England are that there is a long summer day in Scotland and that owing to the cooler temperature growth is slower; at the same time sowings have to be made later than in England in order to have the soil reasonably warm, either for germinating seedlings or for establishing young plants put out in soil plots. However, in 1959 (which was an exceptionally good year for Scotland) we had a very good harvest of Canada Cross (=Canada Gold x Singleton's C.13) and North Star (Joseph Harris Inc.) and somewhat later Northern Cross (Joseph Harris Inc.). The first two varieties gave very nice crops. The difficulty which we had not expected was that there were quite heavy attacks by frit fly (Oscinella frit). Several growers in Perthshire are growing sweet corn in walled gardens, mostly using the Canada Cross, but their main difficulty seems to be devastation from frit fly. Considering that the plants are being grown in a latitude of 56°N., it is surprising how adaptable maize can be providing the right germplasm is selected: thus, Canada Gold, North Star and Northern Cross all carry Extra Early Bantam in their ancestry, i.e. flint derivatives. Two varieties are thus adaptable 14° North of their seed origin.

-- Gordon Haskell

SERVICE DE LA RECHERCHE AGRONOMIQUE
ET DE L'ENSEIGNEMENT
Rabat, Morocco

1. A hereditary case of abortion of the corn embryo.

In a Moroccan selfed line, MR 077, grains with aborted embryos or affected by partial necrosis are observed every year on all the harvested ears in variable numbers. The healthy grains proceeding from selfing, as well as the few partly necrotic grains that germinate again transmit this character in the same way. The proportion of affected grains (with regard to the total number of grains of the ear) varies from 15 to 90 per cent.

From a morphological point of view this character shows numerous gradations and all the intermediaries exist between grains with completely dessicated embryo and healthy grains. The least affected grains show a faint, more or less greyish withering on the periphery of the embryo. In most cases the endosperm appears normal.

Hybridizations between line MR 077 and other lines have allowed the following observations:

1. - Cross-pollination does not prevent the appearance of this character on the ear of line MR 077. Consequently there exist hybrid grains with aborted embryos. Mixed pollinations (Selfing + Hybridization) have shown that the proportion of affected hybrid grains could be equal or inferior (according to the pollen lines) to the proportion of affected grains from selfing.

2. - Reciprocal crossing does not produce grains with aborted embryos on the ears of the lines that were pollinated by MR 077.

3. - On ears of selfed F_1 plants in all cases grains with aborted embryos are observed, but at much lower rates than on ears of the line 077. These percentages of affected grains are more or less important according to the crossed lines (see table below). Hitherto no difference has been observed, in these percentages, between reciprocal hybrids.

Hybrid	Number of selfed F_1 plants	Average percentages of affected grains
089 x 077	11	0.46
077 x 359	9	2.48
359 x 077	9	2.50
535 x 077	22	4.63
077 x 520	19	3.50
077 x 368	20	0.38
077 x 686	26	4.68

4. - The study of segregating progenies obtained from F_1 plants by selfing or back-crossing has not revealed any Mendelian disjunction. The rates of necrotic grains on the ears vary in a continuous manner from 0 to 70%.

The study of the distribution of the affected grains on selfed ears of line MR 077 shows that these grains are much more numerous on the basal part or the middle of the ear than on the terminal part. The greatest number of healthy grains is to be found towards the apex of the ear.

Investigations are being continued but at present it would seem that this hereditary "disease" of the embryo may be ascribed to a non-Mendelian "factor", free with regard to the chromosomes, and transmittable by the female gamete and by the male gamete.

-- A.Cornu

SYRACUSE UNIVERSITY
Syracuse, New York

1. Atypical variegated phenotype arising from orange variegated pericarp maize.

Preliminary tests of a very light variegated phenotype, which originated as a somatic mutation on an orange medium variegated ear ($\underline{P}^{ovov-2}/\underline{P}^{ww}$), demonstrate that this mutant is not a typical variegated, but rather represents a new phenotype not previously described. This mutant phenotype is due to a $\underline{P}$ allele and, in heterozygotes with $\underline{P}^{ww}$, exhibits a low frequency of colored stripes in an otherwise colorless pericarp and cob, comparable to very light variegated (Brink 1954). It differs from very light variegated, however, in that the stripes are not a homogeneous red but are sectors of orange variegated phenotype typical of $\underline{P}^{ovov-2}$. This difference is not apparent in most ears because the mutant sectors are usually very narrow. In occasional sectors extending over one-half or more of the abgerminal side of the kernel and one sector that included two entire kernels and a part of a third, the orange variegated phenotype is obvious.

The progenies obtained in large families of this mutant allele are summarized in Table 1. The parent ears, from plants heterozygous for the atypical variegated allele and $\underline{P}^{ww}$, had been back-crossed to the recurrent inbred parent, 4Co63, ($\underline{P}^{ww}/\underline{P}^{ww}$), so that one-half of the progeny would be expected to be like the parent plant and one-half, homozygous $\underline{P}^{ww}$ (colorless pericarp and cob). Table 2 summarizes the classes of progenies obtained from orange medium variegated ears ($\underline{P}^{ovov-2}/\underline{P}^{ww}$) backcrossed to 4Co63.