Figure 93 shows the relationship of the production of flaxseed in Argentina in the preceding winter, plus the current season's production in the United States and Canada, to the price of No. 1 flaxseed at Minneapolis, average September to November, divided by the Bureau of Labor index of building-material prices. The years included are 1910–1925, omitting the year 1917, when a crop failure in Argentina the previous winter, in addition to shipping difficulties caused by the war, brought on an abnormal market situation. The low demand for flaxseed during the years 1918 to 1922 is evidenced by the lower curve, which follows the same general tendency as the main curve, but on a level averaging some 50 cents a bushel lower.

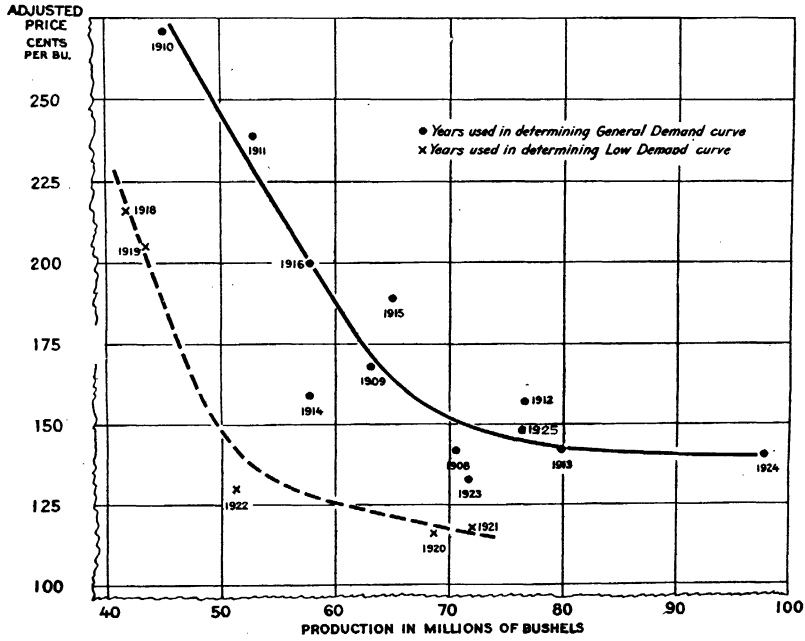

FIG. 93.—Relation of flaxseed production in Argentina, United States, and Canada, to average Minnesota No. 1 flaxseed price, September–November adjusted, 1908–1916 and 1918–1925

The year 1923 was a period of transition between the two levels of demand. The shape of the curve indicates that when prices fall to a certain level there is a tendency for them to become stabilized near the level, owing to the fact that when the price of linseed oil is sufficiently low it displaces other oils, particularly in soap making, with a consequent broadening of demand.

E. M. DAGGIT.

FLAX Rust Control Through Immune Strains Possible

Flax rust is similar to the familiar black stem rust of wheat, in some respects, and yet very different in others. It can not attack wheat, nor can the wheat rust attack flax. Each of these rusts has four distinct stages, the most conspicuous of which are the red and black stages. All four stages of the

flax rust are produced on flax, and on no other plants, except that certain species of wild flax are attacked. The stem rust of wheat, on the other hand, produces its red and black stages on wheat, but requires an entirely different host, the common barberry, on which to develop its two other stages and complete its life history. The organism causing flax rust lives over winter, in the black stage, on infected straw and can go directly back to flax the following summer, when the spores of the black stage germinate. The wheat-stem-rust organism lives over winter in a similar manner, but can not go directly back to wheat from the black stage. It must first go through the barberry. The wheat-stem-rust parasite, therefore, has a weak place in its life history which the flax rust parasite does not have.

As the control of flax rust can not be effected by destroying an alternate host, other methods must be used. The most promising of these is the development of rust-resistant varieties. This method has been used with success in controlling the destructive wilt disease of flax, but, unfortunately, most of the wilt-resistant varieties now in use are susceptible to rust. This fact has not been generally appreciated. It has become the practice among some of the growers of wilt-resistant flax to sow the crop several years in succession on the same land, feeling they are safe in doing so because their flax is resistant to wilt.

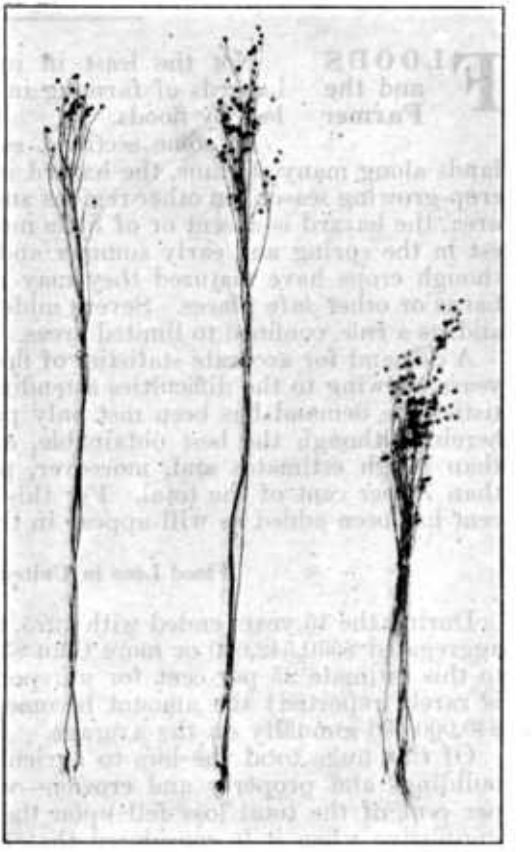

FIG. 94.—Rust-immune flax selection (center) produced by crossing susceptible fiber flax (right) with rust-immune, wilt-resistant seed flax (left)

Susceptible to Other Diseases

The fact that the wilt-resistant flax is susceptible to other diseases either is not recognized or is overlooked. The multiplication of rust is especially favored by such a system of farming, and, when it is followed, damage from rust is likely to be severe. Flax rust not only causes reduced yields of seed, but may also cause the stems of fiber flax to be of very inferior quality, or even useless for fiber purposes.

During the past five years, investigations on the control of flax rust have been made in cooperation with the Minnesota agricultural

experiment station. Varieties of seed flax which are entirely immune from rust have been found. Some of these are also highly resistant to wilt. These have been crossed with susceptible varieties of both seed flax and fiber flax in order to develop improved varieties of both types of flax, combining immunity from rust wilt resistance.

Figure 94 shows the progress in the development of varieties of fiber flax immune from rust. The selection in the middle is immune from rust and was produced by crossing the susceptible fiber flax on the right with the rust-immune, wilt-resistant seed flax shown at the left.

ARTHUR W. HENRY.

FLOODS and the Farmer

Not the least in importance among the many hazards of farming in the United States is that of loss by floods.

In some sections, especially in the rich bottom lands along many streams, the hazard is present a large part of the crop-growing season; in other regions and these form much the larger area, the hazard is absent or of little moment. The menace is greatest in the spring and early summer and again in the fall when, although crops have matured they may not have been gathered into barns or other safe places. Severe midsummer floods are infrequent and, as a rule, confined to limited areas.

A demand for accurate statistics of flood loss has existed for many years. Owing to the difficulties attending the collection of such statistics the demand has been met only partially and those put forth herein, although the best obtainable, are submitted as little more than rough estimates and, moreover, probably do not cover more than 75 per cent of the total. For this reason an additional 25 per cent has been added as will appear in the next paragraph.

Flood Loss in United States

During the 15 years ended with 1925, the reported loss from floods aggregated $530,542,660 or more than $35,000,000 annually. Adding to this estimate 25 per cent for unreported losses (loss to railroads is rarely reported) the amount becomes $707,390,213 or more than $40,000,000 annually on the average.

Of this huge total the loss to agriculture—crops, livestock, farm buildings and property and erosion—was $172,186,987. Nearly 33 per cent of the total loss fell upon the farmer. These figures are impressive when it is considered that loss to the farmer is largely unavoidable, that growing crops can not be removed to places of safety. On the other hand, the loss of matured crops in the fall when left in the fields along river bottoms that are subject to overflow is on a different footing. The obvious remedy is never to leave a matured crop in fields subject to overflow.

The Weather Bureau undertakes to warn dwellers of the lowlands along the larger streams of the coming of dangerous floods, but that service can not be extended, for reasons well understood, to the small streams that are liable to flood from the so-called cloudburst rainfall.