

## Taxonomical Notes on tropical Fungi.—I.

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The fungi treated in this paper are either lesser known species on new hosts or entirely new species. The total number is four, one belonging to the *Ustilaginales* two to the *Uredinales*, and one to *Fungi imperfecti*. All the specimens have been deposited in the Mycological herbarium of the University of Delhi.

### *Ustilaginales.*

*Pericladium grewiae* (Pass.) Mundkur in *Mycologia* **36**: 291, 1944, Syn. *Ustilago grewiae* (Pass.) Henn. Hedwigia **39**: 75, 1900; Petch. T, Ann. Roy. Bot. Gardens, Peradeniya **5**: 223, 1912.

On *Grewia orbiculata*, Ajmer (India), B. D. Tiagi, 22. 2. 51.

The surface of the woody shoots is covered with small, dusty brown pustules which are hard and coriaceous. The pustules are more or less rounded but are sometimes angular due to compression. Each measures about 1 to 4 mm. in diameter. It is covered on the outside with stiff, pointed hairs which can easily be seen even with the naked eye. When ripe the pustules rupture on one side forming a small slit. In each pustule there are 3—5 locules, and many chlamydospores are massed together in each locule. These are more or less agglutinated when young but separate from one another at maturity. The spores are rounded to ellipsoidal, brownish and smooth. The episore is uniformly thickened. The spores measure from 7  $\mu$  to 10  $\mu$  in diameter.

The genus *Pericladium* was first described by Passerini (1875) on *Grewia*, a member of *Tiliaceae*. He considered it to belong to the *Uredinales*. This proved to be a mistake and Hennings (1900) assigned it to *Ustilaginales* naming it as *Ustilago grewiae* (Pass.) Henn. Mundkur (1944), who studied the *Ustilaginales* of the North-Western Himalayas in the collection made by Dr. C. Stewart and Mrs. I. D. Stewart, revived the name *Pericladium* for a smut on *Grewia villosa* Willd. He considered that the smut on *Grewia* was sufficiently distinct from *Ustilago* to warrant its recognition as a separate genus and the name *Ustilago grewiae* was reduced to synonymy under *Pericladium grewiae*. Earlier Zundel (1939) had

described a new smut, *Xylosporium piperii*, on a species of *Piper* from Transvaal. Since this is exactly similar to *Pericladium*, Mundkur (1944) made a new combination of Zundel's smut as *Pericladium piperii* (Zundel) Mundk. Yet another species, *P. tiliacearum* Mundk. & Thirum. has been described by Thirumalachar (1950) on *G. tiliaefolia*. Probably a revision of this species is necessary because the writer could find no difference in the descriptions of *P. grewiae* and *P. tiliacearum*. In any case, three species of *Pericladium* are thus known at present — *P. piperii* on *Piper* from Transvaal, *P. tiliacearum* on *Grewia tiliaefolia* from South India and *P. grewiae* on *Grewia* (*mollis* Tues ?) from Abyssinia, *Grewia columnaris* Sm. from Ceylon, *Grewia villosa* from the North-Western Himalayas and *G. orbiculata* from Ajmer (India).

### *Uredinales.*

#### ***Coleosporium sidae* n. sp**

Pycnidia et aecidia ignota. Sori uredosporiferi amphigeni, plerumque hypophylli, erumpentes, aparaphysati, in maculis orbicularibus 1—1.5 mm. diam. oriundi; uredosporae globosae, tuberculatae, catenulatae,  $7-10.4 \times 8.9-12 \mu$ , raro usque ad  $8.5 \times 15.8 \mu$ ; sori teleutosporiferi plerumque hypophylli, subepidermales, erumpentes, subpulverulenti, in maturitate ob germinationem teleutosporarum gelatinosi; teleutosporae cylindraceae, continuae, coalescentes,  $44 \mu$  longae,  $16 \mu$  latae, episporio tenui, phragmobasidii 4-cellulares germinantes, cellulis  $10.4-14 \times 12.2-17.4 \mu$ . Germinatio basidiorum ignota.

Hab. ad folia viva *Sidae* spp. (*Malvaceae*) Mussorie (India), 25.2.50 leg B. D. Tiagi (Typus).

A *Coleosporium* (*C. pallidulum*) was earlier described by Pegazzini on a species of *Malvaceae* from S. America. This species has been doubtfully listed by Saccardo under *Coleosporium*. It is possible that Pegazzini was describing a species of *Aecidium*. Even if the species erected by him is valid, the present *Coleosporium* differs from it very much in the character and size of the uredospores.

It may be observed here that even in the oldest telial sorus no trace of catenulations can be discerned. Catenulations of the basidial elements in *Coleosporium* is not considered to be a characteristic feature, and Dietel (1903) on the basis of the presence of catenulations in some species had removed the latter to a new genus *Stichospora*. But this is now generally considered to be a synonym of *Coleosporium*. Recently Olive (1949) has remarked that catenulation of the basidial elements is fairly characteristic of about 15 North American species of *Coleosporium*. Viewed in this light the

genus *Coleosporium* would consist of microcyclic species (*Gallowaya* spp.) in which catenulations of the basidial elements is a very marked feature, and as well as others in which catenulations are completely absent. Between these two extremes would be placed all the species which show catenulations to a minor extent.

The uredospores of *Coleosporium sidae* are catenulate and they are formed from the basal mother cells. In between the chains certain intercalary sterile cells are met with. The basidia are not always present in a longitudinal row as is usually the case in other species, but the cells of the basidium are variously arranged due to diverse longitudinal and oblique septation. Such type of basidia are also met with in various other species of *Coleosporium* as described by Weir (1912) in *C. pulsatillae* and Olive (1949) in *C. vernoniae*.

Another rust, *Puccinia heterospora*, also occurs on *Sida* spp. in India. But the infection due to *Coleosporium* is evident only in the younger leaves, the older ones being invariably covered with the black sori of *P. heterospora*. This probably is the cause why other collectors overlooked the *Coleosporium*.

*Puccinia invenusta* Syd. in Annal. Mycol. 5: 498, 1907.

On the living leaves of *Phragmites karka*, West of Hindan Nadi, Delhi (India). 22. 2. 50. B. D. S a n w a l.

This rust closely agrees with the description given by Sydow. Basal cells, however, are also present which must have been overlooked by him.

### *Fungi imperfecti.*

*Darlucella filum* (Biv. Bern.) Cast., Catal. Pl. Marseille, Supplem. p. 53, 1851. — Syn. *Sphaeria filum* Biv. Bern., Stirp. rar. Sicil., Manip. 3 p. 12, 1813.

On old Uredosori of *Puccinia kuehnii* Syd. on *Erianthus munja* and *Puccinia invenusta* Syd. on *Phragmites karka*.

I am very thankful to Dr. F. Petrak for rendering the diagnosis of the new species in Latin and for many valuable suggestions. I am also obliged to Prof. P. Maheshwari of the Delhi University for his kind help and encouragement.

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Artikel/Article: [Taxonomical Notes on tropical Fungi - I. 384-387](#)