CHEMICAL INVESTIGATION AND ISOLATION OF THE

CONSTITUENTS OF KENYAN

CASSIA FLORIBUNDA

BY

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A thesis submitted in partial fulfillment for the

degree of Master of Science of the University of Nairobi.

JULY 1992.
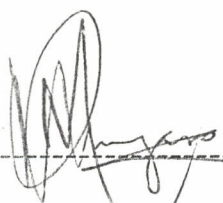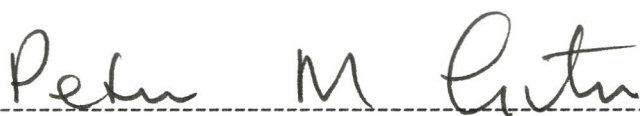
This thesis is my original work and has not been presented for a degree in any university.

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SUMMARY

Cassia genus is an important member of the sub-family Caesalpiniodeae (family : Leguminosae) because of the role it plays in ethno and modern medicine. In East Africa, there are 21 known Cassia spp. Among these is Cassia floribunda which can be found in different parts of Kenya.

The roots, stem, pods and seeds were screened for secondary metabolites; anthraquinones, flavonoids, triterpenes and alkaloids. The most abundant secondary metabolites were sequentially extracted with solvents; n-hexane, ethyl acetate, and methanol. This was followed by chromatographic separation and finally spectroscopic (^{1}H and ^{13}C NMR, UV, IR and MS) analysis was performed to establish the structures of the isolated compounds.

All the morphological parts showed the presence of the anthraquinones, physcion (8), chrysophanol (7), and the triterpene β-sitosterol (26). The roots however had higher concentration of physcion than the other parts. The seeds beside giving substantial amount of oils and fatty acids also afforded an anthraquinone, 3-hydroxymethyl-1,6,8-trihydroxy anthraquinone (27), commonly known as citreon-rosein, and the chalcone 4,2',4'-trihydroxy chalcone (isoliquiritigenin) (10). The seeds also showed the presence of other flavonoids although these were not characterized.

Z

<u>8</u>

<u>10</u>

<u>26</u>

<u>27</u>