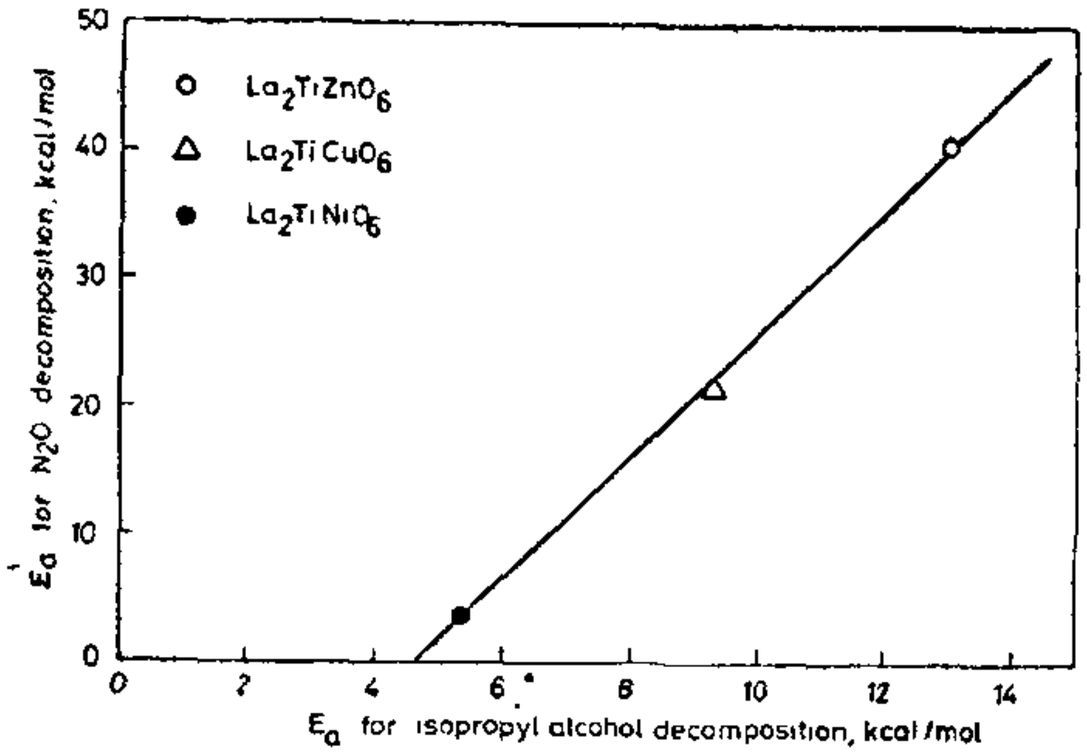

FIG. 1. Correlation between E_a for N_2O decomposition and isopropyl-alcohol decomposition.

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CONFIRMATION OF THE STRUCTURE OF SEMECARPUS BIFLAVANONE B

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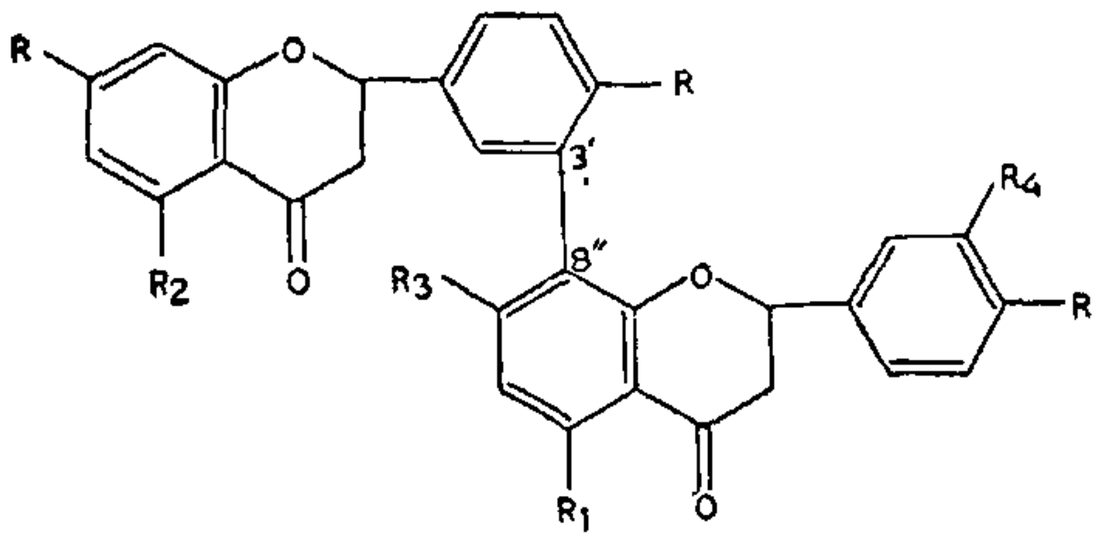
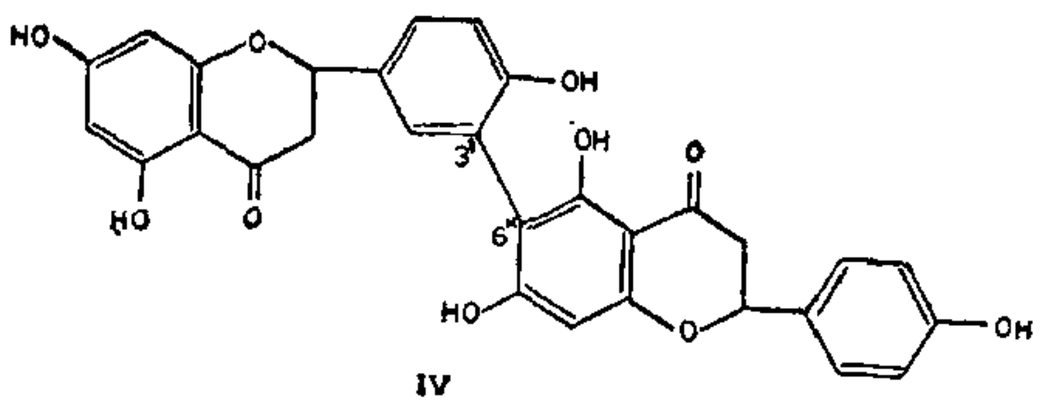
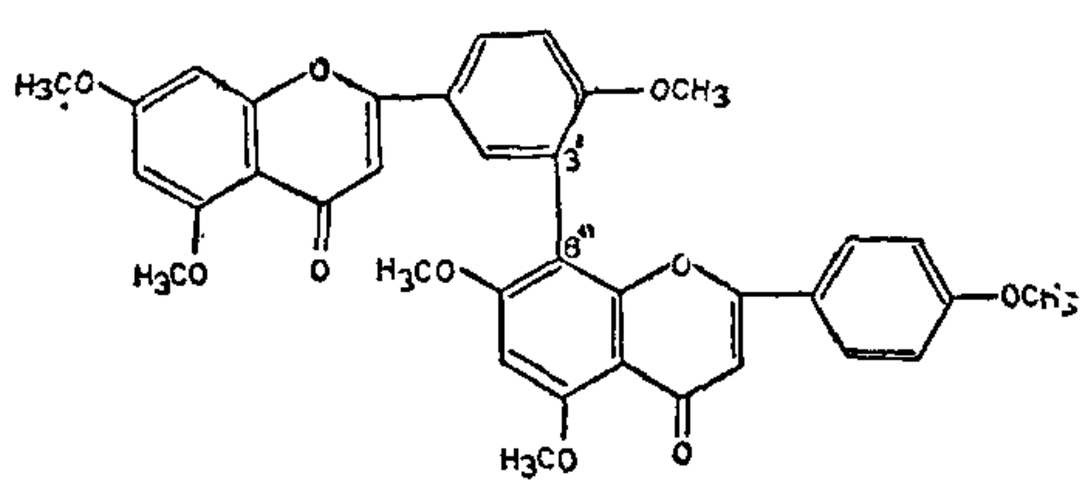
THREE new semecarpus biflavanones, A (I), B (II), and C (III) were reported from the ether soluble fraction of the methanolic extract of the defatted nut shells of *Semecarpus anacardium* Linn. by Row *et al.*[1]. Biflavanone B [tetrahydroamentoflavone, (II)] and tetrahydrorobustaflavone (IV) were isolated[2] from the nut shells of the same plant. The structures of the three biflavanones (I), (II) and (III) were assigned based mainly on spectral data. Hence it is proposed to provide further chemical evidence by converting them into the corresponding stabler biflavones[3]. The present study deals with the confirmation of the structure of semecarpus biflavanone B (II).



I . $R=R_1=R_2=R_4=OH$, $R_3=H$
II . $R=R_1=R_2=R_3=OH$, $R_4=H$
III . $R=R_3=OH$, $R_1=R_2=R_4=H$



IV



V

Adopting the procedure of Row *et al.*[1], the yellow biflavonoid mixture (400 mg) was reisolated and dehydrogenated with iodine (0·80 g) and potassium acetate (3·50 g) in acetic acid[3,4] (20 ml) at reflux temperature for 3 hours to give the biflavone mixture which also showed a single spot like the parent compound. The dehydrogenated product (250 mg) was methylated with dimethyl sulphate (1 ml), potassium carbonate (3·0 g) in dry acetone (50 ml) under reflux for several hours till the product gave a negative ferric reaction. The reaction product showed a number of trailing spots on TLC. It was chromatographed over a small column of silica gel (finer than 200 mesh) and eluted with benzene : chloroform mixture and chloroform. The chloroform eluate afforded a single component (compound A) which was crystallised from chloroform : methanol mixture as needles, $C_{30}H_{20}O_{10}$

(Found : C, 69·39, H, 4·94; OCH_3, 29·79; $C_{36}H_{30}O_{10}$ requires C, 69·45; H, 4·86; and OCH_3, 29·90%), M^+ 622, m.p. 174–75°, $(\alpha)_D$ − 73·2°, yield : 50 mg. ν (nujol) : 2830 (OCH_3), 1640 (flavone carbonyl) and 1600 and 1590 (aromatic) cm^{-1}.

The benzene : chloroform mixture (1 : 1) eluate gave a complex mixture (more than six spots) which could not be separated into its individual components.

Compound A exhibited an orange-red colour with Mg HCl and a negative test with sodium borohydride and HCl indicating its flavone character. It was found to be identical with that of (−) amentoflavone hexamethyl ether[5,6] (V) (m.m.p., I.R., ^{1}HMNR and Mass). This identification unambiguously proves the structure of semecarpus biflavanone B (II) and the nature of C–C linkage as assigned by Row *et al.*[1].

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A NEW OCCURRENCE OF PYRRHOTITE AND PENTLANDITE IN THE MINERAL CEMENT OF TERTIARY GRAVELS NEAR PATHERGHARA, SINGHBHUM, BIHAR

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EXAMINATION of tertiary gravels (22°33′: 86°25′) under reflected light reveals the occurrence of pyrrhotite (FeNi)S associated with a small amount of pentlandite (NiS).

Pyrrhotite occurs in the form of rims around the grain boundaries of quartz and feldspar. Rims are

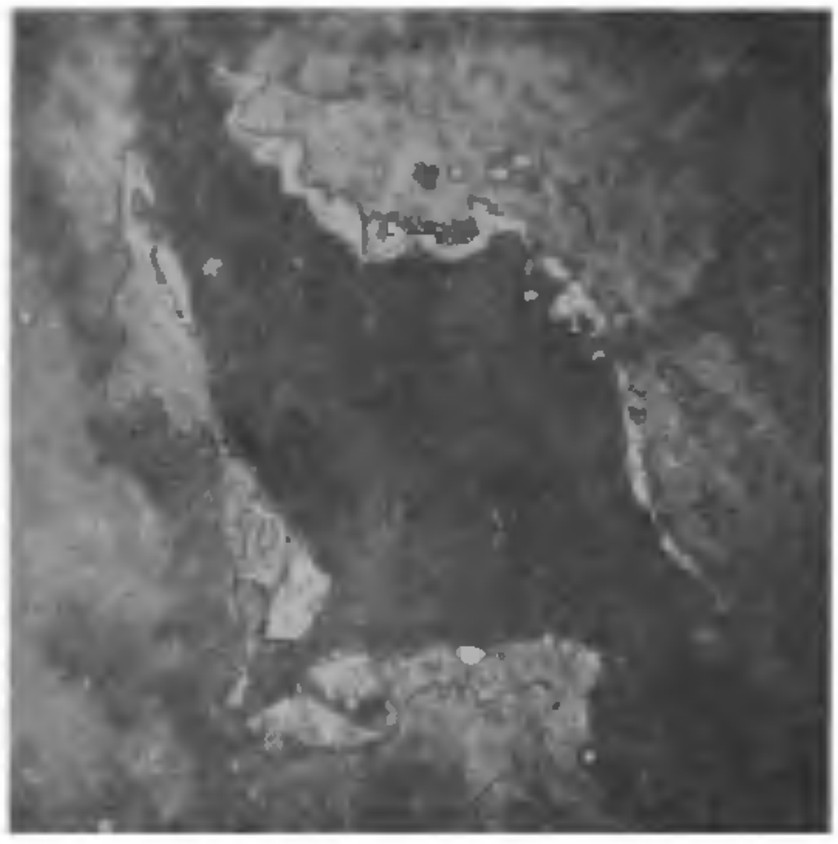

FIG. 1. Showing the enrichment of pentlandite (pt) along the boundaries of pyrrhotite (po) and quartz (Qtz), × 75.

complete and broken too. Thickness of these rims is erratic and varies from 0·1 to 0·06 mm in diameter. Individually the grains are of 0·01 mm diameter.

Pentlandite is seen closely associated with pyrrhotite as flames and dots. Rounded to oval shaped grains of pentlandite have been observed irregularly dusted through 0001 metal planes of pyrrhotite which are present for the most part in considerable excess. It is interesting to note that a large number of pentlandite grains have been enriched along quartz and pyrrhotite boundaries (Fig 1). This texture might have resulted from the diffusion of nickel rich pyrrhotite at low temperature[1].

According to Dunn and Dey[2] the gravel beds were believed to have been derived from the local Archean rocks. In the light of field, petrographical and trace element examinations of certain neighbouring rocks of the area, the author suggests that epidiorite which contains about 45–425 ppm nickel associated with Dhanjori quartzite might have been a specific source of gravels as of today.

Detailed chemical and x-ray analyses are in progress.

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