In the alkali–silica diagram[9], the granites fall well within the alkaline region.

The granites contain higher Rb, Ba and Sr. Rb and Ba are partitioned in K-bearing minerals such as K-feldspar and biotite. The high Rb and Ba correlate well with the high modal K-feldspar. Sr is dominantly partitioned in plagioclase and other Ca-bearing minerals such as apatite and clinopyroxene. The granites of the present study, though containing higher Sr, have low modal plagioclase. To account for high Sr another mineral phase is required. Indeed the granites of the present study contain abundant clinopyroxene which have high Kd value for Sr.

The high field strength elements (HFS) such as Nb, Zr and Y are considered to be immobile during secondary processes and their abundance in the granite of the present study indicates alkaline affinity. The high concentration of LREE (La and Ce) is the unique feature of these granites. In the absence of analytical data on all the HREE the La/Y ratio can be taken as an indicator of LREE/HREE, as Y behaves like HREE[9]. The average La/Y ratio is 2.98, which is comparable with the reported ratios for the alkaline granites of Kerala[2]. The enrichment of both compatible (Ba and Sr) and incompatible (Rb) elements and low La/Y ratio suggest that the granitic melt has undergone only a limited fractionation. The high K/Rb ratio indicates a Rb-depleted source for the magma. The other compositional features such as low U content and very high Th/U ratio (compared to an estimated crustal average Th/U of ~3.8 (ref. 10) suggest that the source material was strongly depleted in U relative to Th. Such Rb and U depletion suggests a possible lower crustal granulitic source[11]. Melting of anhydrous granulites requires higher temperatures and pressures[12] and the rocks formed by these melts are relatively poor in normative quartz. Furthermore, near-minimum melts derived from rocks with high CaO will be generally more potassic. The presence of CO_2-rich fluids in granulites[13] will cause partial melts to become more alkaline. Thus, based on field and geochemical data, a lower crustal granulitic source is suggested for the granites of Gundlupet.

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TRITERPENES FROM THE LEAVES OF *RHUS ALATA* THUMB.

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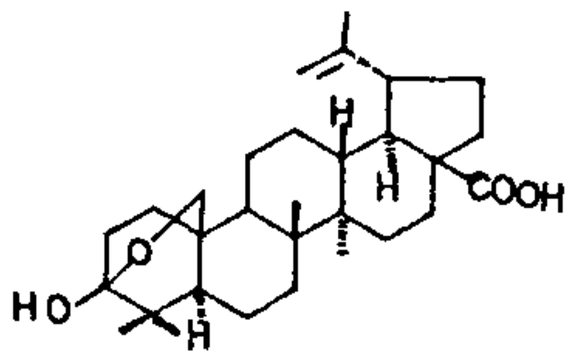
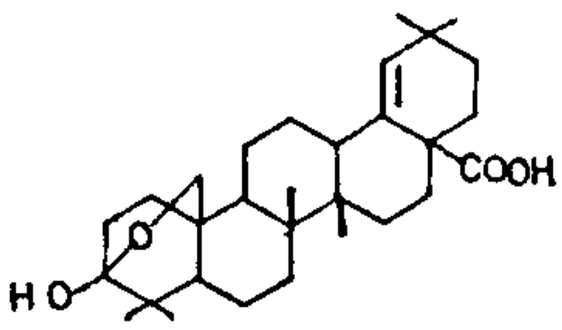
IN continuation of our phytochemical investigations on *Rhus alata* Thumb.[1], we now report the isolation and characterization of triterpenes benulin (I) and semimoronic acid (II). Benulin (I) has been reported earlier by Ionescu *et al.*[2] Semimoronic acid (II) has been reported in nature from only *Rhus semialata*[3] and it seems to be a characteristic phytoconstituent of *Rhus* species. Therefore, semimoronic acid (II) may be useful as a chemotaxonomic marker to establish interspecific relationships in the genus *Rhus*.

Rhus alata Thumb. was collected from Pachunga University College, Aizawl, Mizoram, and identified by Dr W. Husain, Department of Botany of this Uni-



(I)



(II)

versity. A voucher specimen was submitted to the University Herbarium (voucher number Husain–33701).

The dried and powdered leaf material of *R. alata* (1 kg) was defatted with light petrol and extracted with EtOH. The EtOH extract was concentrated and the residue was refluxed with light petrol and benzene, and treated with boiling water. Since the petrol-soluble fraction of EtOH extract and the straight petrol extract show similar components on TLC, they were mixed together. The combined petrol-soluble fraction was chromatographed over a silica gel column. The column was run with light petrol. The fractions eluted with light petrol were crystallized from hexane to give white crystals of RA5 (100 mg, m.p. 129°C). It was found to be dimethyl-terepthalic acid. Then the column was eluted with petrol–benzene (9:1–1:1), which gave inseparable mixtures of urushiol derivatives. Elution with benzene and benzene–EtOAc (9:1, 8:2) gave a greenish mass of chromatographically comparable components, which solidified on trituration with $CHCl_3$–EtOH. The solid mass, after repeated crystallization from $CHCl_3$–MeOH, gave two isomeric products, RA9 (50 mg, m.p. 283–284°C, R_f 0.56, benzene–acetone 5:1) and RA10 (60 mg, m.p. 260–261°C, R_f 0.48 benzene–acetone 5:1). RA9 was characterized as benulin (I) and RA10 as semimoronic acid (II).

RA9: ^{1}H NMR ($CDCl_3$), δ: 4.72 and 4.62 (1H, *br s* each, $=CH_2$), 4.24 and 3.72 (1H, AB*d* each, $J=8$ Hz, $-CH_2O-$), 1.66 (3H, *br s*, vinylic CH_3), 1.00 (3H, *s*, CH_3), 0.94 (6H, *s*, $2\times CH_3$), 0.84 (3H, *s*, CH_3). MS *m/z* (rel. int.): 470 (M^+, 26%), 455(1), 452(2), 439(2), 424(9), 409(2), 397(5), 313(13), 223(18), 205(20), 203(10), 201(13), 189(34), 187(34), 175(26), 163(24), 161(20), 159(19), 155(15), 133(34), 121(50), 119(53), 109(68), 107(60), 105(66), 44(100).

RA10: ^{1}H NMR ($CDCl_3$) δ: 5.16 (1H, *brs*, $=CH-$), 4.28 and 3.72 (1H, AB *d* each, $J=8$ Hz, $-CH_2O-$), 0.98–0.92 (12H, overlapping *s*, $4\times CH_3$), 0.84 and 0.72 (3H *s* each, $2\times CH_3$). MS *m/z* (rel. int.): 470 (M^+, 15%), 452(4), 426(70), 424(41), 411(8), 409(8), 397(9), 246(10), 236(55), 203(32), 191(15). 190(80), 189(68), 175(46), 163(100), 133(22), 121(27), 119(38), 109(30), 107(35), 105(40).

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TWO NEW SPECIES OF *PSEUDOCERCOSPORA* FROM INDIA

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DURING a survey for plant parasitic fungi, two interesting foliicolous hyphomycetes were collected. These fungi proved to be two new taxa of species rank. They are described below:

Pseudocercospora tephrosiae A. N. Rai *et* Kamal sp. nov.

Maculae pleraeque epigenosae, interdum in superficie inferiori, parvae, dispersae per totam superficiem folii, atro-brunneae; coloniae pleraeque epiphyllosae et raro hypophyllosae, sericae, velate brunneae;