

40938 to 40969—Con. (Quoted notes by A. and G. L. C. Howard.)

common dwarf wheat of the Punjab, and was found in the Rodi of Shahpur, Rangrih or Ghiali of Kangra, Makini of Multan, Daudi of Muzaffargarh, Daudan of Multan, Makkawali of Dera Ghazi Khan, and in Daudi of Multan. Mr. A. C. Dobbs, of Lyallpur, found that this wheat was grown at Rawalpindi and that it was considered in that district as the best for bread making."

40945. "Type No. 8. Var. *barbarossa* Al. Ears bearded; awns red; chaff felted with short, rather sparse hairs, yellowish red; grain dark red, consistency variable, hard, soft, and mottled grains found in about equal proportions; ear length 78 mm.; D.= 24; straw good; ears erect and rather slender. This type was found in the Lal Kasar-wali of Lyallpur in very small quantity."

40946. Type No. 8 A.

40947. Type No. 8 B.

40948. "Type No. 9. Var. *fuliginosum* Al. Ears bearded; awns stiff, stout, rather short, black but lose their colour very easily; glumes sharply keeled to the base; chaff densely felted with long hairs, the felting resembling very closely that found on the macaronis, chaff greyish white or yellowish white, pink at the edges, generally with black spots of *Cladosporium*; grain very dark red, on the whole hard with a few mottled grains, the shape resembling that of a common wheat; ear quadratic in section, somewhat club shaped at the top, somewhat compact; ear length variable, about 70 mm. on the average; D.= 25; straw stiff, stout, hollow throughout; ears very erect. This type was found in the Lal of Batala, Ratti of Montgomery and in the Lal Kale Kasar-wali of Lyallpur; it was also found in small quantity in the Lal Desi of Jhelum, Lal of Delhi, Pamman of Ferozepore, Dagar of Multan, Kunjhari of Muzaffargarh. This wheat is one of the most interesting types found in the Punjab, for although it must be classed as a common wheat, it appears to possess many of the characters of the macaroni wheats. The felting resembles very closely that of the macaroni wheats and is quite different to that found on the other felted common wheats or on the felted dwarf wheat. The shape of the glumes with the keeling continued sharply to the base resembles that of macaroni wheats. The hollow straw and the shape of the grain are, however, those of a common wheat. The shape of the ear with its compact sometimes club-shaped top, the stoutness of the straw, and the stiff awns remind one of the dwarf wheats, and it seems quite possible that this wheat, which is unique in India, may have arisen from a natural cross between a dwarf and macaroni wheat. This supposition is supported by the fact that we have found a dwarf wheat to be the female parent in some of the natural crosses found by us and described in the last part of this paper. At flowering time this wheat (type 9) appears to shed a vast amount of pollen and probably gives rise in this way to further natural crosses. It is interesting to note that this wheat is marked by Humphries as being the best of the 25 Punjab types submitted to him."