

## Further Notes on Discomycetous Fungi on Coniferous Hosts.

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With 1 Textfig.

These short notes deal with some additional information on *Tryblidiopsis pinastri* (Pers.) P. A. Karst. and give a description of a new fungus *Encoelia Petrakii* n. sp.

1. *Tryblidiopsis pinastri* (Pers.) P. A. Karst. Myc. Fenn. **1**: 262. 1871.

A description of the perfect stage of this fungus has been already given in an earlier paper (G r e m m e n, 1955). Since there exists much confusion regarding its conidial form, further study of this fungus was undertaken to settle the matter. Regarding its conidial stage the following suggestions have been made by different authors.

First K a r s t e n (1871) after describing the apothecia of *Tryblidiopsis pinastri* (written *Tribliidiopsis*) added: "Spermogonia erumpentia, sphaeroidea, nigra, minuta. Spermata filiformia, arcuata, incoloria, longit. 16—26 mmm., crassit. 1 mmm."

R e h m (1896) mentioned: „Als Spermogonienpilz wird hierher gezogen: *Micropera pinastri* (Moug. & Nestl.) Sacc.

According to v o n H ö h n e l (1918) *Micropera pinastri* should be named *Gelatinosporium pinastri* (Moug. & Nestl.) v. Höhn. and is the conidial form of *Scleroderris pinastri* v. Höhn. The conidia are sickle-shaped, measuring  $50-60 \cong 5-7 \mu$ .

The same author described a conidial stage, which he found associated with the immature apothecia of *Tryblidiopsis pinastri*. He gave a detailed description and proposed for it a new genus, *Tryblidiopycnis*, with the type species *Tryblidiopycnis pinastri* v. Höhn. The fructifications were oozing yellowish spore-tendrils. The spores measured  $25 \cong 1 \mu$ , were strongly curved and formed on short conidiophores.

K u j a l a (1950) pointed out that a relationship has been suggested between *Micropera pinastri* and various Discomycetes, viz. *Tympanis pinastri* and *Cenangium abietis* (= *ferruginosum*). He regularly observed on *Picea*, pycnidia in connection with *Tryblidiopsis pinastri*, containing conidia  $20-30 \cong 1 \mu$ . He states moreover: „Es handelt sich offenbar um denselben Pilz wie der von K a r s t e n (l. c.) gemeinte und seine Zusammengehörigkeit mit *T. pinastri* dürfte ausser Zweifel stehen.“

Owing to the work of J. W. Groves we now possess more information on the life-cycle of several discomycetous genera.

Species of the genus *Micropera* or *Gelatinosporium* belong to the genus *Dermea* Fr. (Groves, 1946); species of the genus *Tympanis* Tode ex Fr. are congeneric with pycnidia of the genus *Pleurophomella* (Groves, 1952) and *Cenangium abietis* (= *Cenangium ferruginosum* Fr. ex Fr. does not possess an imperfect stage at all (Gremmen, 1952).

Although von Höhnell (1918) accepted a connection between *Tryblidiopsis pinastri* and *Tryblidiopycnis pinastri* on their simultaneous occurrence; he did not give a positive evidence of their relationship by means of a cultural experiment.

To avoid further speculations concerning the conidial stage of *Tryblidiopsis pinastri*, it was desirable to study this fungus in culture and to see whether or not such a stage was developed.

The material used consisted of mature apothecia of *Tryblidiopsis pinastri* (Pers.) P. A. Karst., collected in the surroundings of Arosa (Switzerland), from branches of *Picea Abies* (L.) Karst., in June 1954.

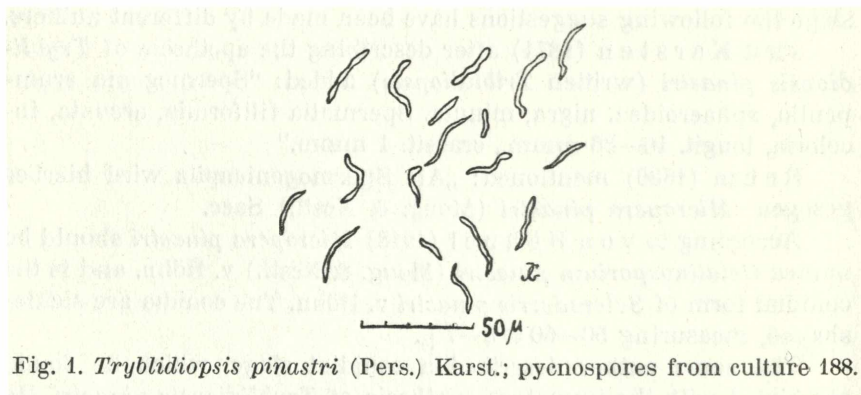


Fig. 1. *Tryblidiopsis pinastri* (Pers.) Karst.; pycnosporos from culture 188.

By means of the natural ejaculation of the ascospores cultures were obtained on nutrient media. The ascospores germinated slowly or not at all and the resulting mycelium was greyish-white. After transplanting to Erlenmeyer-flasks containing sterilized wheat-grains, the growth of the mycelium increased and after about 3 months a great number of black pycnidia were observed, when mature producing green or yellowish-green spore-tendrils. The spores were  $19-22.8 (20.6) \pm 1.2 \mu$ , however, there were some shorter ones ( $11-12 \mu$  long). They are colourless, one-celled, a few straight, but most of them curved and pointed. This imperfect stage was identical with Höhnell's fungus *Tryblidiopycnis pinastri*.

It has been clearly proved now from this experiment that von Höhnell (l. c) was quite right when he accepted *Tryblidiopycnis*

*pinastri* as congeneric with *Trybliopsis pinastri*. Both Karsten (l. c.) and Kujala (l. c.) certainly had the same fungus in mind.

None of the other mentioned imperfect stages were observed in the above cultures and it is concluded that they belong to other ascomycetous fungi and are not connected with the Discomycete discussed in this short paper.

## 2. *Encoelia Petrakii* Gremmen nov. spec.

In the course of the year 1954 a characteristic *Cenangium* — like fungus was collected on the hosts *Pinus* and *Pseudotsuga*.

Since it was not possible for me to identify it with an already described one, part of the material was directed to Dr. J. Walton Groves, Department of Agriculture, Science Service, Ottawa.

Dr. Groves kindly informed me: "I have not seen it before and have not been able to identify it. I have checked everything I know of that occurs on *Pinus* but cannot match anything with your fungus."

The fungus seems to be a rare one, because it was only found twice and in a few specimens.

It is here described as a new species in honour of the well-known mycologist Dr. F. Petrak at Vienna, who celebrates this year his 70th. birthday.

Apothecia sessilia vel subsessilia, solitaria, 1.2—1.5 mm. in diam., cupuliformia vel infundibuliformia, ferruginosa. Margo crenatobadium. Excipulum 30—45  $\mu$  crass.: textura oblita 20—30  $\mu$  crass., hyalina, cartilaginea; cortex excipuli badio-phaeus, 10—15  $\mu$  crass. Hypothecium ferruginosum, texturam intricatam formans. Hymenium 57—65  $\mu$  crass., hyalinum vel subferrugineum. Asci 95  $\Rightarrow$  7.6  $\mu$ . Ascospores 15.2—17.1  $\Rightarrow$  3.5—3.8  $\mu$ , unicellulares, hyalinae, bacilliformes vel allantoideae. Paraphyses filiformes, incolores, 3.5  $\mu$  crass., apex 4.5  $\mu$ , hyalinus vel ferruginosus. Hab. in ramis emortuis *Pini sylvestris*, "Oostereng", prope Wageningen, Gelria, Batava, 17. X. 1954, leg. J. Gremmen, Typus nr. 813.

Apothecia sessile or subsessile, 1.2—1.5 mm. across, cupulate or infundibuliforme, rustbrown. Margo crenulate, chocolate-brown. The exciple is 30—45  $\mu$  thick and consists of a hyaline and cartilagineous textura oblita, 20—30  $\mu$  thick, whereas the cortex of the exciple is darkbrown and 10—15  $\mu$  in thickness. Hypothecium is rustbrown, forming a textura intricata. Hymenium is colourless or lightbrown, 57—65  $\mu$  thick. Asci 95  $\Rightarrow$  7.6  $\mu$ . Ascospores 15.2—17.1  $\Rightarrow$  3.5—3.8  $\mu$ , colourless, one-celled, bacilliform or somewhat allantoid. Paraphyses filiform, colourless, about 3.5  $\mu$  thick; at the apex 4.5  $\mu$ , often lightbrown or darkbrown. On dead, fallen twigs of *Pinus sylvestris*, "Oostereng", Wageningen, Netherlands, 17. X. 1954, type 813.

Another collection has been found on a young, dead stem of *Pseudotsuga*. Renkum, "Oranje Nassau's Oord", X. 1954, Gremmen 835.

The measurements of the asci and ascospores were somewhat larger, viz.  $96-110 \Rightarrow 8.6-10.5 \mu$  and  $(15.4)17.3-19.2(20.2) \Rightarrow 3.8 \mu$  respectively, and the ascospores were moreover provided with globular microconidia attached to the ends of the ascospores.

Cultures were derived from the ascospores. The colour of the young mycelium was greyish till greyish-white, but gradually turned into cream and brown. After ageing the mycelium formed a kind of black stroma on the agar. On this stroma-like tissue microconidia were abundantly developed in numerous small, milky-coloured droplets. These microconidia were globular, colourless and measured about  $3-4 \mu$ . After a few months stipitate trumpet-like, brown-red fructifications arose on this stroma. These were apothecial rudiments, but although they were observed for a long time, they did not mature.

#### A c k n o w l e d g e m e n t s .

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