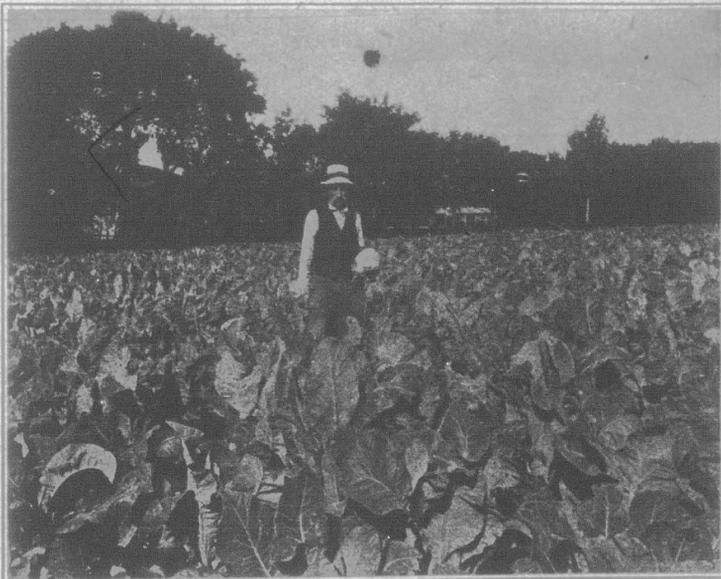
"Climax in addition to being self-fertile was found to be easily pollinated with Burbank, Wickson, and Abundance. With Kelsey as the male parent, no better results were obtained than when Kelsey was used with other varieties. Climax pollinated Burbank, Wickson, and Abundance satisfactorily. Because of its tendency toward self-fertility, and because it is a good pollenizer, Climax is a valuable variety. Furthermore, it blossoms rather late in the season, thus tending to escape late spring frosts.

EUROPEAN VARIETIES.

"The Grand Duke, Yellow Egg, and Pond inter-pollinated successfully in 1917 when the pollen was applied before the pistils began to wither. In general they have proved to be excellent pollenizers not only for themselves, but for the Clyman and Tragedy also. As these latter varieties have been used for practically only one year their value cannot be considered as authoritative as that of varieties tried out for four seasons. All of the European shipping plums which have come under observation have proved to be abundant pollen producers. Furthermore, the pollen is easily germinated and generally shows a high percentage of viability.

CONCLUSIONS.

- 1. "The following varieties of Japanese plums were found to be self-sterile at the University Farm at Davis, California: Combination, Kelsey, Satsuma, Burbank, Wickson, Sultan, and Abundance.
2. "Climax, another Japanese variety, is apparently self-fertile.
3. "In general, the early blooming Japanese varieties such as Combination, Kelsey, and Satsuma, are scanty pollen producers and not effective pollenizers, while the



A Good Sample from a Promising Crop.

later blossoming varieties such as Burbank, Wickson, Climax, Sultan, and Abundance produce pollen abundantly and are effective pollenizers.

4. "Clyman, Tragedy, and probably Grand Duke, are self-sterile, while Yellow Egg and Pond from one year's data appear self-fertile. Pond, or Hungarian Prune, as it is known in California, has long been popularly regarded as self-sterile, so too much weight should not be given to the results obtained in one year.

5. "All of the five European varieties tested seemed to be abundant pollen producers and to cross-pollenate one another effectively.

6. "No evidence of inter-sterility among plums or prunes was found.

7. "A comparison over a number of years between trees where there was an abundance of bees flying and trees where bees were scarce, emphasized the desirability of having bees in the orchard. Even self-fertile varieties were immensely benefited by the presence of bees as an agency for distributing the pollen.

8. "Climatic factors are probably important in the setting of plums and prunes as evidenced by the fluctuat-

ing set obtained with certain crosses in succeeding years. Investigations, however, have not progressed far enough as yet to throw any light upon this phase of the problem.

9. "The following is a list of self-fertile and self-sterile plums and prunes as found by the Division of Pomology of the University of California:

Table with 3 columns: SELF-STERILE, SELF-FERTILE, DOUBTFUL. Rows include varieties like Combination, Kelsey, Satsuma, Burbank, Wickson, Sultan, Abundance, Clyman, Tragedy, Yellow Egg, Grand Duke, Imperial, Robe de Sergeant.

FARM BULLETIN.

House of Commons Expected to Prorogue.

At the time of writing, it is expected that Parliament will prorogue on Monday afternoon, November 10, at four o'clock, after a session lasting since September 1, and during which time the Peace Treaty has been approved, both with Germany and Austria, the Grand Trunk Railway system has been taken over by the Canadian Government, Parliament has decided not to grant the \$2,000 gratuity demanded by many of the returned soldiers, and the two Prohibition Bills probably passed.

The two Prohibition Bills passed at the last moment and debated on Sunday, November 9, in order to get ready for prorogation on Monday, will still leave to manufacturers of any province the right to make intoxicating liquors for export or for sale in any province where laws do not prohibit. It is incumbent on the Dominion Government to hold a referendum on the question of revoking prohibition where any provincial legislation demands that this be done. It is also provided that the Federal Government must conduct a referendum within three months from the time the Provincial Government requests it.

The Grand Trunk Railway Bill secured its second reading in the Senate by a majority of only four, but on the third reading it passed without division. With regard to the report of the special committee on Soldiers' Civil Re-establishment, a number of members still seemed unsatisfied and would like some further aid for soldiers, but, as in the case of the titles debate in 1918, the Government threatened to resign if the report of the committee was not concurred in, the reason being that the committee felt the country could not afford any further extension of the gratuity system at the present time, nor would it be able to afford it for many years to come.

Ontario Cabinet in the Making.

Early in the week, E. C. Drury, Premier-designate, was credited with the statement that five out of the seven ministers to be named were already selected. The full Cabinet, it is stated, will be announced on Wednesday, and Mr. Drury will be ready to assume control on Friday, the 14th. Manning W. Doherty, the defeated candidate for Peel, has been given the portfolio of agriculture, while Beniah Bowman, member-elect for Manitoulin, is to preside over the Department of Lands, Forests and Mines. W. F. Nickle, a former member of the Legislature and until recently representative for Kingston in the House of Commons, has been mentioned publicly as a probable choice for Attorney-General. However, at time of writing neither Mr. Drury nor Mr. Nickle have been induced to discuss the matter. While an acknowledged Conservative Mr. Nickle has always exhibited political independence to a marked degree, and his record as a Commoner recommends him for a position in the Legislature should Mr. Drury decide that he needs him for Attorney-General.

Victory Loan Campaign Nearing End.

The returns for the Victory Loan campaign at the end of two weeks showed a grand total for the Dominion of \$318,356,782. The gratifying feature of the campaign is the increasing scale of returns from rural districts demonstrating that the bonds have appealed to the business sense of farmers generally. As early as Saturday night last, approximately twenty units in Ontario, which are purely agricultural, had exceeded their time objective. Ontario was \$21,000,000 ahead of the same period last year, and G. H. Wood, Chairman of the Ontario Executive Committee, commented thus concerning the campaign in the Province:

"At the end of the second week a year ago the total was \$159,000,000, and this was regarded as phenomenal. Saturday night's total, therefore, which is \$21,000,000 in excess of last year, is proof of the patriotism and good business sense of the people of this Province, as well as the efficiency and enterprise of our vast organization."