OCCURRENCE OF CUTICULAR PAPILLAE IN CYPERUS

O. P. SHARMA AND R. SHIAM
School of Plant Morphology, Meerut College
Meerut, India

In Cyperaceae, papillae have earlier been reported only in some species of Carex, Causcis, Chortizandra, Chrysothrix, Cladium Epischoenus, Embrisstylis, Lepidosperma, Lepronia, Machaerina, Microdracoides, Neesenbeckia and Scleria (Metcalf3) and Eriophorum (Ziegen-Speck3), but so far there is no report of their occurrence in Cyperus, the second largest genus of the family with about 700 species (Lawrence1). While observing epidermal features of the leafy bracts in some species of this genus, cuticular papillae were found in species given in Table I.

Cuticular papillae, though occur rarely except in C. pilosus, have been observed overarching the stomata in all these species (Table I, Figs. 1-4). Each such stoma is surrounded by the epidermal cells of normal shape and size.

**Table I**

<table>
<thead>
<tr>
<th>Sl. No.</th>
<th>Species</th>
<th>Occurrence</th>
<th>No./Position per stoma</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>C. alopecurosides</td>
<td>Rare</td>
<td>4 Two polar and two lateral</td>
</tr>
<tr>
<td>2</td>
<td>C. digitatus</td>
<td>Rare</td>
<td>1 Overarching a subsidiary cell</td>
</tr>
<tr>
<td>3</td>
<td>C. exaltatus</td>
<td>Rare</td>
<td>2 Either polar or lateral</td>
</tr>
<tr>
<td>4</td>
<td>C. pilosus</td>
<td>Common</td>
<td>1-4 Present either on one (Fig. 1), two (Fig. 2), three (Fig. 3) or all the four (Fig. 4) sides of stomata</td>
</tr>
<tr>
<td>5</td>
<td>C. rolandus</td>
<td>Very rare</td>
<td>1 Overarching a subsidiary cell</td>
</tr>
</tbody>
</table>

Figs. 1-4. Abaxial epidermal cells of leafy bract of C. pilosus showing cuticular papillae on one, two, three and all the four sides of stomata respectively.

June 19, 1980.


A NEW SPECIES OF VERONAEA

R. P. SINGH, KAMAL AND MRS. P. ABBASI
Department of Botany, University of Gorakhpur
Gorakhpur 273001, U.P., India

While making a survey of parasitic fungi of the Gorakhpur region (U.P.), authors collected a leaf spotting fungus on *Smilax macrophylla* Roxb. from
the Madhavilia range of North Gorakhpur Forest Division. Microscopic studies led to the conclusion that the fungus infecting the host is an undescribed species of *Veronaea*. The same is named, described and illustrated in the present communication.

*Veronaea smithialis* sp. nov.

Contagionis maculae amphigenae, irregularis coloniae hyphophyllae, effuse, primo inequaliter sparsae, matutinis coalescentes, brunnae vel obscure brunnae mycelium partim immersum, partim superficial, hocchyphis septatis, ramosis, subhyalini vel pallide brunneis, leuibus, et 3.5 βm crassis compositus; conidiophori macronemati, mononemati, singillati in apicem vel lateri hypharum oriri, simplices, recti vel nonnullum quam flexuosi, cylindrici vel subulati, leuisci, a septis numero et 12 divisi, brunnei, apicicem versus pallidiiores et paulo goniculati, conidiorum cicatricibus pluribus incrassatis notati, 70–165 (vulgo 92–125) βm longi, 3.5–5.5 βm diametro cellulae conidiogenae polyblasticae, integratae, terminales, symbodiales, cicatricibus crassis notatae, cylindricae, quam cæstæ pallidiories; conidia singularia, accrescens, leuia, cylindrica vel parum obclavata, apicem rotundato, basi conico-truncate et cicatrice prominenti notato, vulgo hyalina, interdum subhyalina, transversa 1–12 septata (vulgo 3–5-septata), 14–16.4 (vulgo, 21.5–32.5) βm longa, 2–4 βm crassa.


Infection spots amphigenous, irregular, colonies hyphophyllous, effuse, irregularly scattered in the beginning but coalescing with age, brown to dark brown, with partly immersed and partly superficial mycelium, composed of septate, branched, subhyaline to pale brown, smooth walled, up to 3.5 βm wide hyphae; conidiophores macronematosus, mononematosus, arising singly either terminally or laterally from the hyphae, simple, straight, sometimes flexuous, cylindrical or subulate, smooth walled, with up to 12 septa, brown, becoming paler towards the apex with less distinct geniculations 70–165 βm (usually 90–125 βm) long and 3.5–5.5 βm in dia.; conidigenous cells polyblastic, integrated, terminal, symbodial cicatrizd, cylindrical, paler than the rest of the cells, bearing several thick scars, conidia smooth walled, cylindrical to slightly obclavate, with rounded apex and conico-truncate base, bearing prominent scar at the base, usually hyaline to subhyaline, 1–12 transversely septate (usually 3–6), 14–16.5 βm (usually 21.5–32.5 βm) long and 2–4 βm thick (Fig. 1a, b, c).

On living leaves of *Similax macrophylla* Roxb. (Similaccae); Madhavilia range, Gorakhpur Forest Division Feb.–March, 1978; leg. R. P. Singh, 310, IMI 212616, type.

---

![Fig. 1. *Veronaea smithialis* sp. nov. (a) Conidia (b) Conidiophores; (c) Superficial hyphae giving rise to conidiophores.](image-url)
400 x 2-3 μm). This species is peculiar in having larger and densely septate conidia which are mostly hyaline as against the conidia of other species of the genus which are either ascinate or having few septa.

Authors are thankful to the Director, C.M.I., Kew, England, for the identification of the fungus, Dr. D. P. Rogers, University of Illinois, Urbana, U.S.A. for preparing the Latin diagnosis and Prof. K. S. Bhargava, University of Gorakhpur, for providing facilities.


SIMULTANEOUS OCCURRENCE OF POWDERY MILDEWS ON CUCURBITA MAXIMA DUSH AND ABELMOSCHUS ESCULENTUS (L.) MOENCH FROM KARNATAKA, INDIA

B. A. ULLASA AND K. S. AMIN
Indian Institute of Horticultural Research, Bangalore 560 080, India

Powdery mildew infected leaf samples from experimental fields infecting Cucurbita maxima Dush var. Arka Suryamukhi and Abelmoschus esculentus (L.) Moench var. Pusa Sawani were periodically collected for the presence of perfect stage, nature of imperfect state, and occurrence of hyperparasite. Some of the powdery mildew infected leaf samples of A. esculentus collected during the months of October 1978 and April 1980 and Cucurbita maxima collected during the month of January 19 9 and March 1980 showed the presence of powdery mildew caused by Leveillula taurica in addition to Oidium sp.

In pumpkin variety, powdery mildew due to Sphaerotheca fuliginea usually covers both the leaf surfaces, and more commonly occurs in this region on all the cucurbits (Ullasa et al.3). Leveillula taurica infection was restricted to lower leaf surface as small specks or angular spots restricted by veins. Due to its restricted colony growth and also due to its sporadic nature mostly it goes unnoticed. Careful microscopic examination of such small colonies on the lower surface revealed the presence of Leveillula taurica producing its conidia, bore through stomata either singly or in small clusters bearing conidia at their apex singly (Fig. 1).

While the okra powdery mildew due to E. eichoraeorum could be easily identified due to its ectophytic growth habit, it became somewhat difficult to distinguish infection due to Leveillula taurica because of its suppression due to the severe infection of E. eichoraeorum. However, in the early stage scattered yellowish patches were observed on the upper leaf surface which corresponded to infection due to Leveillula taurica on the lower surface. As symptoms get diffused and overlap each other the symptoms due to Leveillula taurica goes unnoticed in later stage. Whenever localized yellowish patches are seen on the leaves, infection due to Leveillula taurica can be suspected. Simultaneous occurrence of L. taurica with oidiial powdery mildew is not uncommon. Ullasa and Sohi2 have reported occurrence of L. taurica along with O. caricae on papaya and Mahirshi et al.3 reported the same thing on egg plants.

Apart from their simultaneous occurrence L. taurica is reported for the first time on these hosts from India.

The authors are grateful to Dr. G. S. Randhawa, Director and Dr. H. S. Sohi, Senior Plant Pathologist for their interest and facilities. L. taurica on A. esculentus and C. maxima are deposited under IMI Nos. 238766 and 238767 at C.M.I., respectively.

August 4, 1980.