

In 1949 Eyster reported (News Letter 23:4) a "tassel-like" ear mutant that had a framework which was similar to the framework of a tassel. Limited numbers of seeds were formed on the basal portions of the branches. In 1951 he reported (News Letter 25:10) the character to be associated with bright green color and that homozygous strains were available.

The present mutant has so far proved to be completely staminate.

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2. New "Teopod" mutations.

Four new independent sources of Teopod or similar characters have occurred in different locations the past eight years. The first occurrence was in a nursery row of the double cross (T8xCI.21E)(L317xOb7B) growing at the Kentucky Agricultural Experiment Station in 1951. An abnormal plant in T8xCI.21E that tillered and had pod-type ears had served as the seed parent of this progeny the year previous. This source was not grown again until 1957 following the finding of other sources. It differs from the teopod of Lindstrom (Maize Coop. stock) in tillering more profusely and having longer and more slender culms. The two were crossed in 1958 to determine whether they are the same mutation.

In 1954 a farmer found a typical teopod plant growing in a field planted with second-generation seed of the topcross K61xPotchefstroom Pearl in the Union of South Africa. Crosses with Teopod (Maize Coop stock) have shown it to be a repeat mutation. This source has segregated plants with all the variations described for Cg, as has also the Teopod obtained from the Maize Coop. stock. No crosses for associations with other characters have been made.

A mutation related to teopod occurred in a nursery row of inbred K41 at Knoxville in 1955. The main culms of mutant plants are considerably shortened with numerous brace roots developed at the lower nodes, while tillers are usually of normal length. No seed has been produced on the main culms and only occasionally will they terminate in a single spike tassel. Tillers may have a normal tassel, may terminate in an ear, a combination of both, or may be similar to the main culm. Ears produced on normal tillers have been normal and only occasionally produce mutant plants. Axillary ears produced on tillers that terminate in an ear are generally podded at the base. Seed from either the podded axillary ear or the terminal ear will generally produce half normal plants and half mutant plants. No apparently homozygous plants have been obtained.

A typical teopod plant occurred in hybrid Funk G-711 growing in a yield trial on the Jackson, Tennessee Experiment Station in 1956. Only 11 open-pollinated seed were obtained from the plant, none of which produced plants the following year.

Only original Tp (Jour. Hered. 16: 135-140. 1925), Tp₂ (Newsletter 22: 41) and the Tp Cg complex have previously been described. Apparently teopod or teopod-like mutations occur more often than indicated by reports.

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An aleurone color pattern factor was found in segregating populations about three years ago. Testcross results suggest that a new R allele is involved. This allele has been tentatively designated as R^P. The extent and distribution of color is quite variable depending upon the genetic background. In some stocks the allele appears to behave primarily as a dilution factor. In others it simulates R^{NJ} except basal coloration also is usually involved. In many stocks classification is difficult.

In the transfer of cytoplasmic sterility to one of the Helminthosporium resistant strains of WF9, ratios of 1 fertile to 3 steriles have been obtained. Tests are underway to determine the identity of the second factor involved in fertility restoration.

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1. Resistance to the field population of stemborers in West Africa.

A number of inbred lines were introduced into West Africa from Minnesota to investigate if their resistance to the European corn borer did correlate with a possible resistance to West African stemborers. The original lines are highly susceptible to major leaf diseases in the West African environment. Therefore, crosses and backcrosses of these to the Minnesota parent were established with an adapted maize variety. These were compared, in field trials, with a local variety.

The analysis of field trials on basis of the number of bored plants indicates a possibility that recessive genes for resistance are present in the lines Minnesota A42.645 and Minnesota A404.

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