

Genetic studies on Cassia Occidentalis Linn.

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Abstract:

Cassia occidentalis is a compound-leaved, monocapellary, woody shrub of waste places. Its other accession, Cassia sp. is a simple-leaved, multicapellary, woody shrub also inhabiting waste places but with a more restricted distribution. It is an unusual Cassia plant since multi-capellary condition and the simple leaf form are unusual and apparently unrecorded for the genus. Genetic studies showed both plants to be closely related and to produce a fertile hybrid. The mode of inheritance of leaf form and carpel number was observed to be monogenic, the simple-leaved multicapellary condition being recessive to the compound-leaved, monocapellary condition.

Anatomical studies on transverse sections through the petiole of the different leaf types encountered in the two accessions, revealed an evolutionary progression which was interpreted as a progression from the simple leaf form to the compound leaf form. The possibility of Cassia sp. originating from C. occidentalis as a result of simple mutational events was suggested. A simple event of hybridization between the two Cassia accessions can create considerable confusion for taxonomic work. For this reason, giving so *much weight* to the *simple-leaf/compound-leaf* and *one carpe l/ many-carpel* dichotomies in suprageneric plant classification deserves considerable caution.

Keywords: Cassia Occidentalis Linn/ hybridization/ Genetic studies/ leaf

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