

There is said to be a relationship between the per cent. hull in oats and the strength of straw. Very thick or very thin hulled varieties produce weak straw. For an example we have the Tartar King and Joannette varieties respectively. Tartar King variety seems to vary considerably as regards the manner in which the kernels are developed.

At the Svalöf Station, Sweden, some interesting morphological correlations have been discovered in barley. Barley is normally classified under two main types, viz., the hexastichum or six-rowed (including the four-rowed) and the distichum or two-rowed nodding (nutans) and the two-rowed erect (erectum). An examination of grains of barley will show that some have smooth backs while some have indentations on the edges. Again at the base of the ventral portion of the grain we will find the plumule, in some cases, made up of comparatively long stiff hairs, while in other cases it consists of a mass of short curled hairs. These characters have been found to have a great permanency and to correspond to certain physiological characters such as rate of maturing and brewing qualities. Types of barley which ripen evenly and have a thick husk with short woolly hairs at the base of the scales are better brewers than are those not possessing these characters. These peculiarities of form or structure are considered very useful by the breeder in enabling him to isolate superior types much more quickly and with much less work.

In our own corn improvement work we find many interesting correlations, some of which are of considerable value to the breeder. During the past summer the writer had occasion to examine with special care seventy-three special corn plots and succeeded in gathering considerable important data. Among our breeders of Dent corn were found some who, in their desire to develop highly productive types, were selecting large deep kernelled ears having at least 20 rows of kernels. Such ears, however, are universally later since depth of kernel and length of time it requires for an ear of corn to mature are very closely related. We find another correlation between the size of the ear and the height at which it is borne on the stalk, the large late ears being borne higher from the ground than are those which mature earlier. One breeder planted ears averaging 9½—10 inches long by 9 inches in circumference with the result that ears averaging 20-22 rows of kernels were produced and these were borne at about 5' from the ground. Still another correlation is found between the character of the dent of corn and the depth of kernel—the smoother the dent the shallower the kernel and vice versa. This fact is useful to the breeder in