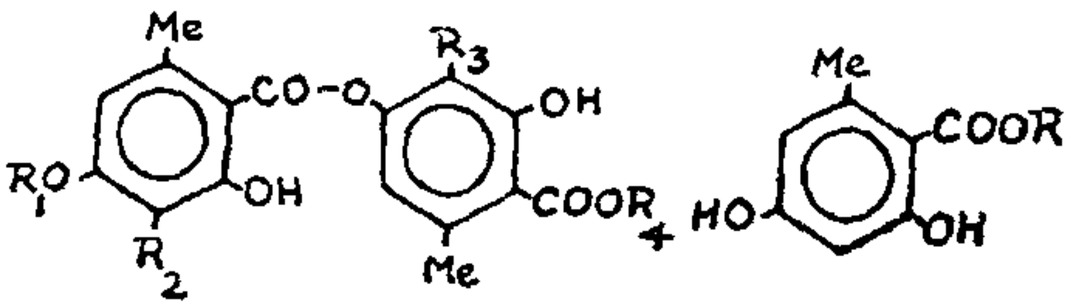
of the depside is obtained as the methyl ester. This method leads to some ambiguity when applied to methyl esters of depsides which are also of common occurrence in lichens.

Recently Bachelor *et al.*[2] reported the alcoholysis of depsides using *t*-butanol which seems to circumvent the disadvantages in other methods and accomplished the cleavage of two *β*-orcinol depsides, atranorin (I) and barbatic acid (II). They have concluded that the *t*-butanolysis brings about the cleavage of those depsides possessing only the *β*-orcinol skeleton.

Since there is no report of similar study on any simpler depsides, we have studied the *t*-butanolysis of lecanoric acid (III), a typical orcinol depside and the results are recorded here.



I–III IV, V

I, $R_1 = H$; $R_2 = CHO$; $R_3 = R_4 = Me$
II, $R_1 = R_2 = R_3 = Me$; $R_4 = H$
III, $R_1 = R_2 = R_3 = R_4 = H$
IV, $R = CMe_3$
V, $R = Me$

Lecanoric acid (III), isolated from the lichen, *Parmelia tinctorum*[3], was heated under reflux for 48 hr with *t*-butanol. The solvent was removed *in vacuo*, the residue was dissolved in ether and extracted with sodium bicarbonate solution. The crude solid, obtained on evaporation of the ether layer, when purified by passing through a silica gel column built in benzene, afforded a colourless crystalline compound, m.p. 155–56° (EtOH). It gave a violet colour with alcoholic ferric chloride and when refluxed with 10% methanolic NaOH followed by acidification, it yielded orsellinic acid (2,4-dihydroxy-6-methylbenzoic acid). It exhibited the following spectral characteristics:

UV : λ_{max}^{EtOH} 218, 266, 305 nm.

IR : ν_{max}^{Nujol} 3300, 2840, 1640, 1610, 1570, 1518, 1440, 1380, 1280, 1210, 990, 830, 750 cm^{-1}

PMR signals (DMSO d_6, 90 MHz, δ values, ppm): 1·65 (*s*, 9H, -COOC(C<u>H</u>$_3$)$_3$; 2·50 (*s*, 3H; Ar-C<u>H</u>$_3$); 6·25 (*s*, 2H, Ar-<u>H</u>); 9·50 (*s*, 1H, -O<u>H</u>) and 11·90 (*s*, 1H, chelated -O<u>H</u>).

On acetylation (Ac_2O + Py, room temp., 24 hr), the compound yielded a crystalline acetate, m.p. 92–93° (EtOH), exhibiting the following PMR signals ($CDCl_3$, 90 MHz, δ values, ppm): 1·60 [*s*, 9H, -COOC(C<u>H</u>$_3$)$_3$]; 2·30 (*s*, 6H, 2 -OCOC<u>H</u>$_3$); 2·45 (*s*, 3H, Ar-C<u>H</u>$_3$) and 6·85 (*s*, 2H, Ar-<u>H</u>). Based on the above data, the compound has been characterized as *t*-butyl orsellinate (*t*-butyl 2,4-dihydroxy-6-methylbenzoate) (IV). From the bicarbonate solution mentioned above, orsellinic acid could be isolated by acidification with ice-cold HCl which was identified by mmp and co-TLC with an authentic sample.

From the present work it can be concluded that orcinol depsides also, like *β*-orcinol depsides, undergo cleavage with *t*-butanol. It is interesting to note that the PMR spectrum of *t*-butyl orsellinate exhibits only a singlet due to the two aromatic protons which are *meta* to each other instead of the expected *m*-coupled doublets. However, it is observed that in the PMR spectrum of methyl orsellinate (V) also, only a singlet is observed for the two aromatic protons instead of the *m*-coupled doublets. [($CDCl_3$, 90 MHz, δ values, ppm) : 2·50 (*s*, 3H, Ar-C<u>H</u>$_3$); 3·90 (*s*, 3H, -COOC<u>H</u>$_3$), 6·30 (*s*, 2H, Ar-<u>H</u>), 9·30 (*s*, 1H, -O<u>H</u>) and 11·70 (*s*, 1H, chelated -O<u>H</u>)]. The precise reason for this does not appear to be clear and work is in progress to examine this aspect in detail.

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TWO NEW SPECIES OF *PSEUDOCERCOSPORA* FROM INDIA

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In January, 1978 two leaf spotting Hyphomycetes were collected on *Stephania discolar* Spr. and *Murraya koenigii* Spreng. respectively from North Gorakhpur Forest Division (U.P.). The present communication describes these collections as *Pseudocercospora menispermacearum* Kumar *et* Kamal sp. nov. and *P. murrayicola* Kumar *et* Kamal sp. nov. respectively.

Pseudocercospora menispermacearum Kumar *et* Kamal sp. nov.

Leaf spots indefinite, olivaceous brown, irregular, hypophyllous; colonies hypophyllous, effuse; myce-

TABLE I

Name of the Species	Conidiophores		Conidia			
	Size (μm)	Structure	Size (μm)	Colour	Shape	Septa
P. cycleae (Chiddarwar) Deighton	13·6–34 × 3·4	Unbranched densely fasciculate	23·8–59 9 × 3·4–4·1	Brown	Obclavate to cylindro-obclavate	2–8
P. cocculi (H. Syd.) Deighton	30–60 × 4–6	Occasionally branched	50–140 × 4–6	Straw-coloured	Cylindric or cylindro-clavate	3–12
P. menisper-macearum (Present sp.)	upto 90 × 3·7–4	Usually unnbranched loosely fasciculate	14–50 × 3·7–7·0	Pale brown	Cylindroclavate	1–4

lium immersed, stroma upto 35 μm diam; conidiophores macronematous, mononematous, 3–5 in fascicle emerging through stomata, subhyaline, usually unbranched, divergent, smooth, septate, geniculate at the apical region, flaring out slightly towards the apices, up to 90 μm long, 3·7–4 μm in diam; conidiogenous cells integrated, terminal, sympodial, geniculate with short and broad geniculations, commonly 7–10·5 μm apart, with no conidial scars; conidia solitary, acropleurogenous, simple, straight to slightly curved, pale brown, smooth walled, cylindro-clavate, transversely 1–4 septate (commonly 3), 14–50 μm long, 3·7–7·0 μm in diam at the broadest part, 1·5–2·5 μm in width along the narrow base. (Fig. 1 *a, b*).

On living leaves of Stephania discolar Spr. (Menispermaceae) Gorakhpur, January, 1978; leg. P. Kumar 10; Type IMI 229191.

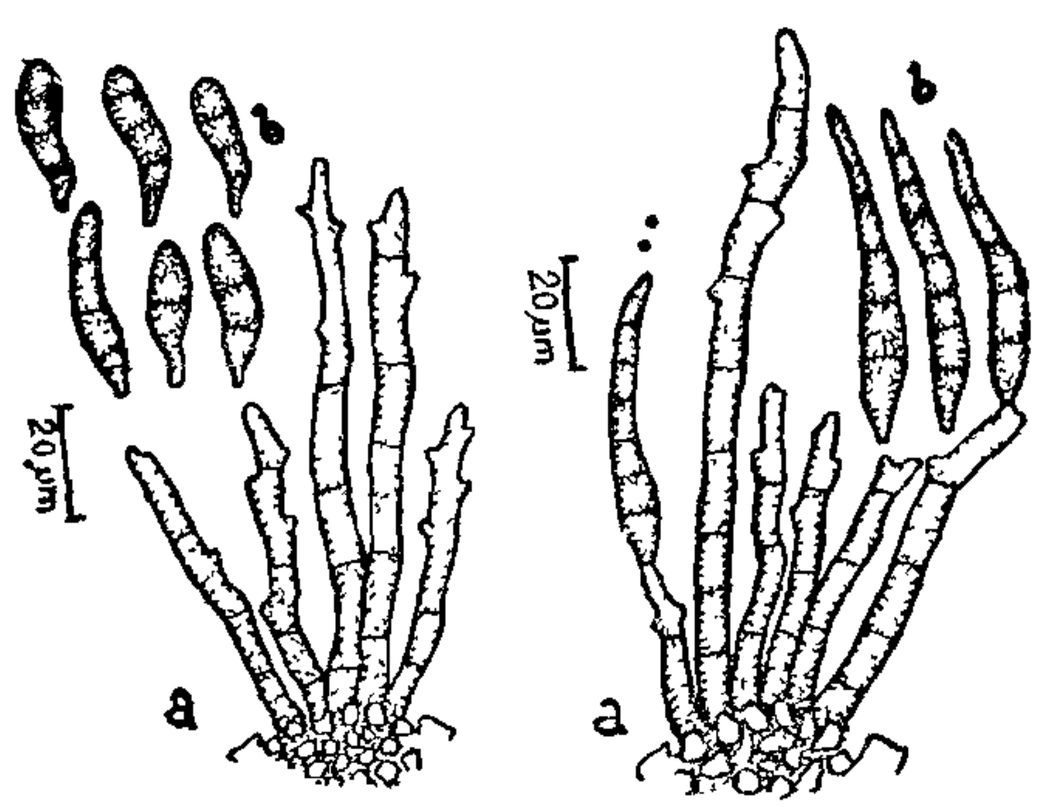
Foliorum maculae informes, olivaceo-brunneae, *enormes, hypophyllae; coloniae hypophyllae, effusae;* mycelium immersis compositum; stroma ad 35 μm diam; *conidiophora macronemata, mononemata,* quaterna vel quina in fasciculis per stomata emergentia, subhyalina, vulgo haud ramosa, livia, divergentia, septata, apicem versus genicu lata et paulum, ad 90 μm longa, 3·7–4 μm, vulgo apicem versus 4·5 μm lata; cellulae conidiogeneae integratae, terminales, sympodiales, geniculatae, geniculatis brevibus, amplis, geniculatis lateralibus plerumque inter se 7–10·5 μm distantibus, cicatricibus conidicis nullis; conidia singularia, singula orta, acrogena, simplicia, recta vel paulum arcuata, cylindro–clavata, pallide brunnea, levia, transverse 1–4-(vulgo 3-) septata, 14–50 μm longa, builatissima, 3·7–7·0 μm diametro, prope basim angustam 1·5–2·5 μm lata.

A comparison of this collection with certain known species either on the same host or on members of the host-family in question[1–4] is given in Table I.

A perusal of the morphological features of the *Pseudocercospora* spp, presented in Table I suggests the distinct specific identity of the present collection. This taxon is neither conspecific with the known species nor any species of *Pseudocercospora* that has ever been described on the host. Therefore, the present collection is described as a new species.

Pseudocercospora murrayicola Kumar *et* Kamal sp. nov.

Colonies hypophyllous, effuse, tufted, velvety, light brown; mycelium mostly immersed, branched, septate, subhyaline; stroma present, pseudo-parenchymatous, substomatal, dark brown, 22–26 μm in diam; conidiophores macronematous, mononematous, caespitose to rarely synnematous, usually unbranched, straight to slightly flexuous, erect, smooth, geniculate, pale olivaceous brown, usually up to 120 × 3·6–5·5 μm; conidiogenous cells terminal, integrated, monoblastic to polyblastic, sympodial, more or less geniculate with short and broad geniculations; conidia simple, solitary, acrogenous, mostly obclavate, apex slightly acute, smooth, straight to slightly flexuous, pale brown,



FIGS. 1–2. Fig. 1. *Pseudocercospora menispermacearum* Kumar *et* Kamal sp. nov. (*a*) Stroma with conidiophores. (*b*) Conidia. Fig. 2. *Pseudocercospora murrayicola* Kumar *et* Kamal sp. nov. (*a*) Stroma with conidiophores. (*b*) Conidia.

TABLE II

Name of the Species	Conidiophores		Stroma		Conidia		
	Colour	Size (μm)	Diam. (μm)	Shape with wall configuration (μm)	Size	Colour	Septa
P. murrayicola (Present sp.)	Paleolivaceous brown	120 × 3·6–5·5	22–26	Mostly obclavate with smooth wall	61·5 × 4·7	Pale brown	4–8
P. fagarae (Yamam.) Deighton	Brown	34–59 × 3·4–4·1	34–102	Obclavate to cylindric obclavate with sinuous wall	23·8–79·9 ×4·2–5·1	Pale brown	0–6

transversely 4–8 septate, commonly 61·5 × 4·7 μm (Fig. 2 *a*, *b*).

On living leaves of *Murraya koenigii* Spreng. (Rutaceae); Gorakhpur, Jan. 1978; leg. P. Kumar 80 Type, IMI 227049.

Coloniae hypophyllae, effusae, floccosae, velutinae, pallide brunneae; mycelium plerumque immersis, ramosis, septatis, sub-hyalinis compositum stroma pseudoparenchymaticum, sub stomate situm, obscure brunneum, 22–26 μm diametro; conidiophori macronemati, mononemati, caespitasi vel raro synnematici, vulgo non ramosi, recti vel paulum flexuosi, erecti, leves, geniculati, pallide olivaceo-brunnei, plerumque ad 120 × 3·6–5·5 μm; cellulae conidiogenae terminales, integratae, mono-vel polyblasticae, sympodiales, plus minusve geniculatae, geniculatis conidialibus brevibus, crassia; conidia simplicia, singularia, acrogena, maximum partem obclavata, apice paulum acuto, levia, recta vel paulum flecuosa, pallide brunnea, transverse 4–8-septata, vulgo 61·5 × 4·7 μm.

As evident by a thorough survey of literature, the only species formerly described on Rutaceae is *P. fagarae* (Yamam.) Deighton[1]. A comparison of this fungus with present one is given in Table II.

It is gathered from Table II that the present form is different from the reported species *P. fagarae*.

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MUTABILITY OF *SR* LOCUS IN JUTE (*CORCHORUS CAPSULARIS*)

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A WILD strain of jute (*Corchorus capsularis*), known as 'Tripura' and having deep serrated narrow leaf, was found often to produce spontaneous somatic mutation of normal leaf and a brief account of the frequency and nature of this mutation is reported herein. Genetically controlled somatic mutations are known in maiz.[1], *Antirhinum majus*[2], *Nicotiana*[3] and many other plant species. A large number of spontaneous and induced mutants are known in jute (*Corchorus capsularis*), but the mutation reported presently was not comparable to any of the existing ones and thus it deserved detailed investigation.