

**Conclusion.** The experiment is interesting. So far as it goes the small gain made either in the live-weight or wool yield, does not warrant the inclusion of sulphur in the ration for Bellary Sheep.

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## THE INHERITANCE OF RED PERICARP COLOUR IN RICE (*ORYZA SATIVA*)

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The red colour of rice is confined entirely to the pericarp and this is lost partially or completely when rice is subjected to various degrees of polishing, after husking. Independent segregation of red and white rice has been observed in cross progenies by several workers. Parnell (1917), Hector (1913), McKerral (1913), Thompstone (1915) and Van der Stock (1912) have all recorded a simple 3 : 1 ratio of red to white rice. Lien Fang Chao (1928) has however recorded as 15 : 1 ratio of red to white in addition to 3 : 1.

During the season of 1931-32 a cross was made between T. 322 having long panicle and white rice and T. 206 with short panicle and red rice, with the object of studying the correlation between panicle length and yield, and incidentally the rice colour was studied in the progenies. The  $F_1$  generation was pure for red rice. The  $F_2$  generation showed segregation for rice colour and the following results were obtained.

	<i>Red rice.</i>	<i>White rice.</i>	
$F_2$ ratio	545	41	
Expected on a 15 : 1 ratio	549.3	36.7	$\frac{\text{Dev.}}{\text{S. E.}} = 0.7$

It is clear from the above that there are two factors involved for rice colour.

The  $F_2$  population consisting of 516 plants was carried forward and grown as  $F_3$  to confirm the  $F_2$  behaviour. The examination of rice colour in the  $F_3$  families was restricted to 40 plants taken at random in each family. From the counts so made, the families were grouped into different categories, and the different groups are given below.

Pure for red rice		209 families	
Pure for white rice		30 "	
Segregating families (15 : 1 and 3 : 1)		277 "	
Of the two types of segregation 174 families gave			
	<i>Red rice.</i>	<i>White rice.</i>	
	5923	398	
Expected on a 15 : 1 ratio	5926	395	$\frac{\text{Dev.}}{\text{S. E.}} = 0.16.$
and 103 families gave	2969	956	
Expected on a 3 : 1 ratio	2974	981	$\frac{\text{Dev.}}{\text{S. E.}} = 0.93.$

**Discussion.** If  $R_1$  and  $R_2$  are the duplicate factors controlling rice colour, T. 206 will be  $R_1R_1R_2R_2$  and T. 322  $r_1r_1r_2r_2$ ; the  $F_2$  should give 15:1 ratio of red to white. Of the 15 reds in  $F_2$ , 7 will be pure red in  $F_3$  due to the presence of both or either  $R_1$  and  $R_2$ , 4 will give 15:1 ratio of red to white due to both  $R_1R_2$  being heterozygous in them, and 4 will give 3:1 ratio of red to white due to only one of the factors  $R_1$  or  $R_2$  being heterozygous. The  $F_3$  behaviour of 516 families based on the above assumption comes to:—

	Number of families actually obtained.	Number of families expected.
Pure for red rice	209	226
Pure for white rice	30	32
Segregating families on 15:1 and 3:1 ratios	277	258

( $X^2 = 2.8$  and P lies between .30 and .20)

Thus the  $F_3$  behaviour confirms the  $F_2$  results.

According to the chromosome theory the duplicate factors for red rice must be present in separate chromosomes and the occurrence of duplicate factors for the production of a particular character, may with certain reservations be taken as an indication of the polyploid nature of rice.

#### References.

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## ECONOMIC SURVEY OF A SOUTH INDIAN VILLAGE—PERUMANALLUR

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**Preliminary.** Situated eight miles north of Tirupur on the crossing of the metalled roads from Tirupur to Kunathoor and Avanasi to Erode is Perumanallur, a Ryotwari village in the Palladam Taluk of the Coimbatore District. It consists of the hamlets of Pidarampalayam, Valasupalayam, Athikadu, Perumanallur and Purasupalayam. The nearest Railway Station is Kulipalayam,  $4\frac{1}{2}$  miles from the village reached by an *iteri*. The village is situated in the plains and there are no jungles or hills in the vicinity, but a small stream which is occasionally flooded for an hour or two in the rainy season runs close by. There are four small ponds (known as *Kuttais*) in the whole village each about 3 feet deep which is full only during the rainy season and the water seldom used for irrigation. The village appears to be a very ancient one.