

HYPODERMELLA HIRATSUKAE, A NEW SPECIES OF HYPODERMATACEAE FROM JAPAN¹

GRANT D. DARKER

With plate 154

FIVE SPECIES of Hypodermataceae have been reported on conifers in Japan by Shirai and Hara (1927). Only one species, *Lophodermium pinastri* (Schröd. ex Fr.) Chev., was listed as occurring on pines. The present paper describes a new Japanese species of Hypodermataceae of unusual interest which was encountered during a hasty examination of the Hypodermataceae in the Mycological and Pathological Herbarium of the United States Department of Agriculture in Washington, D. C. Grateful acknowledgment is made to Dr. C. L. Shear and Mr. John A. Stevenson for the privileges extended to the writer.

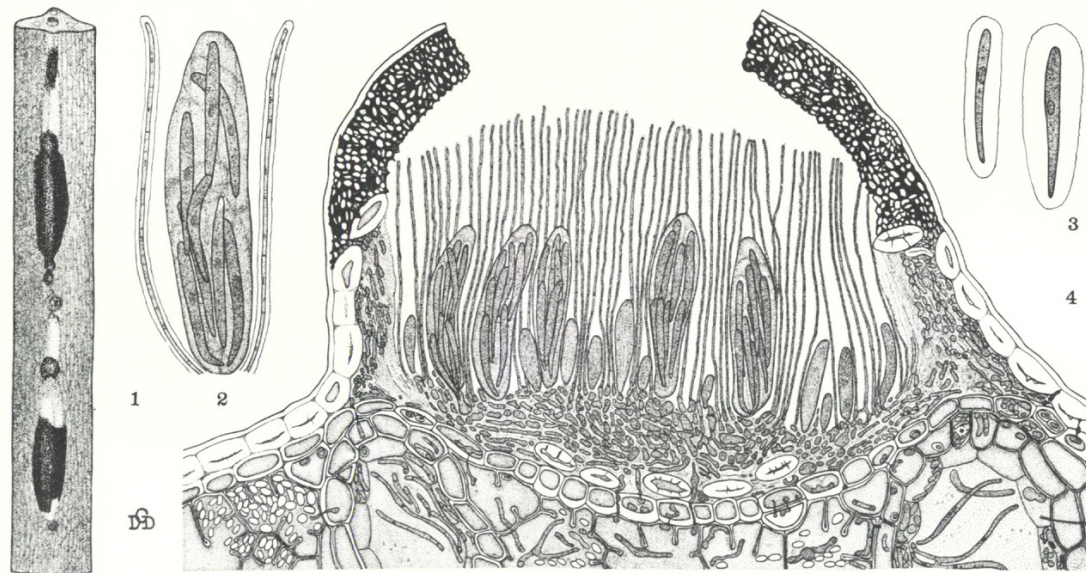
Hypodermella Hiratsukae, sp. nov.

Hysterotheciis in uno ordine epiphyllis oblongis ellipticisque atronitidis, $0.54\text{--}1.30 \times 0.26\text{--}0.34$ mm., longitudinali incisura aperientibus; hysterotheciis in transversali sectione in medio subcuticularibus sed ad marginem subepidermalibus, $0.16\text{--}0.22$ mm. profundis; basilari plectenchymate achroö $20\text{--}35\ \mu$ crasso; tegente strato atri pseudoparenchymatis $28\text{--}34\ \mu$ crasso; hymenio $100\text{--}110\ \mu$ crasso. Ascis latis fusiformibusque octosporis $87\text{--}102 \times 18\text{--}24\ \mu$. Paraphysibus $100\text{--}110 \times 1\ \mu$ simplicibus filiformibus mucro involutis. Ascosporis clavatis fusiformibusque ad basin attenuatis hyalinis $35\text{--}56 \times 3.5\text{--}5.0\ \mu$, mucro $8\ \mu$ crasso involutis.

In foliis *Pini pumilae* Regel, in monte Kuro-dake, provinciae Ishikari Japoniae, mense Augusto, 1927, *Naohide Hiratsuka* legit.

Hysterothecia in a more or less continuous row, epiphyllous, oblong and elliptical, shining black, $0.54\text{--}1.30 \times 0.26\text{--}0.34$ mm., opening by a longitudinal fissure; hysterothecia in cross section subcuticular in the middle but subepidermal at margins, $0.16\text{--}0.22$ mm. deep (closed); basal layer colorless, plectenchymatous, $20\text{--}35\ \mu$ thick; covering layer of dark pseudoparenchyma $28\text{--}34\ \mu$ thick; hymenium $100\text{--}110\ \mu$ thick. Asci broad, somewhat fusiform, truncate to rounded at maturity at tip, 8-spored, $87\text{--}102 \times 18\text{--}24\ \mu$. Paraphyses $100\text{--}110 \times 1\ \mu$, simple,

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HYPODERMELLA HIRATSUKAE Darker.

filiform, surrounded by a delicate gelatinous sheath. Ascospores clavate fusiform, tapering towards the base, hyaline, $36-56 \times 3.5-5.0 \mu$, surrounded by a conspicuous gelatinous sheath up to 8μ thick.

On needles of *Pinus pumila* Regel, Mt. Kuro-dake, Province Ishikari, Japan, August 12, 1927, collected by Naohide Hiratsuka.

Hypodermella Hiratsukae is of special interest because of certain morphological resemblances to *Hypodermella Laricis* v. Tub., the type species of the genus. As previously pointed out by the writer in 1932, the species of *Hypodermella* fall readily into four easily recognized groups named after the first described species in each as follows: (a) *H. Laricis* group, (b) *H. ampla* group, (c) *H. nervisequia* group, and (d) *H. sulcigena* group. Of nineteen species recognized in the genus, *H. Hiratsukae* approaches most closely *H. Laricis*, hitherto the only species in that group. The linear arrangement of the hysterothecia, the broad clavate asci and ascospores and the absence of a slit band along which the hysterothecium ruptures are common to both species. The position of the fruiting body of *H. Laricis* in the host tissue is difficult to determine even in microtome sections but is considered to be subcuticular by the writer. In the new species the hysterothecia are subcuticular in the centre and subepidermal at the margins as in *Lophodermium pinastri*. A prominently developed slit band, however, is characteristic of *L. pinastri*. Pycnidia with spores of the microconidial or spermatial type which are conspicuous and abundantly formed in the life cycle of *H. Laricis* are unknown in the case of *H. Hiratsukae* although in the material examined there are present certain small blister-like areas between the hysterothecia which may represent the remains of pycnidia.

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DESCRIPTION OF PLATE 154

Fig. 1-4. *Hypodermella Hiratsukae*, sp. nov., on *Pinus pumila* Regel.

1. Portion of needle with hysterothecia ($\times 17$).
2. Ascus and paraphyses ($\times 500$).
3. Ascospores ($\times 500$).
4. Hysterothecium in cross-sectional view ($\times 270$ approx.).

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