

groups, from 500–850 μ in diameter. Peridium almost uniform in thickness, from 55–100 μ , outermost darker and thicker than inner, made up of polygonal cells, 9–13 μ in diameter, sometimes elongated up to 29 μ .

HYPOSTROMA: Rather poorly developed, a subiculum of dark-brown interwoven hyphae dense below the fruit body, sparse on sides.

ASCI: Characteristically short stipitate, 2–8 spored, predominantly 8, spores overlapping or uniseriately arranged; from 170–290 \times 16–18 μ in size.

SPORES: Light- to dark-olive-brown, ends obtuse, prominently constricted at middle septum, also at others with almost the same intensity, transverse septa 5–7, darker in colour, mostly 7, longitudinal septa usually 1 or 2 sometimes up to 3, continuous or discontinuous, from 30–37 \times 11–13 μ in size (Pl. VIII – fig. 1, and Pl. XIV – fig. 3).

IMPERFECT STAGE: The only informations available on the pycnidial stage of this fungus come from ROSTRUP (1913) and WINTER (1903) who report *Diplodia Coluteae* SCHNABL.

WELCH (1926) made this fungus a synonym of *Cucurbitaria elongata* (FRIES) GREV. Microscopic examination has revealed that it, however, has no similarity with *C. elongata*; in fruit body structure the fungus is close to *C. spartii*, from which it can be distinguished on the basis of an overall remarkably large size and dark septate spores (frequently-constricted) in the case of *C. coluteae*.

GEOGRAPHICAL DISTRIBUTION: Central Europe.

CUCURBITARIA SPARTII (NEES ex FRIES) CES. et DE NOT.

Comm. Soc. Critt. Ital. 1, p. 214 (1863)

Synonyms: *Sphaeria spartii* NEES ex FRIES – Syst. Myc. 2, p. 424 (1823).

Cucurbitaria spartii CES. et DE NOT. – Comm. Soc. Critt. Ital. 1, p. 214 (1863).

Gibberidea spartii O. KUNTZE – Rev. Gen. Plant 3^e, p. 481 (1898).

Cucurbitaria spartii fa. *Genistae tinctoriae* FUECKEL – Symb. Myc. 2, p. 32 (1873).

MATRIX: On dead branches of *Sarothamnus scoparius* (L.) WIMMER, *Genista tinctoria* L. and *Cytisus capitatus* SCOP.

MATERIAL EXAMINED: F. Petrak, Mycotheca generalis, n. 1909, on *S. scoparius* from Hungary, Budapest, leg. G. VON MOESZ, in Mai 1920. – On *S. scoparius* from Switzerland, Kt. Tessin, Monte Generoso, leg. F. MIRZA, in May 1966 (= ETH Culture Collection, n. 7019). – On *Cytisus capitatus* as *Cucurbitaria laburni* (PERS. ex FRIES) CES. et DE NOT.: F. Petrak, Mycotheca generalis, n. 1944, from Germany, Brandenburg, Tamsel, Baumschulen, leg. P. VOGEL, in May 1929.

FRUIT-BODIES: Mostly produced singly, also in small groups of 2–4, remaining below the bark, later erumpent by a prominently short papilla bearing ostiole, globose to rarely subglobose, from 380–670 μ in diameter. Peridium rather uniform in thickness from 45–96 μ , outermost comparatively darker and thick walled becoming lighter and thin walled towards inside, made up of polygonal cells 14–24 μ in diameter.

HYPOSTROMA: Poorly developed, a subiculum sometimes reduced to a momentum of interwoven brown hyphae rarely involving host tissue, usually from 20–100 μ thick below the fruit bodies.

ASCI: Rather short stipitate, 2–8 spored, predominantly 8, spores uniseriately arranged; from 150–242 \times 14–16 μ in size.

SPORES: Brown with obtuse to rarely subacute ends, prominently constricted at middle septum also at others but never with the same intensity, transverse septa 3–7, mostly 7, longitudinal septa mostly 1, rarely 2, continuous or discontinuous; from 21–35 \times 9–12 μ in size.

CULTURAL CHARACTERISTICS: The ascospores germinated to produce scanty white mycelium (turning to light-grey with age) on 2% malt extract agar; under room conditions the cultures produced a few pycnidia within 6–8 weeks, in total darkness the mycelium remained sterile. The time for pycnidial production was reduced to half if the cultures were incubated in constant light. Germination tests were performed with the microconidia produced in cultures, they germinated readily in 2% malt water with coenocytic germ tubes and subsequently gave rise to normal colonies. Under certain conditions of nutrition and environment (see table 1) the cultures produced perfect fruit bodies; the ascospores were similar to those observed from natural hosts but the fruit bodies were irregularly formed.

PYCNIDIA: Globose to oblong or irregular in form, surface provided with abundant hair-like outgrowths (ostiole not observed), peridium outermost dark and thick walled, innermost thin walled and darkly staining, giving rise to short, septate, sometimes branched conidiophores bearing microconidia; roughly from 300–575 μ in diameter.

MICROCONIDIA: Bacilliform, hyaline, from 4–6 \times 1–2 μ in size (Pl. VIII – fig. 2, Pl. XI – fig. 2, and Pl. XIV – fig. 4).

GEOGRAPHICAL DISTRIBUTION: Europe.

Key to the Species of *C. indigoferae* Group

- Fruit bodies produced in large groups of more than three 2
- Fruit bodies produced singly, never more than three 4

PLATE 70 (2)

(a) Fruit bodies in vertical sections. (b) Asci with spores, $\times 1000$. — Fig. 1. *C. ahmadi*, $\times 100$. Fig. 2. *C. laburni*, $\times 60$.

PLATE 71 (3)

(a) Fruit bodies in vertical sections. (b) Asci with spores, $\times 1000$. — Fig. 1. *C. balimodendri*, $\times 100$. Fig. 2. *C. dulcamarae*, $\times 100$. Fig. 3. *C. elongata*, $\times 60$.

PLATE 72 (4)

(a) Fruit bodies in vertical sections. (b) Asci with spores, $\times 1000$. — Fig. 1. *C. ononidis*, $\times 100$. Fig. 2. *C. acervata*, $\times 100$. Fig. 3. *C. rhamnii*, $\times 100$.

PLATE 73 (5)

(a) Fruit bodies in vertical sections. (b) Asci with spores, $\times 1000$. — Fig. 1. *C. coronillae*, $\times 100$. Fig. 2. *C. negundinis*, $\times 100$. Fig. 3. *C. amorphae*, $\times 100$.

PLATE 74 (6)

(a) Fruit bodies in vertical sections. (b) Asci with spores, $\times 1000$. — Fig. 1. *C. emeri*, $\times 100$. Fig. 2. *C. cytisi*, $\times 100$. Fig. 3. *C. varians*, $\times 100$.

PLATE 75 (7)

(a) Fruit bodies in vertical sections. (b) Asci with spores, $\times 1000$. — Fig. 1. *C. rubefaciens*, $\times 100$. Fig. 2. *C. elaeagni*, $\times 100$. Fig. 3. *C. crataegi*, $\times 200$.

PLATE 76 (8)

(a) Fruit bodies in vertical sections. (b) Asci with spores, $\times 1000$. — Fig. 1. *C. coluteae*, $\times 60$. Fig. 2. *C. spartii*, $\times 100$. Fig. 3. *C. indigoferae*, $\times 200$.

PLATE 77 (9)

(a) Fruit bodies in vertical sections. (b) Asci with spores, $\times 1000$. — Fig. 1. *C. sorbi*, $\times 60$. Fig. 2. *C. alni*, $\times 100$. Fig. 3. *C. ignavis*, $\times 100$.

PLATE 78 (10)

Fig. 1. *C. berberidis* culture pycnidium in vertical section, $\times 500$. Fig. 2 a. *C. ribis* fruit body in vertical section, $\times 200$. Fig. 2 b. *C. ribis* ascus with spores, $\times 1000$. Fig. 3. *C. emeri* culture pycnidium in vertical section, $\times 100$.

PLATE 79 (11)

Fig. 1. *C. ahmadi* culture pycnidium in vertical section, $\times 300$. Fig. 2. *C. spartii* culture microconidia and stages of germination, $\times 4000$. Fig. 3. *C. berberidis* culture microconidia and stages of germination, $\times 4000$. Fig. 4. *C. elongata*

culture conidia, $\times 2000$. Fig. 5. *C. ahmadi* culture conidia, $\times 2000$. Fig. 6. *C. laburni* culture conidia, $\times 2000$. Fig. 7. *C. emeri* culture conidia, $\times 2000$. Fig. 8. *C. coronillae* culture conidia, $\times 2000$. Fig. 9. *C. cytisi* culture conidia, $\times 2000$.

PLATE 80 (12)

Spores, $\times 2000$. — Fig. 1. *C. pilosa*. Fig. 2. *C. berberidis*. Fig. 3. *C. caraganae*. Fig. 4. *C. ahmadi*. Fig. 5. *C. laburni*. Fig. 6. *C. balimodendri*. Fig. 7. *C. dulcamarae*. Fig. 8. *C. elongata*. Fig. 9. *C. ononidis*.

PLATE 81 (13)

Spores, $\times 2000$. — Fig. 1. *C. acervata*. Fig. 2. *C. rhamnii*. Fig. 3. *C. coronillae*. Fig. 4. *C. negundinis*. Fig. 5. *C. amorphae*. Fig. 6. *C. emeri*. Fig. 7. *C. cytisi*. Fig. 8. *C. varians*. Fig. 9. *C. rubefaciens*.

PLATE 82 (14)

Spores, $\times 2000$. — Fig. 1. *C. elaeagni*. Fig. 2. *C. crataegi*. Fig. 3. *C. coluteae*. Fig. 4. *C. spartii*. Fig. 5. *C. sorbi*. Fig. 6. *C. indigoferae*. Fig. 7. *C. alni*. Fig. 8. *C. ribis*. Fig. 9. *C. ignavis*.

Plate-VIII

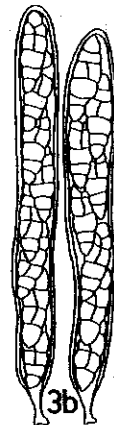
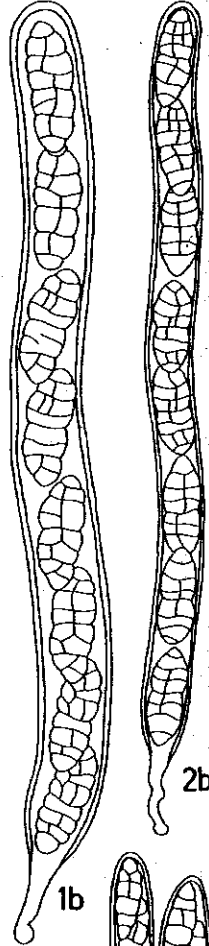
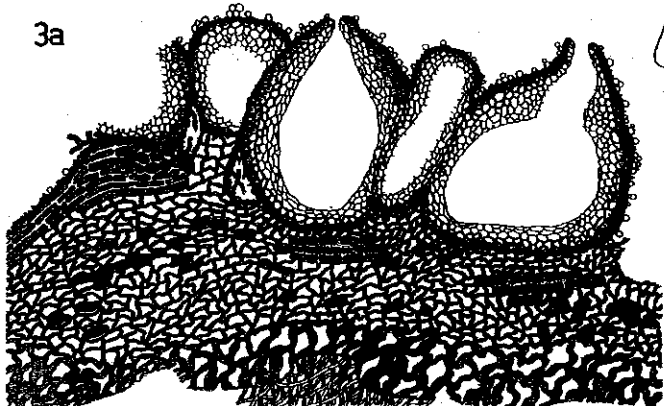
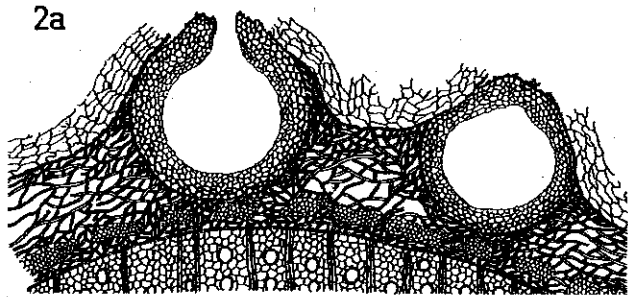
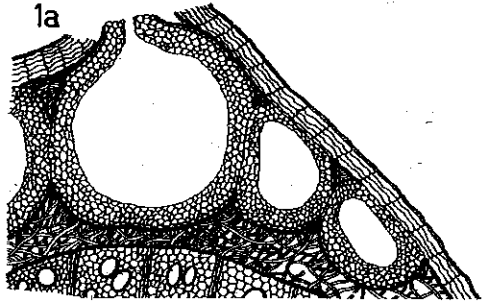


Plate-IX

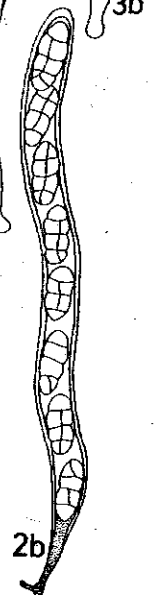
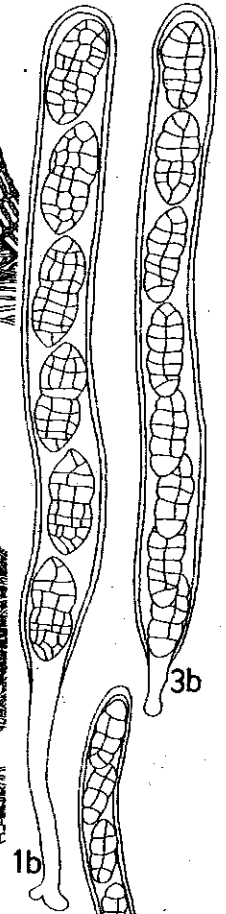
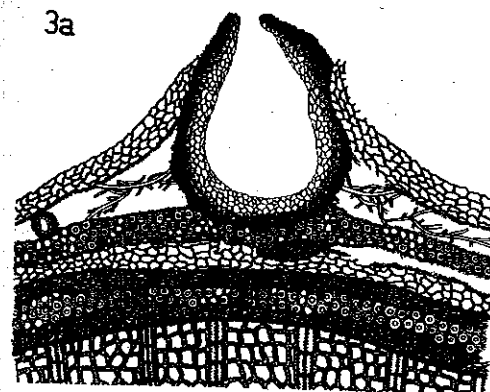
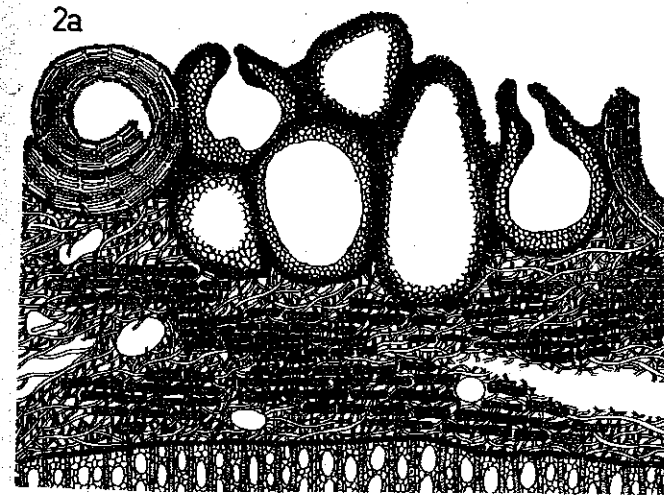
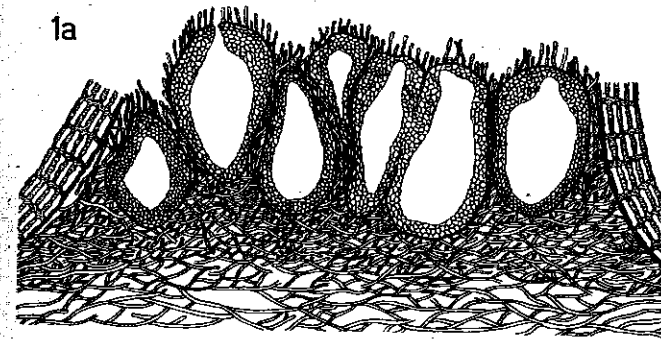


Plate-XIV

