CLEANING CEREAL GRAINS AND FLAX.

In cleaning cereal grains for seed it is often advisable to remove from one-third to one-half of the total bulk. When grain is thus thoroughly cleaned, most of the weed seeds will be removed with the screenings. Some of the weed seeds are difficult to separate, hut most of them can be removed by a good fanning mill if the proper sieves are at hand and sufficient time and pains are taken to determine the best combination of size and slope of sieves, shake, air blast, and rate at which the grain is passed over the sieves.

In cleaning cereals, especially wheat, attention should be given to the removal of the smut. Unbroken smut balls are impervious to the solutions used to destroy smut spores on the surface of the kernels. Unless all smut balls are removed from a lot of wheat, the grain is liable to be reinfected, thus rendering the labour of treating it of no avail, by the breaking of a few of theso smut balls. One smut ball contains millions of spores, enough to infect quite a large quantity of grain. Bulletin No. 73 on "Smut Diseases of Cultivated Plants" snys:—

"The fanning nill will remove smut balls very completely from the wheat, and owing to the danger pointed out, any wheat containing smut balls should be sent to the mill before treating—if none is available at the farm. Should, however, any smut balls appear on the surface of the solution when grain is being treated, it is necessary to remove them quickly. The smut balls are much lighter than the grain, and will rise to the surface when the latter is vigorously and repeatedly stirred. We have found, however, that the time of treatment given to wheat or other grain is far too short to permit the removal of all smut balls rising to the surface. Even when prepared and working quickly, we have not succeeded in scooping off all smut balls that eamo to the top during treatment, under 10-15 minutes. This long exposure of grain will seriously affect the germination."

Various patent devices for muking difficult separations, such as wheat from oats, wild oats from barley or wheat, vetch from rye, etc., are on the market, but theso cannot be described here; neither can wo go into the various combinations and gangs of sieves recommended by different firms for certain classes of work.

In cleaning cereals a large mesh woven wire sieve is usually employed as a topmost sieve to take out straws and the larger impurities which otherwise would clog the riddle and interfere with the separation it is intended to make.

Wheat.

A zine sieve with perforations about 12, 13 or 14 sixty-fourths of an ineh in diameter is generally used as a riddle. Such impurities as oats will often slide tho length of such a sieve and fall off behind, while wheat tips on end and falls through tho perforations. A number of these riddles with the same or approximately tho same perforation is often arranged one above another. By this means an oat or a wild oat falling through a perforation is started sliding again on the sieve below, and is ultimately run off behind.

Several types and sizes of sieves are used in the lower shoe for cleaning wheat. The 564 or 964 perforated zine, 7 by 7, 8 by 8, and 9 by 9 square mesh woven wire, and the 2 by 9, 2 by 10, and 2 by 11 long mesh woven wire are all in use. In deciding which sieve to use, the kind of wheat, nature of impurities, and object of the cleaning --whether for seed or market--must be considered. The buckwheat screen (fig. IX) is sometimes used for the separation of wild buckwheat from wheat.

Barley.

The cleaning of barley requires similar although not identical sieves to those used for wheat.