

we will be better able to secure seed well suited to those requirements. A grain of wheat may be divided into two distinct parts; the germ or embryo, which is the more essential though smaller part; and the endosperm, which for clearness we will call the "storehouse" of plant food, because in its nature has stored up food to nourish the little plant during germination and until it has power to take plant food from the soil. Then comes the question: At what stage does a plant commence to take food from the soil? Scientists tell us that the plant is dependent on the food stored up in the seed until it develops a green leaf, which may be called the stomach of the plant. This will take five to ten days or longer, during which time heavy demands on the endosperm or "storehouse" of the seed are made, since as yet it is the only source of food for the young plant. The following conclusions are then very obvious:

First—That we should have plump seed in order that we may be sure that it will contain sufficient food to enable the tiny plant to send up a stem that will reach the surface of the ground and develop a good strong leaf. Second—In case the first leaf be destroyed by frost, drought or disease, it is wise to sow a plump seed so that it may be able to give the delicate plant additional help to start again. Third—The plant having to depend on the seed for its first root, requires, if the root is to develop normally and quickly, a good supply of plant food, or, in other words, a large, plump, uninjured seed. A good root development enables the plant to take more moisture from the soil, and also more food, thus giving a much stronger growth and more power to resist disease, drought, frost, etc. Such a plant will also mature earlier.

#### *Secure Large, Plump Seed.*

These reasons suggest to us the necessity of having a large, plump seed and demand an answer to the question, what is the best method of securing such a seed. In the first place we should select seed that is thoroughly matured from a field that was free from lodged, frosted or diseased grain, because a good seed must have as a parent a plant of perfect type and one that was well matured in order to insure maximum vitality. Then the seed should be thoroughly graded so that only the plumpest of the seed will be used. Before discussing methods to get plump seed we might consider what a seed requires for growth and how best to help provide these requirements. We all know that for germination, heat, air and moisture are necessary. We should be careful, therefore, not to bury the seed too deeply lest we remove it too far from the heat and air. We should also avoid going to the other extreme, sowing too shallow, thus depriving it of moisture. This emphasises the necessity of cultivating the soil so as to get a good seed bed, one that brings the moisture near the surface, where the heat and air is. Enough surface cultivation should be given to permit and encourage the air and heat from the top and the moisture below to reach the seed, thus providing a condition that will hasten germination and prevent at the same time the escape of moisture by evaporation.

Thorough cleaning and grading with the fanning mill will not alone guarantee a good healthy growth, but it will result in a crop that will ripen more evenly and give a better sample for market. To pro-