2. Gene frequency in a strain of Reid Yellow Dent.

The preliminary part of this inbreeding study has been reported (Maize Genetics Cooperation News Letter 27). Of the 801 ears selfed in 1948, a total of 238 were segregating for seedling and seed characters. The remaining ears, which were free of defective recessives, were regrown under isolation as a composite in 1949, 1950, 1951 and 1952. A sample of the 1952 crop was planted in 1953, and a total of 1137 ears self pollinated. The ears were examined for seed segregations, and about 50 seeds per ear were germinated in the greenhouse and classified for seedling mutants. The results are summarized in Table 1, together with the 1948 data. It may be apparent, from the table, that new mutations appeared in the population at rather high frequencies. On the other hand, previously found characters did not regain former frequencies in the 1953 sample. Allelism within each group of the 1953 samples will be determined in the future. New alleles also will be outcrossed to the corresponding group of the first sample.