

Genetic Studies on Cassia Occidentalis Linn.

Oloruntoba, Oluyemisi Grace

M.Sc Botany

Department of Botany
Obafemi Awolowo University, Ile Ife, Nigeria

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Abstract:

Cassia occidentalis is a compound-leaved, mono-capellary, woody shrub of waste places. Its other accession, *Cassia* sp. is a simple-leaved, multi-capellary, 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 multi-capellary condition being recessive to the compound-leaved, mono-capellary 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*/ genetic studies/ anatomical studies

Supervisor: O. Olorode