I. INTRODUCTION
INTRODUCTION.

Genetics of rice has received considerable attention in Japan, India and the United States of America. Negao (1951) and Negao (1959) reviewed the investigations carried out on the genetics of rice in Japan, and Ramiah (1953) and Ghose et al. (1960) on the work done on it in India. Jodan (1948, 1955 and 1956) and Kageo and Takahashi (1959) attempted to bring together the available linkage data in it. Recently Kadam and D'Cruz (1960) and Bicharia et al. (1960) have reported new linkages in the same crop.

The genetical studies conducted so far, have resulted in the recognition of over 300 genes affecting about 50 plant characters but only 49 genes have been assigned to eight different linkage groups. In 1956 when Jodan suggested these linkage groups, 156 cases of linkage involving a number of genes had been established. Quite a number of these linkages were repetitions. Kageo and Takahashi (1959) tentatively reported 12 linkage groups but some of them have been represented by only one gene so that further confirmatory genetical studies seemed necessary.

In the genetic analysis of rice it is commonly observed that a particular character is determined by one pair of factors in one set of varieties while in another set the same character is governed by two or more pairs of genes. Such a complicated inheritance appears to be peculiar to rice.
This goes to show that the genetic analysis is far from complete inspite of the fact that genetic research has been intensified in recent years. The main reason for incomplete analysis of rice appears to be lack of varieties with known genetic constitution. It is also likely that some of the varieties have not been subjected to intensive genic analysis as is the case with the varieties of the Kalnad region of the Mysore State. Not a single report regarding the inheritance of rice varieties of this tract has so far been published, although the varieties grown in this region present a great array of characters and are distinct from those of other rice growing tracts. There may be such unexplored regions in other parts of the world which would provide valuable interesting material for genetic research. Efforts to exploit such a genetic material would help in solving the complex problems involved in rice genetics.

Taking advantage of this situation the present investigations were undertaken. The varieties Yelikirisal-4 and Kagisali-44-1 have a fairly good spread in the Kalnad tract and they show striking differences in a number of morphological and physiological characters. These varieties were therefore, taken up for genetic studies.

In these studies the inheritance of 15 qualitative and 8 quantitative characters was taken up and their inter-relationship has been determined.