CONCLUSIONS
A. Biflavonols from Guttifereae:

(i) The phenolic extractives of the leaves, heartwood and bark of Garcinia livingstonii have yielded four biflavonols, one of them being reported for the first time.

(ii) The structure of each of the component has been elucidated by chromatographic, UV, IR, mass and NMR studies including double irradiation technique and solvent dependent methoxyl resonances.

(iii) The following structure have been assigned:

(a) 4',4'',5,5'',7,7''-Hexahydroxy-3',8''-biflavone (amentoflavone, WG-1).

(b) 4''-O-Methyl amentoflavone (podocarpusflavone A, WG-2).

(c) 3'',4',4'',5,5'',7,7''-Heptahydroxy-3(8'-) flavonyl flavanone (BGH-II).

(d) 4',4'',5,5'',7,7''-Hexahydroxy-3(8''-) flavonyl flavanone (BGH-III; new biflavonyl)

The heartwood and bark are found to contain the same constituents.

(iv) The presence of amentoflavone and podocarpusflavone A,
flavone-flavone type dimers in leaf extracts of Garcinia species is being reported for the first time.

(v) An unusual observation of the transformation of (c) and (d) to the corresponding chalcones was made during acetylation using acetic anhydride-pyridine.

B. Synthesis of a new series of biflavones:

(i) Two members belonging to a new series of biflavones have been synthesized. NMR studies including double irradiation technique and solvent induced shifts of methoxy resonances have been used for structure elucidation. An anamoly in the method of methoxy proton shifts is pointed out.

(ii) The assigned structures are:

(a) 3",4',4",5,5",7,7"-Heptahydroxy-3,8"-biflavone (WGH-III).

(b) 4',4",5,5",7,7"-Hexahydroxy-3,8"-biflavone (WGH-III).

C. Thin-layer chromatography of biflavonyls on silica gel. Structure-chromatographic behaviour correlations:

(i) The chromatographic behaviour of biflavonyls including partially and fully methylated ethers, has been examined in five solvents.
(ii) Benzene:pyridine:formic acid (36:9:5) has been found to be the most satisfactory developing system both for identification and separation of biflavonols and their methyl ethers.

(iii) Benzene:pyridine:ethyl formate:dioxan (5:1:2:2) has been claimed best for fully methylated biflavonols.

(iv) Relative $R_F$ values coupled with variations in the shades developed by spraying with diazotized sulphanilic acid have been used for ascertaining approximately, the extent of the methylation in partial methyl ethers of the same series.

(v) The characteristic shades of fully methylated biflavonols in UV light have been found to provide a means for their quick and satisfactory identification.

(vi) An attempt has been made to correlate the structure of biflavonols and their methyl ethers with their chromatographic behaviour. Isomeric pairs of fully methylated biflavonols involving different interflavonyl linkages, such as hinokiflavone ($4'-0-8''$, $4'-0-6''$) amentoflavone ($3'-8''$, $3'-6''$), cupressuflavone ($8-8''$) and agathisflavone ($6-8''$) have easily been distinguished and oriented.