***Lasiobolus ciliatus* (J.C. Schmidt) Boud. – PDD 121655 (= AEB 1365)**

Collections: **1.** 3 November 2023; **Incubated in moist chamber:** 6 February 2024

2. 13 July 2024; **Incubated in moist chamber:** 29 July 2024

Substrates: **1.** Hereford-Galaway cross beef cattle dung

2. horse dung

Collection sites: **1.** NZTM grid ref. E1770110 N5447412 , a residential property surrounded by native bush off Moonshine Hill Road, Upper Hutt

2. Remutaka Forest Park

Collectors: **1.** Ian Flux & Merryl Park; **Identifiers:** Ann Bell & Dan Mahoney

2. Ann Bell; **Identifier:** Dan Mahoney

Voucher materials: no dried herbarium specimens but 3 Shear's mounting fluid (SMF) semi-permanent microscope slides from the cattle dung collection; dissecting scope photos of fresh apothecia on the incubating cattle dung & Olympus BX51 compound scope microscopic detail photos using a DP28 camera for both the cattle & horse dung; pertinent references. No voucher materials were prepared for the horse dung

Addendum: Also recorded from Toggenberg milking goat dung collected on the same date & collection site as the cattle dung, by the same collectors. See its in-situ photo on the 4th page of this pdf. No dried specimen or semi-permanent slide voucher materials were prepared.

Pertinent references consulted:

1. Bezerra J.L. & J.W. Kimbrough. 1975. The genus *Lasiobolus* (Pezizales, Ascomycetes). Can. J. Bot. 53: 1206-1229.
See the next 2 pages for their key to *Lasiobolus* species and the description and illustrations of *L. ciliatus*.
2. '*Lasiobolus ciliatus* online photos by Enrique Rubio' online

Bezerra J.L. & J.W. Kimbrough. 1975. The genus *Lasiobolus* (Pezizales, Ascomycetes). Can. J. Bot. 53: 1206-1229.

See portions of page 1213 below. The description and illustrations of *L. ciliatus* are found on the next page.

KEY TO THE SPECIES OF LASIOBOLUS

A. Asci eight-spored C
A. Asci containing more than eight spores . . . . . B

B. Apothecia multiascal . . . . . *L. cainii* (1)
B. Apothecia uniascal . . . . . *L. monascus* (9)

C. Ascospores longer than 20 µ . . . . . G
C. Ascospores shorter than 20 µ . . . . . D

D. Setae cylindrical acicular . . . . . E
D. Setae subventricose at the base . . . . . F

E. Ascospores 13–18 × 9–13.5 µ, ectal cells horizontally oriented . . . . . *L. lasioboloides* (6)
E. Ascospores 8.5–11.5 × 6–9 µ, ectal cells vertically oriented . . . . . *L. trichoboloides* (11)

F. Ascospores 13–18 × 7.5–11.5 µ, setae usually smooth . . . . . *L. intermedius* (5)
F. Ascospores 9–11 × 6.6–8.0 µ, setae always with cyanophilic markings . . . . . *L. microsporus* (8)

G. Setae 600 µ long or more . . . . . H
G. Setae less than 600 µ long I

H. Ascospores 15–23 × 6–13 µ, narrow ellipsoidal, asci cylindrical . . . . . *L. macrotrichus* (7)
H. Ascospores 22–30 × 9–13.5 µ, subfusiform, asci clavate . . . . . *L. ruber* (10)

I. Ascospores 24–34 × 12–19 µ, becoming yellowish when mature . . . . . *L. diversisporus* (4)
I. Ascospores smaller, 18–24 × 12–14 µ, remaining hyaline . . . . . H

H. Asci broadly clavate, setae subventricose, up to 24 µ diam at the base . . . . . *L. cuniculi* (3)
H. Asci cylindrical or clavate cylindrical, setae ventricose, up to 42 µ at the base . . . . . *L. ciliatus* (2)

Bezerra J.L. & J.W. Kimbrough. 1975. The genus *Lasiobolus* (Pezizales, Ascomycetes). Can. J. Bot. 53: 1206-1229.

The description and illustrations of *L. ciliatus from* pages 1214 & 1215 are shown below.

Lasiobolus ciliatus (Schmidt ex Pers.) Boud., Hist. Class. Discom. Eur. 78. 1907. Fig. 2

Apothecia gregarious, sessile, 300-750(-900) µm diam. Disc flat or convex, rough, from light yellowish to orange. Receptacle at first globose, then turbinate, and finally cupulate or shallow funnel-shaped, of the same color or paler than the disc, setose; anchoring hyphae subhyaline or yellowish, non-septate, unbranched, 2-5 µm diam. **Setae** arising from the lower and median part of the receptacle, non-septate, stiff, pointed, distinctly ventricose at their bases, 200-600 µm long by (12-)20-42 µm diam, at the widest part; walls smooth, Congo red positive, 3-6 µm thick. **Ectal excipulum** 10-17 µm thick around the hymenium, of angular, lobed, elongated, 5-24 x 2-9 µm, horizontally oriented cells, a textura epidermoidea; the ectal excipulum becomes thicker, 30-50 µm thick, towards the base of the receptacle, of angular, isodiametric cells, 10-20 µm diam, a textura angularis. Medullary excipulum of narrower, hyaline, cells. Subhymenium inconspicuous. Hymenium multiascal about 200 µm thick. **Asci** clavate cylindrical, rounded or truncate above, attenuated below into a stalk, (112-)180-270 x 15-30 µm, eight-spored. **Ascospores** uniseriate or biseriate, hyaline, ellipsoidal, rounded at both ends, smooth-walled, (17–)19–25 x (9–)12–14 (–15) µm, each with a prominent deBary bubble. **Paraphyses** hyaline, filiform, septate, branched, 2-2.5 µm diam below, slightly inflated to 2.5 -3.5 µm at their apices.

H A B I T A T: On various kinds of dung, including human feces.

N A M E: Referring to the setose apothecia.

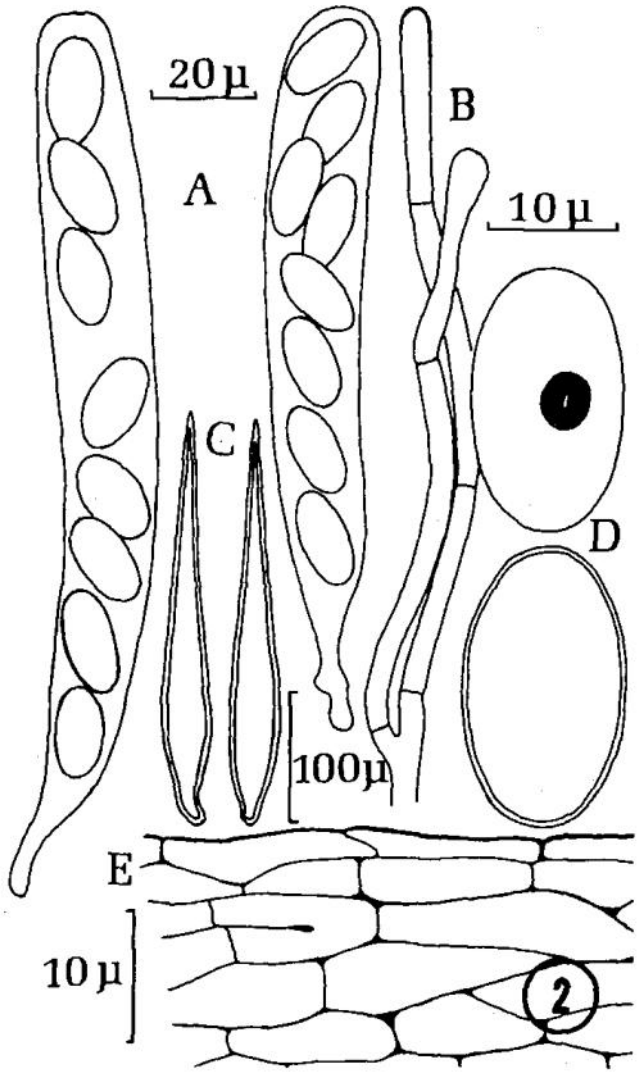
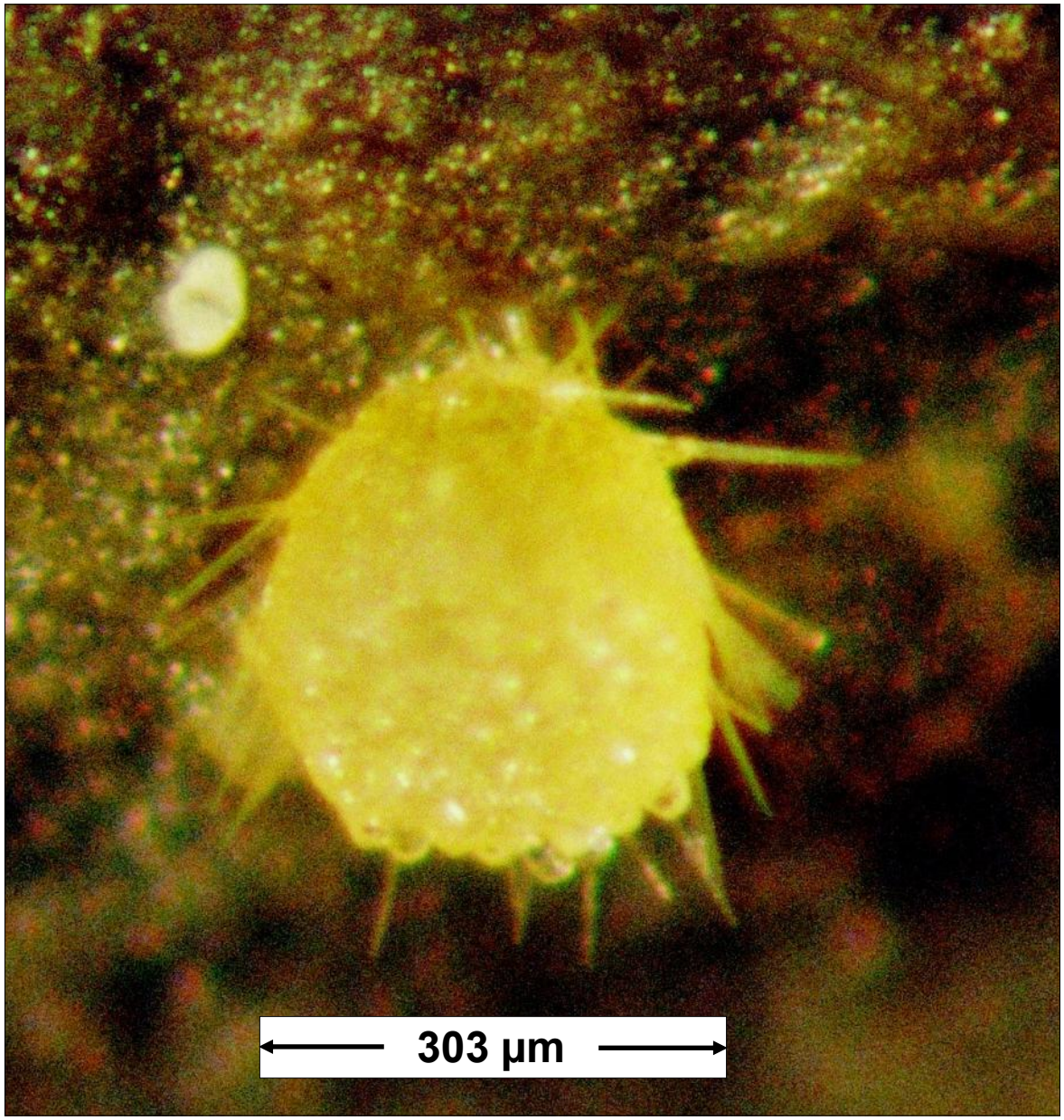
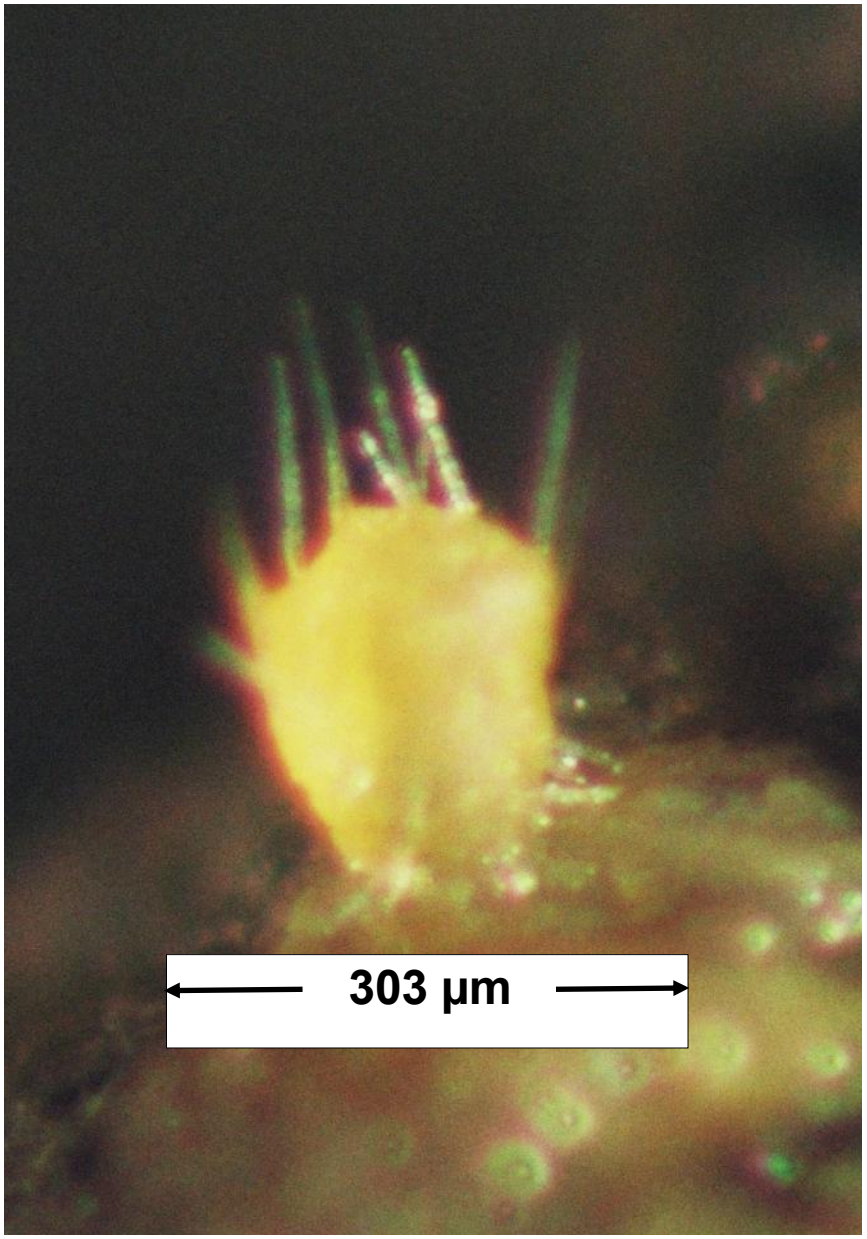


FIG. 2. *Lasiobolus ciliatus*. A. Asci and ascospores. B. Branched paraphysis. C. Setae. D. Ascospores, one with a deBary bubble. E. Ectal cells.



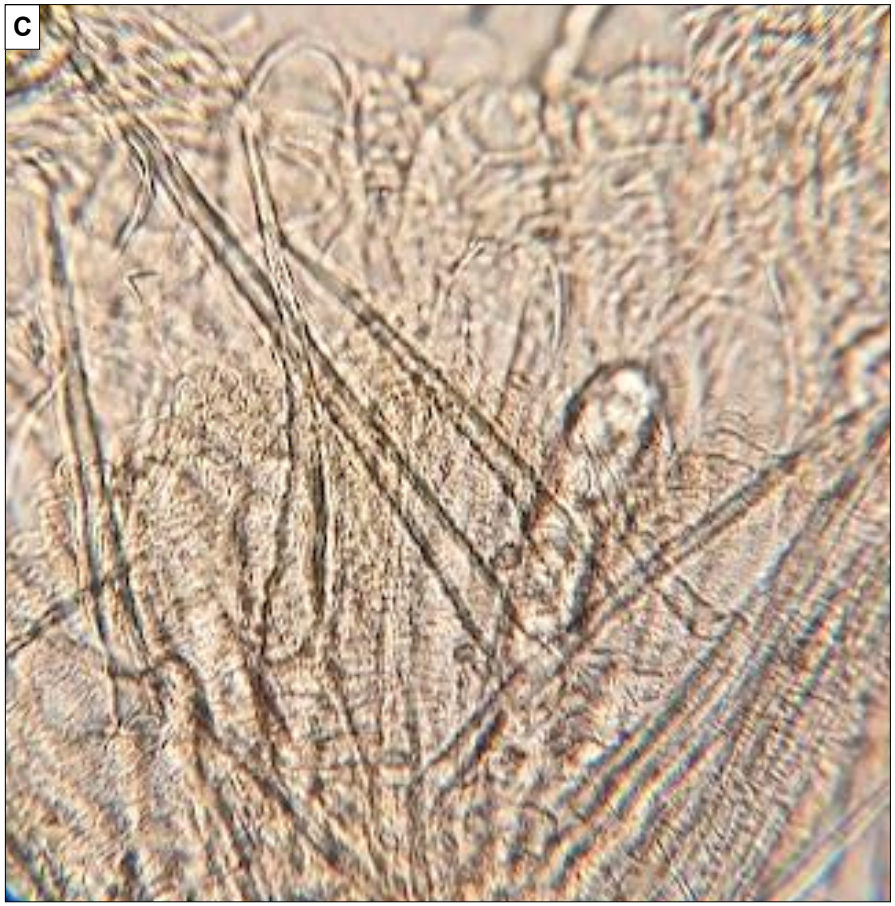
Goat dung collection. In-situ view of a fresh apothecium on the incubating dung.



Cattle dung collection. In-situ view of a fresh apothecium on the incubating dung.

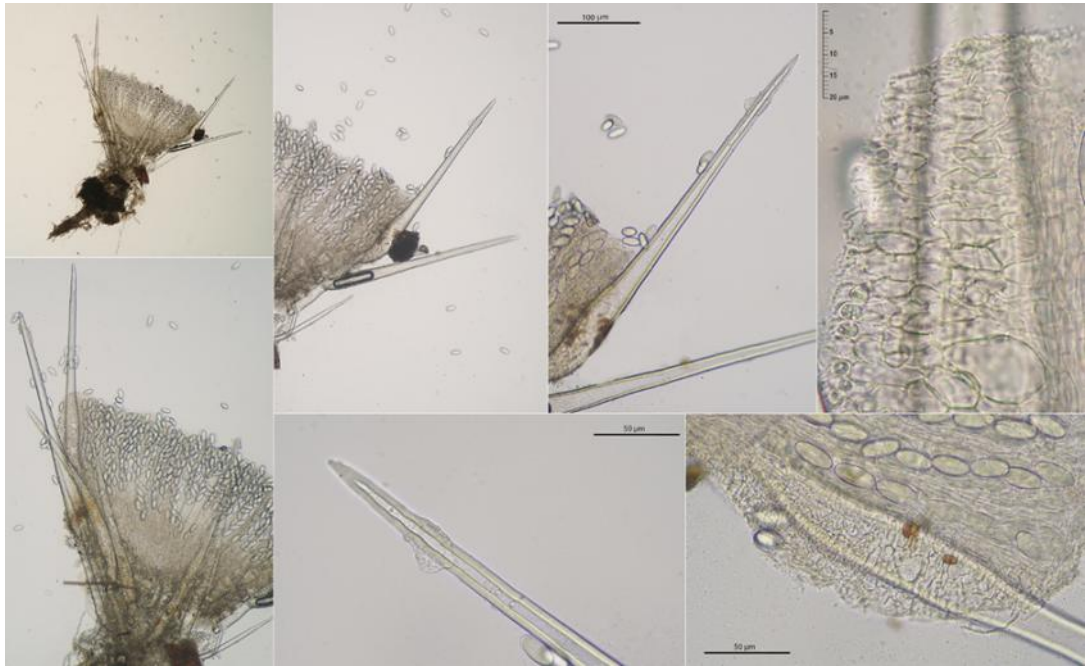
A–E. Cattle dung collection. Water slide mounts using a Samsung Galaxy A70 smartphone camera attached to & replacing the eyepiece of an Olympus BX51 compound microscope. A–C. A setose apothecium with fertile asci extending. D–E. The same fertile ascus (brightfield, left photo & phase, right field).

A–D. Cattle dung collection. A–B. Water slide mounts repeated from the previous page. C–D. SMF slide mounts emphasizing the apothecium setae using a Samsung Galaxy A70 smartphone camera attached to & replacing the eyepiece of an Olympus BX51 compound microscope.



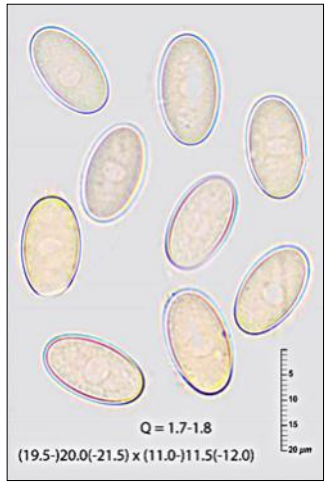
***Lasiobolus ciliatus*. Lloroñi (Colunga-Asturias), 27-XI-2020, cow dung. Photo: Enrique Rubio.**

***Lasiobolus ciliatus*. Lloroñi (Colunga-Asturias), 27-XI-2020, cow dung. Photo: Enrique Rubio.**

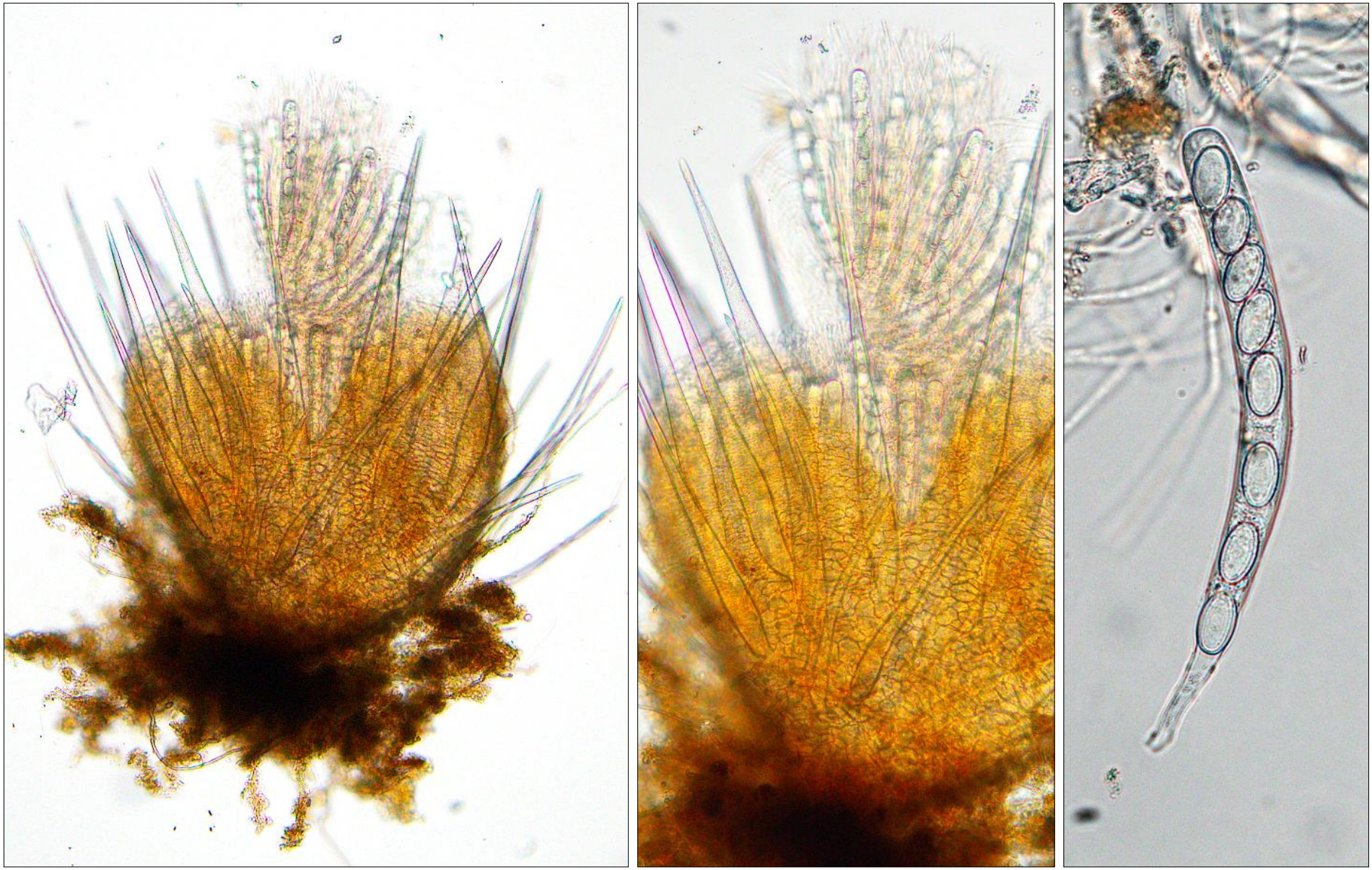


***Lasiobolus ciliatus*. Lloroñi (Colunga-Asturias), 27-XI-2020, cow dung. Photo: Enrique Rubio.**

***Lasiobolus ciliatus*. Spores x 1,000. Photo: Enrique Rubio.**



Lasiobolus ciliatus online photos by Enrique Rubio



Horse dung collection. Photos 5 August 2024 from water mounts of setose apothecia and a fertile ascus as seen from material on the incubating dung. Left photo: X10 objective. Middle photo: X20 obj. (closeup of left photo). Right photo: X40 obj. – ascus 200 × 17.5 µm, ascospores 21 × 12.5 µm.