TABLE I

Development of clonal cultures of different strains of Entamoeba *growing axenically in TYI-S-33 medium*

Strain of Entamoeba	No. of single trophozoite picked up	No. of culture established
	(growth temperature 37°)	
A. *E. histolytica*		
DKB	20	8
DKB–C*	20	12
P 106	20	16
	(growth temperature 25°)	
B. *E. histolytica*-like		
Huff	20	20
Laredo type-JA	20	12
C. *E. invadens*		
IP–1	20	16
IP–2	20	14
PZ	20	15
BN	20	15
SiS	20	15
SiVL	20	16

* Original DKB strain but trophozoites passaged through cholesterol upto twelve subcultures at every 72 hr.

compared to amoebae growing at 37° C. This finding is contrary to the findings of Gillian and Diamond[6] where they reported fewer microscopic colonies in low temperature strains. *E. histolytica* growing at 37° C are more fragile and susceptible to oxygen tension as compared to *E. histolytica*-like amoebae and *E. invadens* which grow at lower temperature and are more rigid to negative oxydation-reduction potential[8]. No marked and significant differences between "classical" *E. histolytica* strains and the non-pathogenic groups could be determined by the per cent development of clonal cultures as described by Gillian and Diamond[6].

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DERRONE-4′-O-METHYL ETHER FROM SEEDS OF DERRIS ROBUSTA

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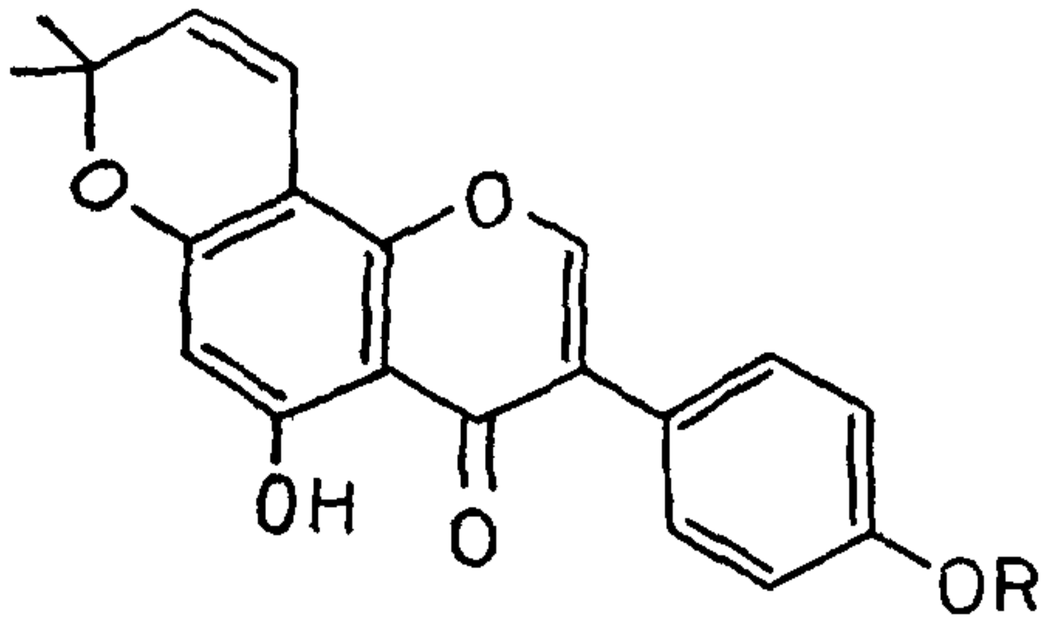
WE report in this note, the isolation and characterization of the pyranoisoflavone, 4′-O-methyl derrone from the seeds of Derris robusta (fam : Leguminosae) during our investigation on this plant[1–7]. This isoflavone was reported earlier from *Calopogonium mucunoides*[8] by Vilain *et al.*[8].

The ethyl acetate and methanol extract of the seeds were found to be similar (TLC), hence combined and subjected to column chromatography over silica gel. Elution with benzene-ethyl acetate (9·3 : 0·7), gave a white crystalline compound (25 mg), m.p. 170–2°. It analysed for $C_{21}H_{18}O_5$, did not respond to Shinoda's test but gave a pink colour in Na/Hg-HCl reaction for isoflavonoids, a dark brown colour with alcoholic ferric chloride and a bright yellow colour with boric acid in acetic anhydride (Dimroth reagent[9]), characteristic of a strongly hydrogen bonded *ortho*-hydroxy carbonyl system. The latter is also supported by intense absorptions at 3350 (chelated hydroxyl) and 1650 (carbonyl) cm^{-1} in the IR spectrum and a strong signal at δ 12·59 in the NMR spectrum ($CDCl_3$) of the compound. An absorption band in UV at λ_{max}^{MeOH} 282 nm, which undergoes a bathochromic shift of 9 nm on addition of aluminium chloride suggested a 5-hydroxyisoflavone skeleton for the compound. That the compound is an isoflavone was confirmed by the sharp singlet in NMR at δ 7·75 (characteristic of H–2 of the isoflavones). Absence of a bathochromic shift with sodium acetate in the UV spectrum indicated the absence of a free hydroxyl at 7-position[10]. NMR of the compound also showed a six proton singlet at δ 1·38 due to *gem*-dimethyl group and two doublets ($J = 10$ Hz) at δ 6·55 and 5·45, each integrating for one proton, corresponding to vinylic protons (H-4″ and H-3″, respectively) thereby suggesting the presence of a 2,2-dimethylchromen



I R = CH_3 II R = H

residue[11]. Presence of a *gem*-dimethyl grouping was further supported by absorptions at 1384 and 1367 cm^{-1} in the IR spectrum. The location of the 2,2-dimethylchromen residue at 7,8-position was established by a negative Gibb's test[12] (suggesting the absence of unsubstituted CH *para* to the phenolic group). Two doublets ($J = 9$ Hz) at δ 7·34 and 6·83, each integrating for two protons, characteristic of A_2B_2 pattern in the NMR spectrum were assigned to 2′, 6′ and 3′, 5′ protons, respectively. The methoxyl is, therefore, assigned to 4′-position. On the basis of chemical and spectral data[13] of the compound, the structure (I) was assigned to it. The identity of the compound was finally confirmed by comparison (m.p., m.m.p., co-TLC and co-IR) with a sample[7] obtained by partial methylation (diazomethane) of derrne (II).

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AGE OF THE LADAKH-DEOSAI GRANITE BATHOLITH, TRANS-HIMALAYA

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LADAKH–DEOSAI Granite Batholith is exposed along the NW–SE trending Ladakh Range which runs more or less parallel to the Indus Suture Zone of the Trans-Himalaya. This batholithic granite body has been observed to extend from Gilgit in the northwest to Hanle (Ladakh) in the southeast for over 500 km beyond which it is expected to continue further southeast into the Tibetan region and measures about 50 km in width. A part of this body in Gilgit-Deosai region has been studied by Desio[1] and the major part which runs through Ladakh region has been studied in detail by various workers[2–6]. Recently, Gansser[7] has shown such granite bodies to extend as detached outcrops all along the Himalayan Arc. The age of this granitic belt has been widely fluctuating and very little radiometric age data was available to date the magmatic events which resulted in this complex batholithic body. An attempt has been made in the present paper to understand the magmatic history of this batholith with the help of 110 fission track mineral ages of sphene epidote, micas and apatite collected from various parts of the Ladakh region, *i.e.*, Hanu, Leh, Khardung La, Tirit, Charg La, Kiari and Chumathang.

In regional geological setting the Ladakh-Deosai Granite Batholith forms the basement for the Indus Molasse (Miocene-Pliocene) which occurs unconformably over it at Kargil and extends as a linear belt towards east, upto Hanle, although near Leh the contact is concealed under the terraces of the Indus River[4,8]. The northern contact of the Ladakh Granite is covered by the Shyok volcanics[8] which are also intruded at places by some younger phase of the Ladakh granite[9,10].

The Ladakh-Batholith is complex in composition and varies from quartz diorite (tonalite) to granodiorite to granite. The traverses taken across and along this body by one of the authors (KKS) reveal that it is zoned in nature at places and becomes more acidic towards the core. Three zones in general have been recognised in this body, *viz.*, aureole zone, border zone and core zone[11]. The aureole zone is characterized by large scale emplacement of apophyses, tongues (ramifications) and veins of granodiorite, granite aplite and pegmatite in the host rocks, which are generally