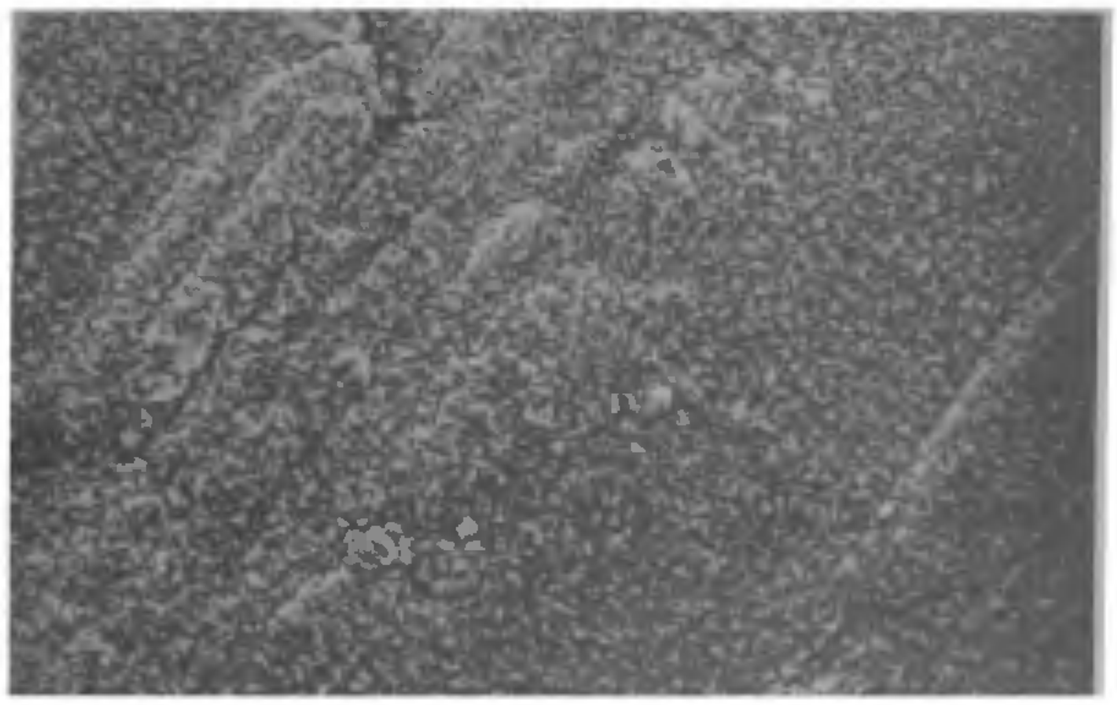

Figure 2. Scanning electron micrograph revealing a bright uniform polycrystalline deposit on Cu_{60}-Zr_{40} metallic glass with 10^{-4} mol dm^{-3} of MTEG at 10 mA cm^{-2}.

Furthermore, the changes in the electrokinetic parameters in the presence of MTEG and TUL is accompanied by a remarkable growth habit modification from cluster type of growth (figure 1) to a bright uniform polycrystalline deposit (figure 2) at the current densities studied.

The transport mechanism in the presence of MTEG and TUL is under detailed investigation.

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A NEW TRITERPENIC ESTER, FROM THE STEM BARK OF *SAPIUM EUGNIFOLIUM*

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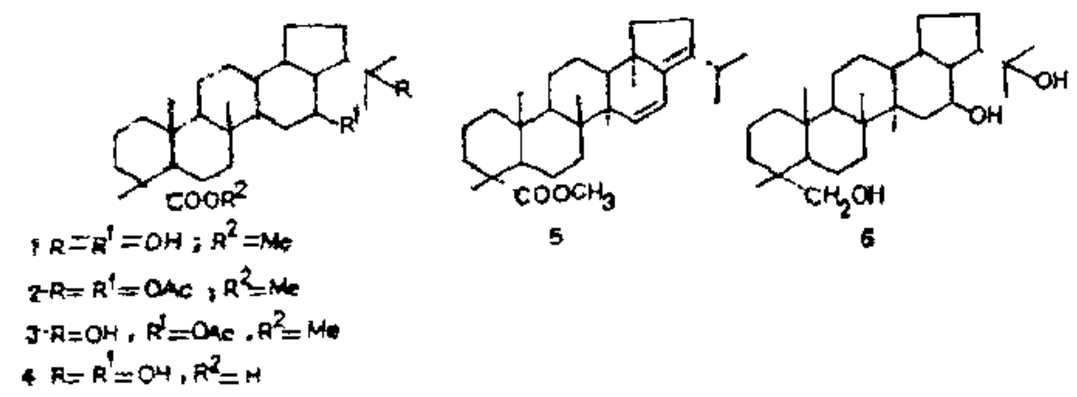
PREVIOUS study on the *Sapium eugnifolium* has disclosed the presence of taraxerone, moretenone, taraxerol and β-sitosterol[1,2]. Our further investigation led to the isolation and structure elucidation of a new triterpenic ester (1) as well as the isolation of known compounds moretenone and β-sitosterol from the stem bark of *Sapium eugnifolium*. The structure of the new compound was established as 16,22-dihydroxy-methyl hopanoate on the basis of chemical and spectral data which is described in this note.

Compound (1) on repeated crystallization from C_6H_6-$CHCl_3$ furnished a colourless crystalline substance, m.p. 298–99°, $C_{31}H_{52}O_4$(M^+488). It responded positively to the reactions characteristic for triterpenoid but negative property to TNM. The principal peaks in the IR spectrum of (1) indicated the presence of hydroxyl (3400 cm^{-1}) and ester carbonyl (1725 cm^{-1}). The ^{1}H NMR spectrum of (1) displayed signals for the presence of seven tertiary methyl (δ0.68–1.60), an ester group (δ3.85), a broad signals for two hydroxyls (δ3.60) and a multiplet (δ4.10) due to proton attached to a carbon bearing a hydroxyl group, suggesting that one of eight methyls of a pentacyclic triterpene skeleton in (1) might be in an ester form. Acetylation (Ac_2O–C_5H_5N) of (1) at reflux temperature yielded (2), m.p. 120–22°, the IR of which showed the ester carbonyl (1725 cm^{-1}) and acetate grouping (1735 cm^{-1}). The ^{1}H NMR of (2) exhibited the presence of two acetates (δ2.00 and 2.10), and a multiplet shifted from δ4.10 (as observed in 1) to δ5.10 (in 2) in the downfield region. The above results ascribed the presence of a secondary hydroxyl and a tertiary hydroxyl in (1). The tertiary nature of one of the hydroxyl group was also confirmed by the following observations. Compound (1) on acetylation (Ac_2O–C_5H_5N) at room temperature afforded (3), m.p. 114–16°, the IR of which still showed the presence of hydroxyl (3500 cm^{-1}), ester (1725 cm^{-1}) and acetate (1740 cm^{-1}). The ^{1}H NMR spectrum of (3) indicated the presence of seven methyl (δ0.80–1.60), an ester group (δ3.85), one acetate (δ2.00) and one proton multiplet centred at δ5.10 ascribed to α-H in secondary acetate group.

These experiments were suggestive for the synthetic leucotylic acid ester (lit. m.p. 298–301°)[3]. The structure of (1) was confirmed by the following conversions to compounds of known structures. The demethylation of the compound (1) with HI yielded leucotylic acid (4), m.p. 258–60° (lit. m.p. 260°)[3]. The compound (1) on treatment with EtOH–HCl afforded methyl leucotzlidionate, (5) identified by

its m.p. 200–202° (lit. m.p. 203°)[3]. The LAH reduction of (1) gave a known triol (6), m.p. 245–47°, (lit. m.p. 247°)[3].

These findings along with the consideration of the probable common biogenetic origin enable the compound (1) to be assigned a structure (1) which was also in full agreement with its mass spectral data [MS at m/z: 488 (M^+, 65%), 473 (25%), 470 (15%), 455 (20%), 429 (20%), 396 (60%), 297 (90%), 277 (85%), 253 (100%)].



Isolation and purification of the compounds: Air-dried and powdered stem bark of *S. eugnifolium* (3 kg), procured from the United Chemicals and Allied Products, Calcutta (India), was exhaustively extracted with EtOH under reflux for 25 days. The ethanol from the percolates (30 litres) was concentrated (500 ml) under reduced pressure and kept at room temperature for a few days. It deposited a white mass which was then washed successively with petroleum ether and C_6H_6. The petroleum ether fraction on TLC examinations showed the presence of a mixture of two compounds which was passed through a column of neutral alumina, successively eluted with hexane:petroleum ether (5:5) and petroleum ether which yielded *β*-sitosterol (yield 400 mg), m.p. 134–36° (m.m.p. and Co-TLC)[4] and moretenone (yield 600 mg), m.p. 202–4° (m.m.p. and Co TLC)[1] respectively. The C_6H_6 soluble portion was concentrated and passed through a column of neutral alumina, eluted with C_6H_6 to give (1) as colourless needles shaped crystals (C_6H_6–$CHCl_3$) (yield 900 mg) (Found: C, 76.0; H, 11.2; $C_{31}H_{52}O_4$ required C, 76.2; H, 11.6%); IR 3400, 2950, 2895, 1725, 1480, 1380, 1365, 1285, 1180; ^1H NMR; 0.80 (s, 3H, 1×Me), 0.85 (s, 3H, 1×Me), 1.22 (s, 9H, 3×Me), 1.58 (s, 3H, 1×Me), 1.60 (3H, 1×Me), 3.85, 3.60 and 4.10.

Acetylation of (1) at reflux temperature

Compound (1) (100 mg) was acetylated with acetic anhydride (6 ml) and pyridine (5 ml) as usual to give (2) which was crystallized from C_6H_6–$CHCl_3$ as white crystalline needles (2) (Found; C, 71.2; H, 9.2; $C_{35}H_{56}O_7$ required C, 71.4; H, 9.5%); IR; 1735 (OAc), 1725 (COOMe): ^1H NMR; 0.80 (s, 3H, 1×Me), 0.85 (s, 3H, 1×Me), 1.22 (s, 9H, 3×Me), 1.55 (s, 3H, 1×Me), 1.60 (3H, 1×Me), 3.85 (3H, s, 1×COOMe), 2.00 (s, 3H, 1×OAc) 2.10 (s, 3H, 1×OAc) and 5.10 (m, 1H).

Acetylation of (1) at room temperature

Compound (1) (100 mg) was acetylated with acetic anhydride (6 ml) and pyridine (5 ml) at room temperature for 72 hr, which afforded the corresponding monoacetyl monomethyl leucotylate (3) as white crystalline substance (Found: C, 74.5; H, 10.0; $C_{33}H_{54}O_5$ required C, 74.7; H, 10.1%). IR (KBr, cm^{-1}): 3400, 1735 and 1725; ^1H NMR: 0.80 (s, 3H, 1×Me) 0.85 (s, 3H, (1×Me), 1.20 (s, 9H, 3×Me), 1.58 (s, 3H, 1×Me) 1.60 (s, 3H, 1×Me), 2.00 (s, 1×OAc), 3.85 (s, 3H, 1×COOMe) and 5.10 (m, 1H).

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LACTARIUS SANGUIFLUUS FR: AN EDIBLE MUSHROOM NEW TO INDIA

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An edible species of *Lactarius, L. sanguifluus* Fr, unrecorded from India so far[1] is widely distributed in Himachal Pradesh. The immature, trugid basidiocarps are consumed by the natives along with *L.*