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THE TEN-CHROMOSOME LOTUS

While checking the identification of Lotus introductions late in 1976 we obtained clear mitotic counts of ten chromosomes from an attractive accession of L. corniculatus received from Coimbra, Portugal. This was a slender prostrate species up to 10 cm tall with red stems and greyish hairy leaves. The large flowers (up to 15 mm) were 2-4 to the head, rich golden yellow fading to orange and strongly red-striped in the bud. The chromosome number was confirmed in a second lot of seed from the same source, and meiosis was found to be quite regular, with five bivalents at diakinesis and metaphase I.

This interesting little plant did not fit any species known to us, but somewhat resembled the descriptions of L. glareosus and L. delortii in Flora Europaea, for neither of which could we find a published chromosome count. Nor were we successful in obtaining seed or specimens of these species for comparison, but recently Dr. Chrtkova Zertova has confirmed that the specimen we sent appears to match L. glareosus.

In the meantime, Angulo and Real (1977) have published a note on a ten-chromosome Lotus collected in the Sierra del Guadarrama, Madrid, which they identify as L. castellanus Boiss. & Reut. No description of the plant was given, but the karyotype is identical with that of our Portuguese accession. It seems unlikely that two different 10-chromosome species have simultaneously been discovered, yet the Coimbra plant does not fit well into L. castellanus. Even in senescence, when the stems were weak and the leaves and flowers much smaller (as in L. castellanus) the flowers still lacked the hooked keel characteristic of that species (Heyn 1970). Heyn noted that L. palustris was capable of confusing phenotypic variation in different seasons, and this may be part of the problem in identifying the present species, which appears to be annual or biennial in our climate.

It would be rather surprising if plants with such a substantial and stable karyotype reconstruction were morphologically the same as a species normally having 12 chromosomes, yet Larsen & Zertova (1969) confirm a somatic count of 12 for L. castellanus and Dr. Chrtkova Zertova (pers. comm.) quotes the same number for L. glareosus. The identity of the 10-chromosome Lotus is at present a \$64,000 question!

Angulo, M. D., Real, M. C. 1976. A new basic chromosome number in the genus Lotus. Can. J. Bot. 55: 1848-50.

Heyn, C. C. 1970. Studies in Lotus III. The L. angustissimus group. Israel J. Bot. 19: 271-292.

Larsen, K. and Zertova, A. 1969. A taxonomic study on Lotus castellanus Boiss. et Reuter. Feddes Rep. 80: 305-314.