

Annulohypoxyton bovei (Speg.) Y.-M. Ju, J.D. Rogers & H.-M. Hsieh – AEB 1240 (= PDD 110482) – See Hsieh H-M, Ju Y-M & Rogers J.D. 2005. Molecular phylogeny of *Hypoxyton* and closely related genera. *Mycologia* 97(4): 844-865. In this reference they propose placing the taxa assigned to *Hypoxyton* sect. *Annulata* in a new genus, for which the name *Annulohypoxyton* is given.

Substrate: dead unidentified bark/wood

Collection site: C.L. Pemberton Memorial Reserve

Collection date: 18 May 2015, while attending the 29th annual NZ Fungus Foray at Sixtus Lodge

Collector & Identifier: Dan Mahoney

Voucher material: Dried herbarium material AEB 1240 (= PDD 110482) accompanied by 2 Shear's mounting fluid (SMF) semi-permanent slide mounts; several digitized photos of in-situ stromata and their water & Shear's mounting fluid (SMF) slide-mounted centrum contents; Dan's brief description and comments

Brief description: **<10 conspicuous stroma-covered uniperitheciate mounds** grouped together in numerous pulvinate masses. **Perithecia** globular, black with a flattened top (ostiole disc) at the center of which is a shiny-black conically-papillate ostiole papilla with a tiny exit point at its apex. Individual perithecial mounds 1–1.5 mm in diam and covered with a thin, brownish granular stroma. **Asci** 8-spored (occasionally 4-spored) with a longish stipe and an apical ring that is very faintly blue staining in Melzer's reagent. **Paraphyses** numerous, simple, longer than asci, tapering somewhat apically. **Ascospores** uniseriately arranged, brown, smooth, 1-celled, inequilaterally ellipsoidal (plano-convex to concavo-convex) to symmetrically ellipsoid depending on the rotational view. Germ slit straight, longitudinal and centrally-located in symmetrically ellipsoid views – length variable but not reaching the spore extremity. Ascospores (9–)11–11.5(–12) X 4.5–5.5(–7) µm. **Perispores** dehiscent in 10% KOH. **No anamorph was seen.**

Comments: The next 2 pages are copied from Ju and Roger's online key to the Xylariaceae (last updated in 2002) - a valuable reference despite treating *Annulohypoxyton* species in the *Annulata* section of *Hypoxyton* and omitting more recently described species.

An additional NZ record was collected, recorded and photographed by Steve Kerr (identified by Jerry Cooper). Its record and photos are reproduced following the 2 pages from Ju & Rogers, 2002.

Regrettably, I originally identified AEB 1240 as *Rosellinia stenasca* based principally on the size & shape of the ascospores. Having since seen and identified a collection by John Steel [AEB 1327 (= PDD 117265)] in 2019, however, I immediately saw my error and am correcting it here. For more extensive comments on the literature surrounding *Annulohypoxyton* and *A. bovei*, the reader is referred to my pdf in the Datastore which can be accessed under the PDD 'External Link' entry for PDD 117265.

Online reference: [Xylariaceae: Home – Mycology mycology.sinica.edu.tw/Xylariaceae/](http://mycology.sinica.edu.tw/Xylariaceae/)

Xylariaceae is one of the most commonly encountered groups... try our **KEY TO THE GENERA**
From the synoptic key provided, I have selected those choices that led to *Annulohypoxylon bovei* only.
Entry choices in black match *A. bovei* while those in red are those I observed or didn't record.

You have selected:

| | |
|-----------------------------------|--|
| Home of Xylariaceae | stromatal shape: pulvinate to effused-pulvinate |
| Genus Hypoxylon | stromatal KOH pigments: purplish not recorded |
| Accepted Taxa of Section Annulata | stromatal surface color: blackish brownish over perithecial mounds |
| List of Names | stromatal thickness: less than 2.5 mm |
| | substrates: dicots |
| | perithecial mounds: moderate to absent, reasonably conspicuous |
| Comments and Questions: | ostiolar disc diameter: larger than 0.5 mm |
| Jack D. Rogers | ostiolar disc rim: lower than disc surface |
| Yu-Ming Ju | ascospore equality: conspicuously inequilateral |
| Michael J. Adams | ascospore flatness: non-flattened |
| | ascospore epispore ornamentation: smooth |
| | ascospore length: 11-13 μ m |
| | ascospore germ slit morphology: less than to much less than spore-length – variable with some appearing nearly spore length |
| | ascospore perispore dehiscence: dehiscent |

You have got only one species left!

***Hypoxylon bovei* Speg. = *Annulohypoxylon bovei* (Speg.) Y.-M. Ju, J.D. Rogers & H.-M. Hsieh**
See the next page for their 2002 online teleomorph description.

Last updated 2002

TELEOMORPH | CULTURES AND ANAMORPH | SPECIMENS EXAMINED | NOTES

Hypoxylon bovei Speg., Bol. Acad. Nac. Ci. 11: 201. 1887.

= *Hypoxylon ophthalmidium* Mont. apud C. Gay, Fl. Chilena VII, p. 445. 1850; [nom. inval., ICBN Art. 34.1 (b)].

= ? *Hypoxylon annulatum* var. *patagoniensis* Henn., Öfvers. Förh. Kongl. Svenska Vetensk. Akad. 1900: 327. 1900.

Stromata pulvinate, containing fewer than ten perithecia, slightly constricted at base, with perithecial mounds inconspicuous to 1/3 exposed, 1-5 mm diam x 1 mm thick; surface dark brown, with olivaceous tone, usually granulose; blackish woody tissue immediately beneath surface, without apparent KOH-extractable pigments; the tissue below the perithecial layer inconspicuous.

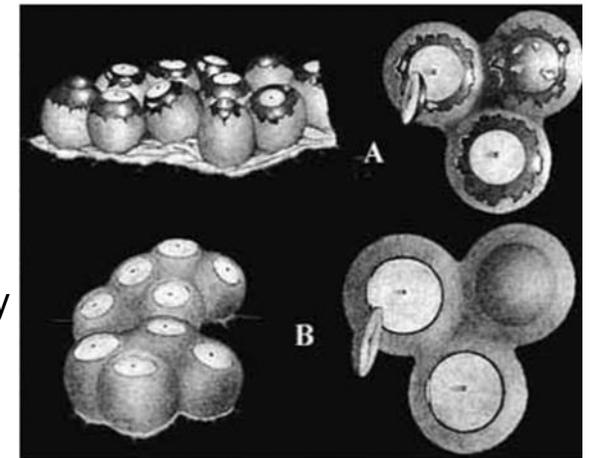
Perithecia spherical, 0.7-1 mm diam.

Ostioles papillate, encircled with a bovei-type disc 0.5-0.7 mm diam. **Bovei-type disc** formation differs from truncatum-type disc formation in having the outermost layer of stroma around ostioles dehisces abruptly. The bovei-type disc formation was described in detail by Tsuneda and Arita (1984).

Asci 170-200 µm total length x 8-9 µm broad, the spore-bearing parts 80-100 µm long, the stipes 70-105 µm long, with apical ring bluing in Melzer's iodine reagent, discoid, 1-1.5 µm high x 2.5-3 µm broad.

Ascospores brown to dark brown, unicellular, ellipsoid-inequilateral, with narrowly rounded ends, 10.5-13 (-14) x 5-6.5 µm, with straight germ slit less than spore-length; perispore dehiscent in 10% KOH, smooth; episporium smooth.

NOTES: *Hypoxylon bovei* is highly associated with *Nothofagus*. It probably is associated with *Nothofagus* throughout the range of the genus. The stromata are noteworthy in being restrictedly pulvinate and containing only a few perithecia. Miller (1961) separated *H. bovei* from other members of section *Annulata* with pulvinate stromata mainly by using the size of ostiolar discs, 0.7-1 mm diam. However, our measurements of the ostiolar discs give a smaller range, 0.5-0.7 mm diam, thus overlapping with that of *H. bovei* var. *microspora*.



A: *Hypoxylon nitens*. B: *H. bovei*.

iNaturalist Research Grade Observations

Catalog #: 1008351

Taxon: *Annulohyoxylon bovei* (Speg.) Y.M. Ju, J.D. Rogers & H.M. Hsieh

Family: Hypoxylaceae

Collector: Steve Kerr

Date: 2014-07-11

Verbatim Date: July 11, 2014

Locality: New Zealand, Otago, Dunedin - Woodhaugh Gardens
-45.853552 170.51014

Georeference Remarks:

COORDINATE_ROUNDED;GEODETTIC_DATUM_ASSUMED_WGS84

Description: [Original observation #1008351 \(iNaturalist\)](#)

Occurrence Remarks: Xylariaceae: Hypoxylon bovei

Specimen Images **EXCELLENT**

Usage Rights: [CC BY-NC-ND 4.0 \(Attribution-NonCommercial-NoDerivatives 4.0 International\)](#)

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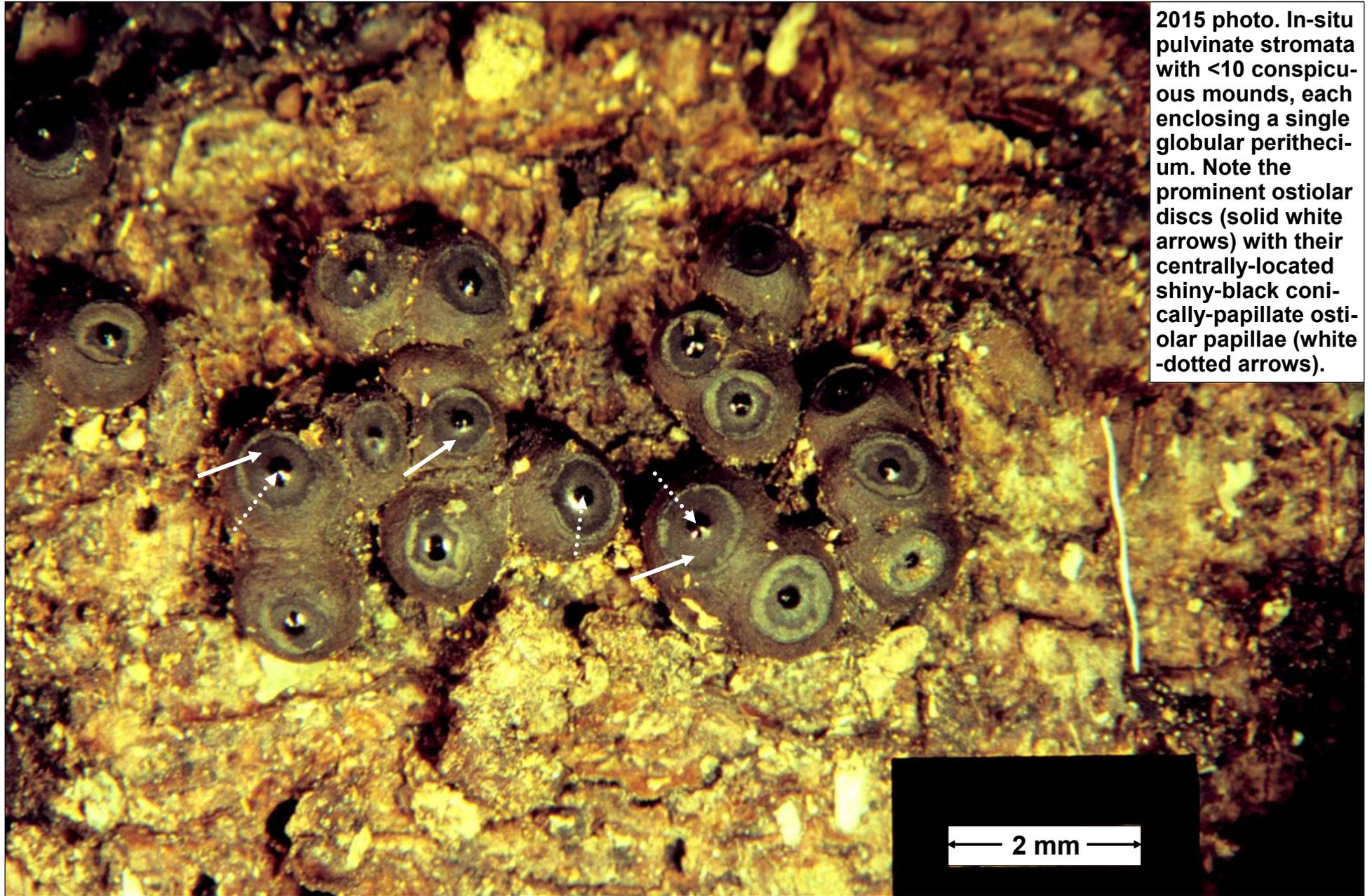
Record Id: 843b1bbb-b78c-4843-a273-c37aa5110a63

Occurrence ID (GUID): <http://naturewatch.org.nz/observations/412556>

For additional information on this occurrence, please contact: [Ken-ichi Ueda \(help@inaturalist.org\)](mailto:Ken-ichi.Ueda@inaturalist.org)

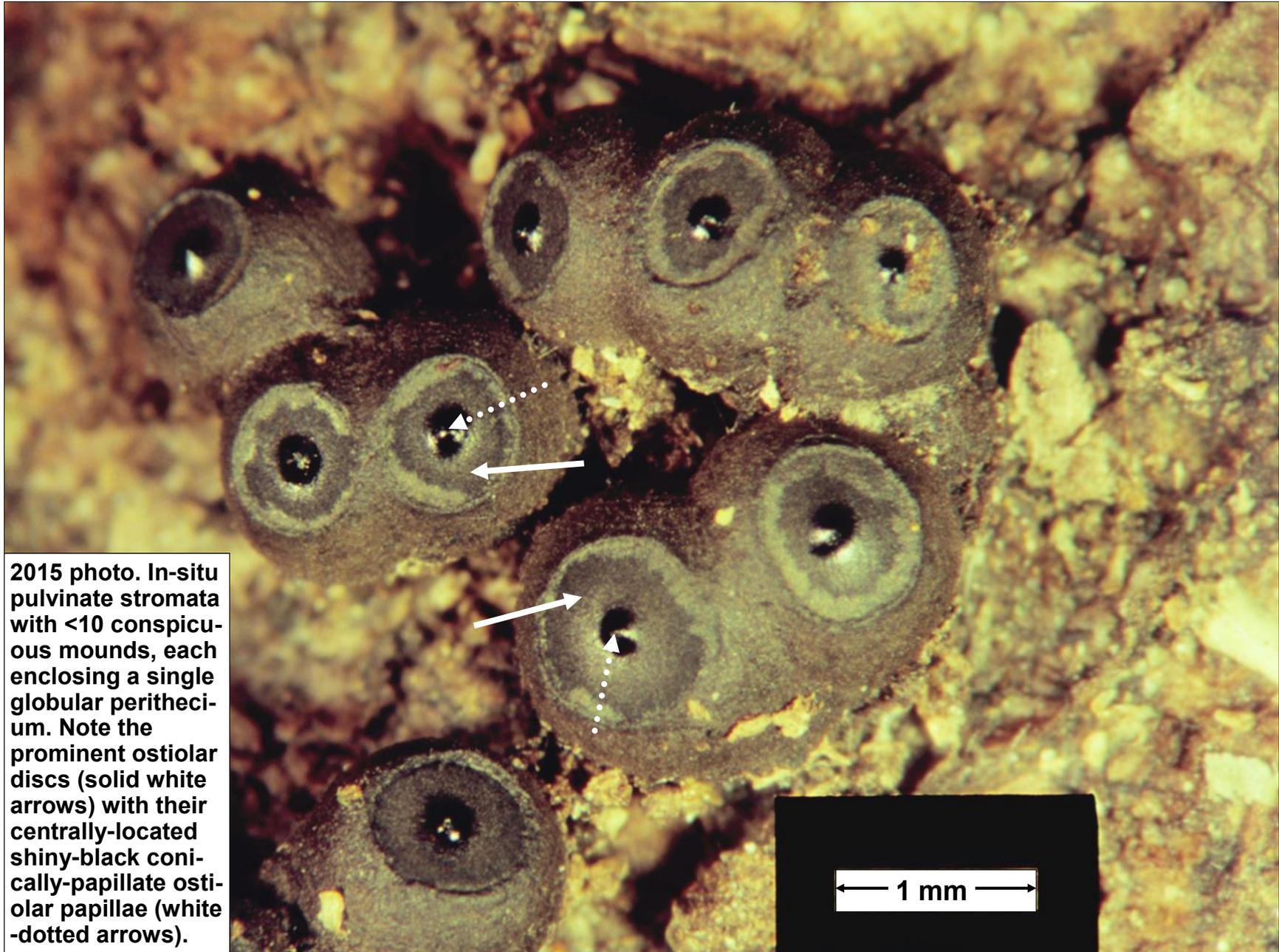
Identification by Jerry Cooper as *Annulohyoxylon bovei* and uploaded as such by Steve Kerr





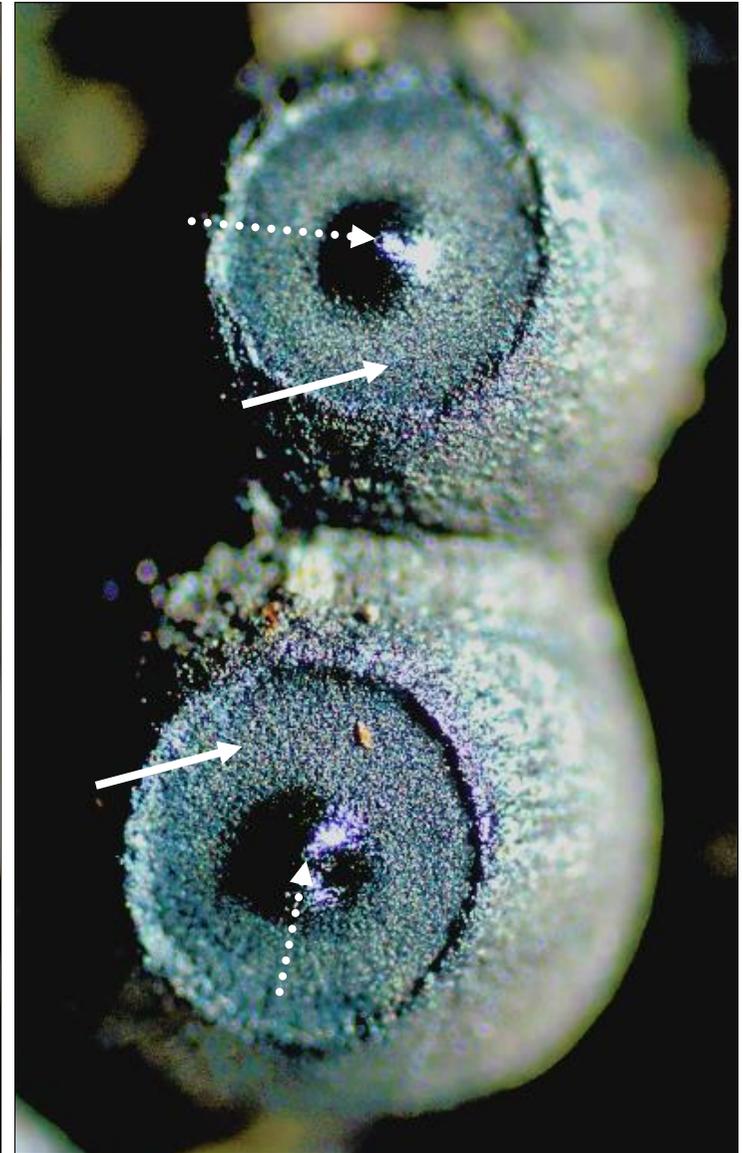
2015 photo. In-situ pulvinate stromata with <10 conspicuous mounds, each enclosing a single globular peritheci-um. Note the prominent ostiolar discs (solid white arrows) with their centrally-located shiny-black conically-papillate ostiolar papillae (white-dotted arrows).

← 2 mm →

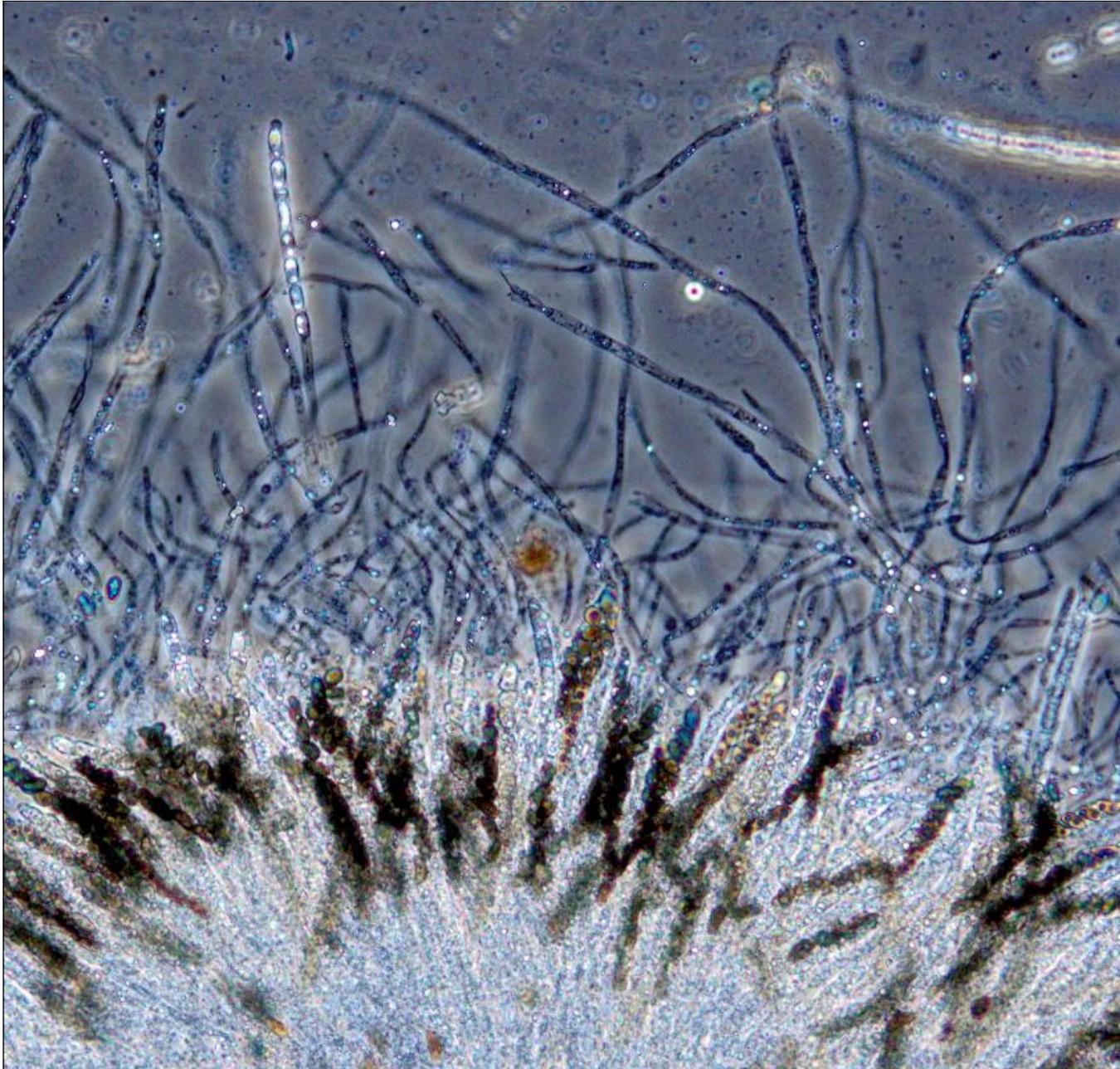


2015 photo. In-situ pulvinate stromata with <10 conspicuous mounds, each enclosing a single globular perithecium. Note the prominent ostiolar discs (solid white arrows) with their centrally-located shiny-black conically-papillate ostiolar papillae (white-dotted arrows).

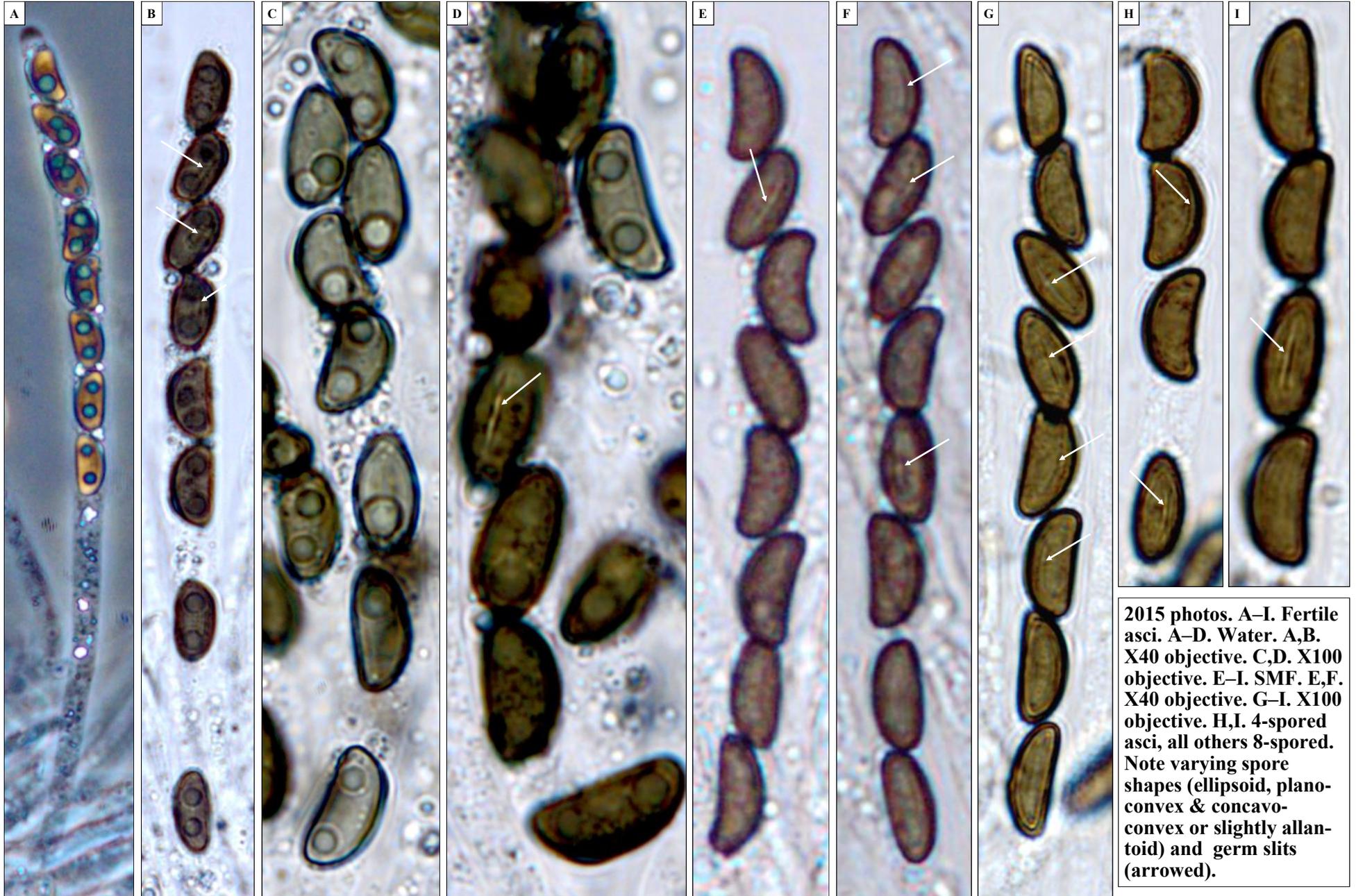
← 1 mm →



2020 photos. Left photo. In-situ pulvinate stromata with <10 conspicuous mounds, each enclosing a single globular perithecium. Right photo. Two mounds emphasizing the prominent ostiolar discs (solid white arrows) – overall, 0.6–0.8 mm in diam, with their centrally-located shiny-black conically-papillate ostiolar papillae and tiny ostioles (white dotted arrows).

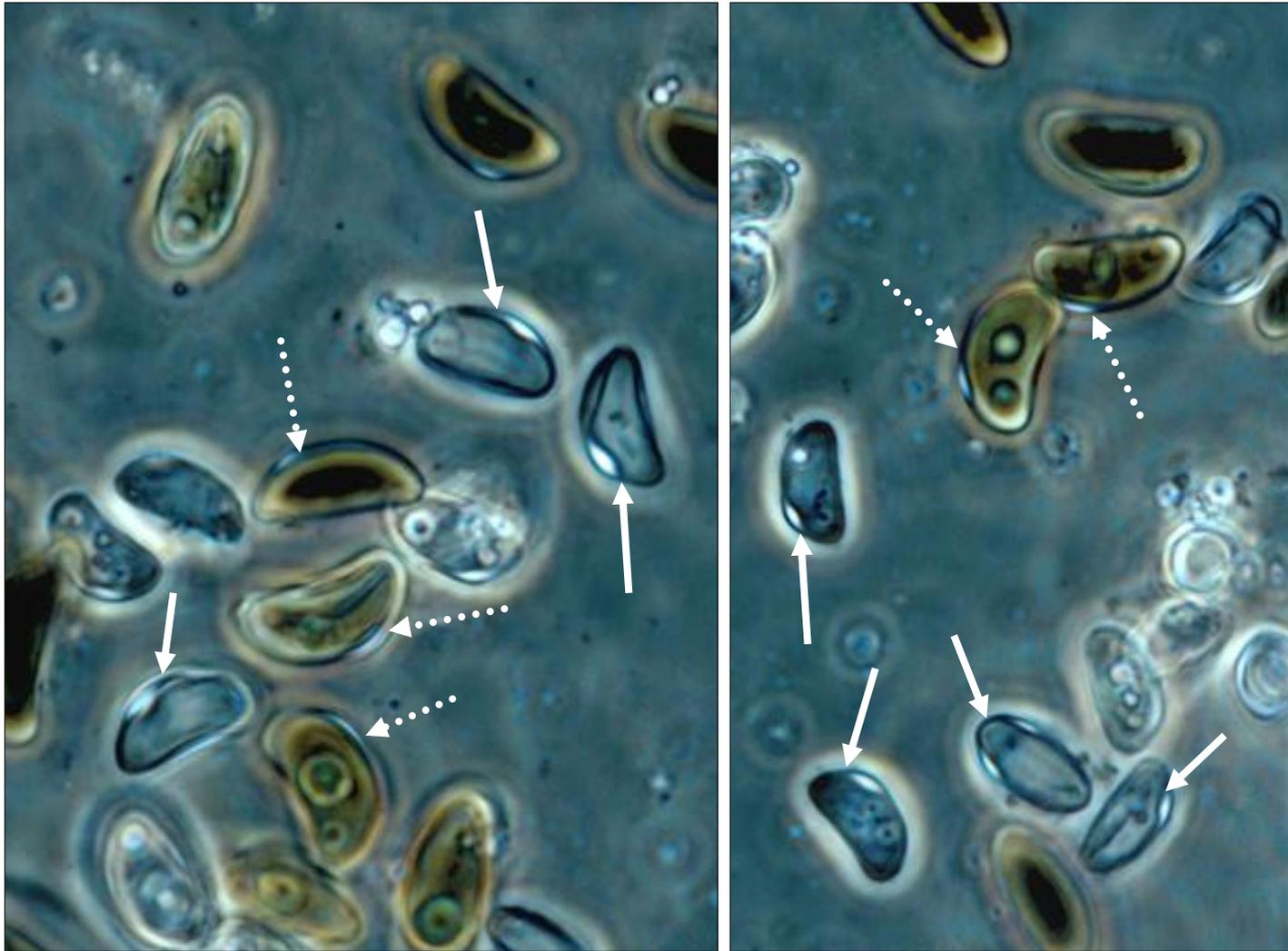


2015 photo. Hymenial squash, emphasis paraphyses. Water mount, X20 objective, phase microscopy.





A–F. Ascospores & asci, photos Oct. 2020. A,B. Water mts. A. Note spore shapes, germ slits & large vacuoles. X100 obj., brightfield. B. Young ascus 170×7 μm (spore portion 85 μm). X20 obj., phase. C–F. Mature asci. SMF mts., X40 obj., phase. C. Ascus 125 μm long (spore portion 85 μm). D. Ascus 125 μm long (spore portion 77.5 μm). E. Ascus spore portion 82.5 μm long. F. Ascus with 4 maturing spores.



2020 photo. Free perispores (perispore = ascospore's covering), smooth, hyaline and bearing a wall thickening at ca. $\frac{1}{3}$ ascospore length (solid white arrows) and ascospores with their perispore still intact (white-dotted arrows). A small hymenial fragment with fertile asci was mounted in water, the coverslip pressed to spread the asci and release some spores and then 10% KOH added at the coverslip edge. As the KOH diffused among the asci and spores, the perispores literally popped off.