
**TWO NEW GENES FOR COROLLA
COLOUR IN *CICER ARIETINUM* L.**

AN extensive survey of morphological variability in *Cicer arietinum* L., has shown the occurrence of plants with various coloured petals. These are usually found to be white,

greenish-white, blue and pink.^{1,2} Variations among the pink types have also been noted.² The genic analysis of petal colours in gram, however, has so far revealed only the presence of four genes, W, B, P and C.^{3,4,5} According to Ayyar and Balsubramaniam,⁵ the genes B and C are complementary and produce blue colour in petals. In the presence of C, the gene P converts blue to pink, thus it is considered as a supplementary gene. White petals result in the absence of any one of the three genes either alone or in combination except when B and C are together. The gene W suppresses greenness changing greenish-white standard to white. Its relation to other genes is not known.³

While working for the genetic improvement of gram in Bombay the writers have found in local material pink and white flowered plants. So far neither local nor hybridized material in gram with us has shown the presence of blue-flowered plants. We have, however, found two distinctly new petal colour types which do not seem to have been reported so far. One of them has light salmon coloured petals and is easily distinguishable from the normal pink type. This type originates from a solitary plant discovered in a field of local gram at the Cereal Breeding Station, Niphad, in the year 1932. The other type has very light purplish petals but dark purple veins. This was discovered in a local sample obtained from Chikodi, Belgaum District, and grown at Niphad in the season of 1936.

Crosses of the salmon type with a normal pink type, showed the dominance of the latter in the F_1 and a monogenic segregation in the F_2 (57 pink : 19 salmon). When crossed with a white-grained and white-flowered type the F_1 showed pink flowers, and in F_2 a ratio of 9 pink : 3 salmon : 4 white flowers (actual numbers 45:13:19) was obtained. The F_3 confirmed the F_2 behaviour. We may, therefore, consider the salmon type to be due to a distinct gene. We propose to designate this gene as Sa.

Only one cross involving the purple-veined

type is available. This consists of a white-flowered and yellow grained type. The F_1 was purple-veined and in F_2 a monogenic ratio of the two colours (actual numbers 34 and 15) was obtained. Its relation with other types is under investigation but it may be concluded that the purple-veined flowers are caused by a distinct gene, which we have designated as Pu.

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¹ Howard, A. G., Howard, L. C., and Khan, A. R., *Mem. Dept. Agri. India Bot. Ser.*, 1915, 7.

² Shaw, F. J. F., and Khan, A. R., *ibid.*, 1931, 19.

³ Khan, A. R., and Akhtar, A. R., *Agric. and Live-Stock in India*, 1934, 4.

⁴ Singh, H., and Ekbote, R. B., *Ind. Journ. Agric. Sc.*, 1936, 6.

⁵ Ayyar, V. R., and Balsubramaniam, R., *Proc. Indian Academy of Sciences, Sec. B*, 1936, 4.