

THE GENUS MORENOINA IN BRITAIN

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The type species of *Morenoina* Theiss. is illustrated; nine new British species and two from Europe, not yet found in Britain, are described. *Aulographum hederæ* is figured for comparison.

Morenoina Theiss. is in the family Asterinaceae, order Hemisphaeriales of the Loculoascomycetes. The genus has the following characters:

Colonies grow on decaying plant debris and are composed of elongated, black, often branched ascomata usually less than 1 mm in length and must be sought with a hand-lens. *Mycelium* superficial, usually fine, and sometimes very sparse and easily rubbed off in older colonies, but may be more robust and quite abundant in a few species. *Thyriothecia* start as small circular radiate shields and develop in two opposite directions to become elongated; sometimes they branch to become Y-shaped, X-shaped or irregularly lobed. There is no hypostroma. *Scutellum* brown, darker towards the centre and composed of radiately-arranged more-or-less rectangular cells. The cells at the margin vary considerably in different species and this character is best seen by reference to the illustrations. The scutellum splits longitudinally at maturity to expose the abundant asci. *Asci* arranged vertically beneath the scutellum with their bases attached to a very thin basal plate which is composed of hyaline or pale brown radially arranged cells mirroring the upper wall. The bitunicate asci are variable in shape, spherical, ovoid or clavate, this often depending on their stage of development, and contain eight variously arranged ascospores. The asci are embedded in a slimy mass and no pseudoparaphyses have been observed.

Ascospores 1-septate, at first hyaline and guttulate, but at maturity often becoming faintly brown, lose their guttules and their walls may become minutely rough; in all cases their ends are rounded and the upper cell is a little wider than the lower one. Conidial states have been observed in three species. *Conidia* produced in circular, radiately scutellate pycnothyria which have been seen to be connected directly by hyphae to the thyriothecia.

Fig. 1 illustrates *Morenoina antarctica* (Speg.) Theiss., the type species of the genus. This figure is taken from a collection in Herb.K examined and confirmed by Prof. E. Müller and compared by him with the type collection. Müller & von Arx (1962) described this species fully. A genus sometimes confused with *Morenoina* is *Aulographum* Lib. This is characterized by having an elongated scutellum composed of inordinately arranged cells. Müller & von Arx (1962) showed that the type species, *A. hederæ* Lib. (Fig. 2), has a hypostroma consisting of an extensive plate of subcuticular hyphae beneath the thyriothecium. Luttrell (1973) puts *Aulographum* into a separate family of the Hemisphaeriales, the Aulographaceae. The photographs illustrating the structure of the thyriothecium of *A. hederæ* are taken from part of the type collection in Herb.K. This species name was validly published by Libert (1834). A later name for this fungus is *A. vagum* Desmazières (1843).

KEY TO THE SPECIES OF MORENOINA

Ascospores up to 18 μm long	1
Ascospores not more than 15 μm long	2
1. Ascospores smooth, on <i>Rubus</i>	<i>clarkii</i>
Ascospores closely echinulate, on <i>Arundinaria</i>	<i>arundinariae</i>
2. Ascospores 9-15 μm long	3
Ascospores never more than 10 μm long	5
3. Conidia 5-7 \times 1.5-2 μm present in pycnothyria, on <i>Carex</i> , <i>Cladium</i> and <i>Juncus</i>	<i>paludosa</i>
Conidia absent	4
4. Branches of thyriothecia 150-200 μm wide, ascospores 10-14 \times 4-5 μm , on <i>Arundinaria</i>	<i>websteri</i>
Branches of thyriothecia 80-120 μm wide, ascospores 12-15 \times 4-5.5 μm , on <i>Carex</i> and <i>Juncus</i>	<i>fimbriata</i>

5. Ascospores not more than $7\ \mu\text{m}$ long	<i>epilobii</i> *
Ascospores more than $7\ \mu\text{m}$ and less than $10\ \mu\text{m}$ long	6
6. Conidia present in pycnothyria	7
Conidia absent	8
7. Ascospores $8-10 \times 3-4\ \mu\text{m}$, conidia $3-4 \times 0.5-1\ \mu\text{m}$, on <i>Phalaris</i> and <i>Phragmites</i>	<i>phragmitidis</i>
Ascospores $8-10 \times 2.5-3.5\ \mu\text{m}$, conidia $2-3 \times 0.5-1\ \mu\text{m}$, on <i>Rhododendron</i> and <i>Vaccinium</i>	<i>rhododendri</i>
8. Thyriothechia not more than $250\ \mu\text{m}$ long, on <i>Carex</i> , <i>Cladium</i> and <i>Funcus</i>	<i>minuta</i>
Thyriothechia mostly more than $250\ \mu\text{m}$ long	9
9. Branches of thyriothechia $40-60\ \mu\text{m}$ wide, on <i>Festuca</i>	<i>festucae</i> *
Branches of thyriothechia $80-100\ \mu\text{m}$ wide, on <i>Chamaecyparis</i>	<i>chamaecyparidis</i>

* European species not yet found in Britain.

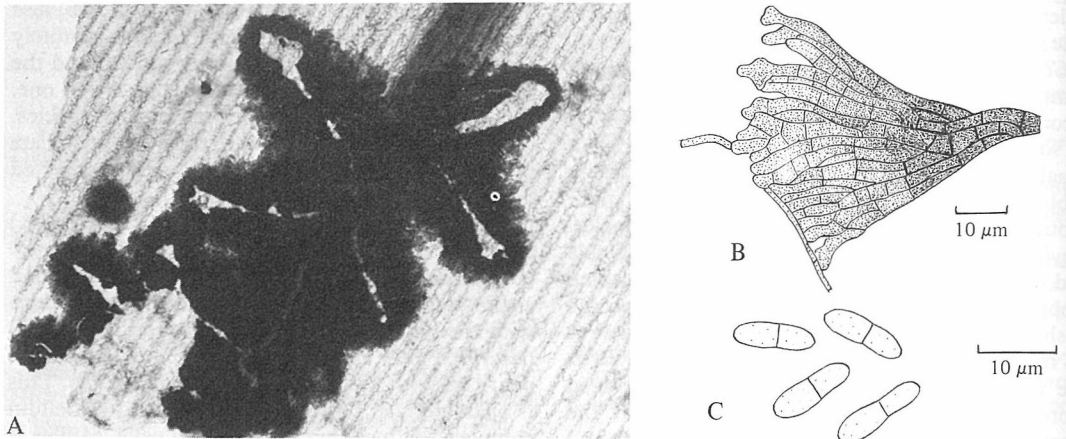


Fig. 1. *Morenoina antarctica*. (A) Thyriothechia ($\times 100$); (B) edge of scutellum; (C) ascospores.

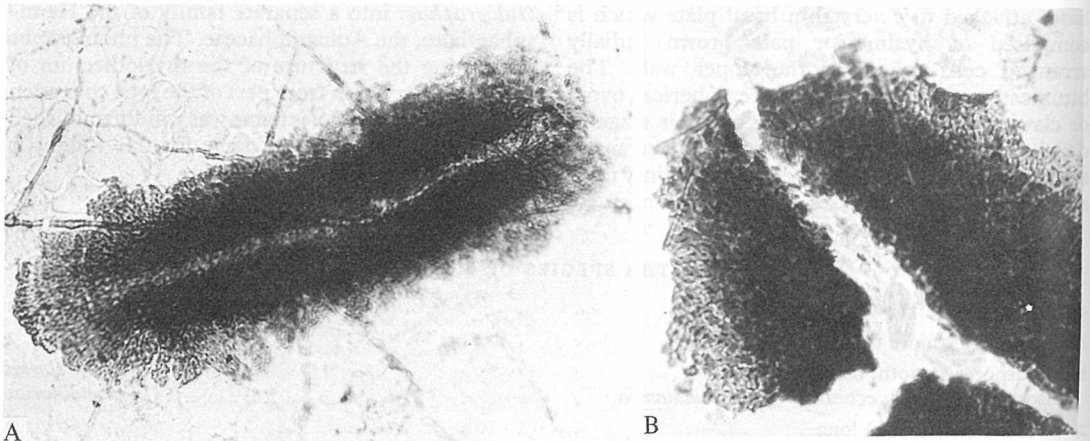


Fig. 2. *Aulographum hederae*. (A) Thyriothecium ($\times 250$); (B) part of thyriothecium ($\times 400$).

Morenoina arundinariae sp.nov. (Fig. 3)

Mycelium abundans, ex hyphis brunneis 2-2.5 μm latis compositum. *Thyriothecia* simplicia vel ramosa, recta vel flexa, dispersa vel aggregata, 400-1100 \times 60-100 μm . *Scutellum* ad centrum opacum, marginem versus rufo-brunneum, cellulae marginales protrudentes. *Asci* 25-40 \times 13-18 μm . *Ascospores* 1-septatae, 15-18 \times 4-6 μm , hyalinae vel stramineae, breviter echinulatae. *Pycnothyria* non visa.

In caulibus putrescentibus *Arundinariae*, Plas-Tany-Bwlch, Gwynedd, 15 May 1976, J. P. Ellis, Holotypus IMI 204120.

Mycelium abundant, hyphae brown, 2-2.5 μm wide. *Thyriothecia* simple or branched, straight or bent, scattered or crowded, 400-1100 \times 60-100 μm . *Scutellum* opaque at the centre, dark red brown at the edge, many cells protruding. *Asci* 25-40 \times 13-18 μm . *Ascospores* 1-septate, 15-18 \times 4-6 μm , hyaline to straw-coloured, finely echinulate.

On rotting stems of *Arundinaria* sp. Only one collection seen.

Morenoina chamaecyparidis sp.nov. (Fig. 4)

Mycelium sparsim, ex hyphis pallide brunneis, 1-2 μm latis compositum. *Thyriothecia* simplicia, dispersa, 120-450 \times 80-100 μm . *Scutellum* ex cellulis atro-brunneis, oblongis compositum; cellulae marginales fumoso-brunneae non protrudentes. *Asci* 14-20 \times 8-9 μm . *Ascospores* 1-septatae, 8-10 \times 3-4 μm , hyalinae vel pallide brunneae, minute et dispersim verruculosae. *Pycnothyria* non visa.

In foliis emortuis *Chamaecyparidis lawsonianae*, Hartland Forest, N. Devon, 22 May 1972, J. P. Ellis, Holotypus IMI 168863.

Mycelium scanty; hyphae pale brown, rather torulose, 1-2 μm wide. *Thyriothecia* simple, scattered, 120-450 \times 80-100 μm . *Scutellum* composed of dark brown oblong cells, mid smoky brown at the margin, not protruding. *Asci* 14-20 \times 8-9 μm . *Ascospores* 1-septate, 8-10 \times 3-4 μm , hyaline to very pale brown, minutely and distantly verruculose.

On dead leaves of *Chamaecyparis lawsoniana*. Only one collection seen.

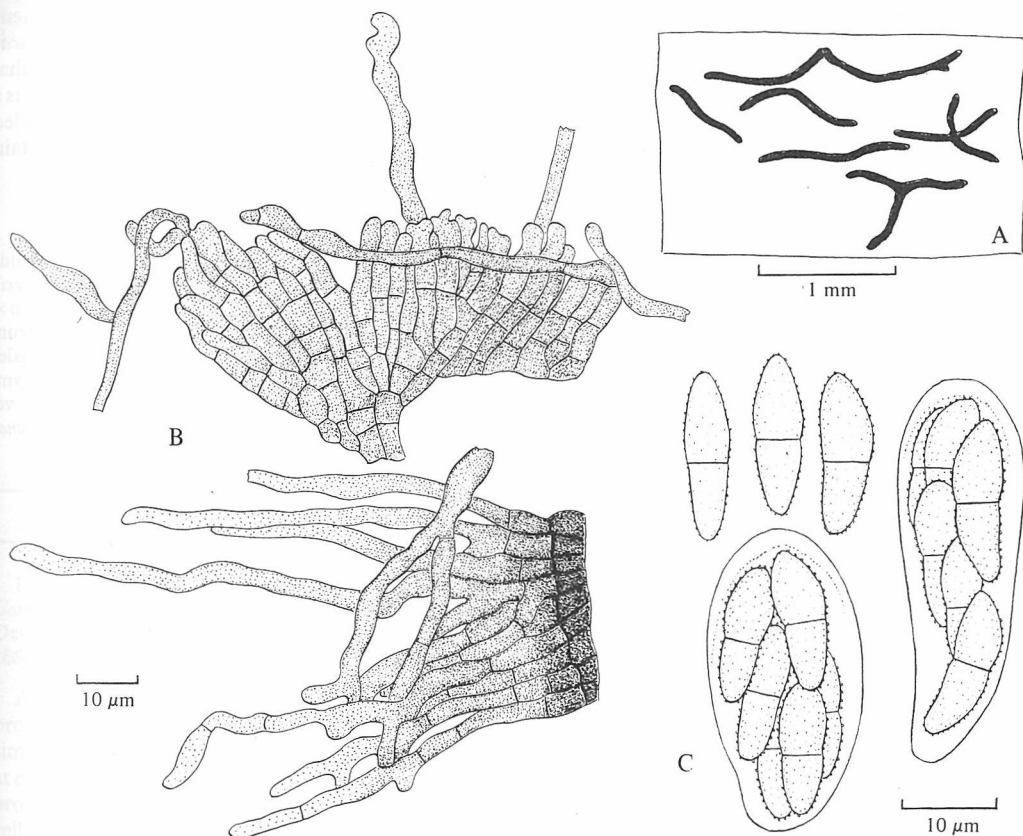


Fig. 3. *Morenoina arundinariae*. (A) Habit; (B) parts of edge of scutellum; (C) asci and ascospores.

Morenoina clarkii sp.nov. (Fig. 5)

Mycelium abundans, ex hyphis brunneis, sinuatis, 2–4 μm latis compositum, ad hyphas subcuticulares, septatas, torulosas passim affixum. *Thyriothecia* simplicia vel ramosa, flexuosa, 250–1500 \times 80–120 μm , interdum confluentia. *Scutellum* ad centrum opacum; cellulae marginales brunneae, saepe in mycelium crescentes. *Asci* 25–35 \times 12–17 μm . *Ascospores* 1-septatae, 14–19 \times 4.5–6.5 μm , hyalinae vel stramineae ut videtur semper glabrae. *Pycnothyria* non visa.

In caulibus emortuis *Rubi fruticosi* agg., Chesterton Wood, Warwicks., 15 Oct. 1970. M. C. Clark 748, Holotypus IMI 151898.

Mycelium abundant; hyphae brown, contorted, nodulose, 2–4 μm wide, at intervals connected to subcuticular mycelium composed of hyaline, septate, swollen hyphae. *Thyriothecia* mostly bent, lobed and branched, 250–1500 \times 80–120 μm , up to 250 μm wide where lobed, and sometimes confluent. *Scutellum* almost opaque except at the edge where the brown cells frequently run out into the mycelium. *Asci* 25–35 \times 12–17 μm . *Ascospores* 1-septate, 14–19 \times 4.5–6.5 μm , hyaline to pale straw-coloured, remaining smooth.

On dead stems of *Rubus fruticosus* agg. Five collections examined from Devon and Warwicks. This fungus is named after Mr and Mrs M. C. Clark, who have made all the collections.

MORENOINA EPILOBII (Lib.) von Arx, *Beitr. Kryptogamenfl. Schweiz* 11: 129 (1962). (Fig. 6).

Mycelium sparse; hyphae straw-coloured to pale brown, somewhat torulose, 1.5–2.5 μm wide. *Thyriothecia* simple, branched or bent, 150–450 \times 40–60 μm . *Scutellum* brown, slightly darker in the centre, composed of almost square cells, somewhat fanned out at the ends, margin unfringed. *Asci* 12–20 \times 7–9 μm . *Ascospores* 1-septate, 5–7 \times 2–3 μm , hyaline to pale straw-coloured, smooth. *Pycnothyria* not seen.

On dead stems of *Epilobium angustifolium*. This description is based on Libert's material in Herb.K, *Plant. crypt. Arduennae*: 273 (1834), an isotype collection and is included as it may well occur in Britain.

Morenoina festucae (Lib.) J. P. Ellis comb.nov. (Fig. 7)

Aulographum festucae Lib., *Plant. crypt. Arduennae*: 373 (1837).

Echidnodes festucae (Lib.) Ryan, *Ill. Biol. Monogr.* 17 (2): 97 (1939).

Mycelium plentiful; hyphae brown, 1.5–2.5 μm wide, often branching at right angles. *Thyriothecia* scattered, simple, bent and variously branched, 125–400(800) \times 40–80 μm . *Scutellum* dark red-brown in the centre, paler at the fimbriate margin, with many cells running out into the mycelium. *Asci* 18–22 \times 8–11 μm . *Ascospores* 1-septate, 8–9 \times 2.5–3 μm , hyaline to straw-coloured, minutely verruculose. *Pycnothyria* not seen.

On dead sheaths of *Festuca sylvatica* Vill. (*F. altissima* All.). This description is based on part of the type collection of Libert in Herb.K. Specimens referred to this species as *Aulographum festucae* have been recorded from this country but none that I have seen can be placed here. *Festuca altissima* is a locally rather rare grass of rocky slopes and wooded stream-sides scattered over Europe, and in Britain mainly in the west and north.

Morenoina fimbriata sp.nov. (Fig. 8)

Mycelium moderate abundans, ex hyphis pallide brunneis 1.5–2 μm latis compositum. *Thyriothecia* simplicia, interdum ramosa, saepe flexa, 300–1100 \times 80–120 μm , utrinque angustata. *Scutellum* ad centrum atrobrunneum, margine pallidum; cellulae marginales saepe in mycelium crescentes. *Asci* 20–25 \times 12–18 μm . *Ascospores* 1-septatae, 12–15 \times 4–5.5 μm , hyalinae vel stramineae, minute et dispersim verruculosae. *Pycnothyria* non visa.

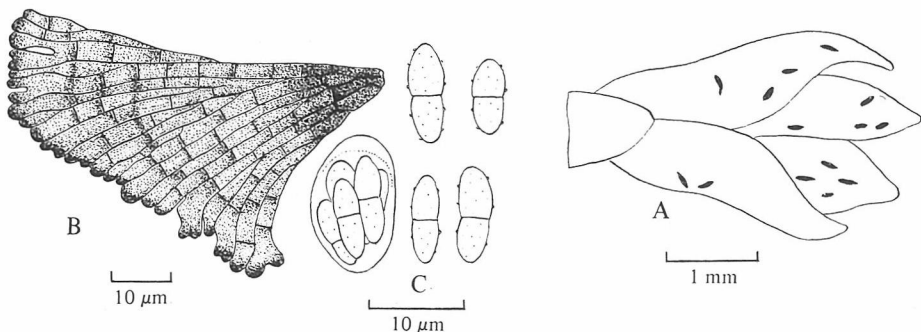


Fig. 4. *Morenoina chamaecyparidis*. (A) habit; (B) edge of scutellum; (C) ascus and ascospores.

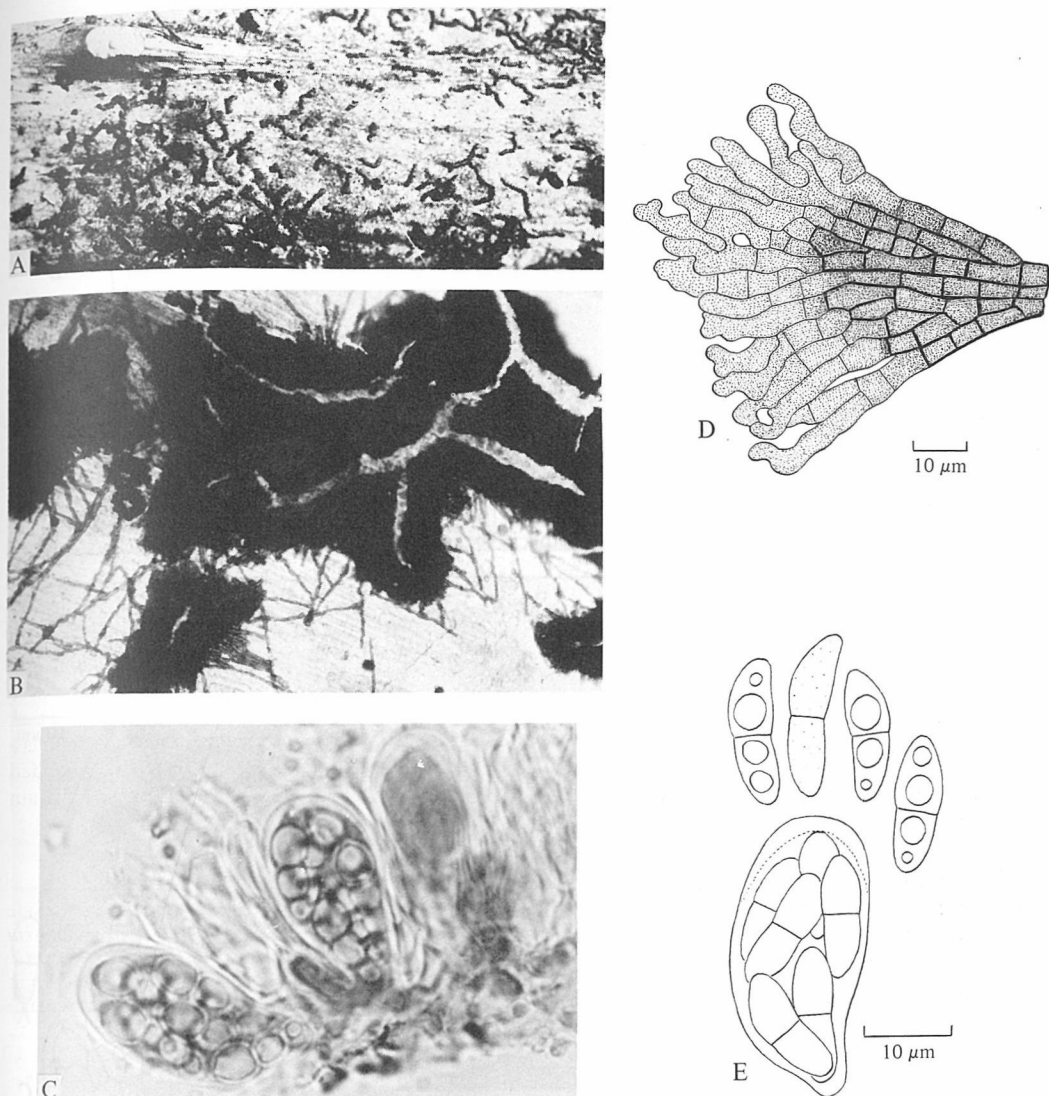


Fig. 5. *Morenoina clarkii*. (A) Habit ($\times 6$); (B) thyriothechia ($\times 100$); (C) asci ($\times 1000$); (D) edge of scutellum; (E) ascus and ascospores.

In foliis, vaginis et culmis emortuis *Junci effusi*, *Carex binervis* et *Carex* sp., Hartland Forest, N. Devon, 22 May 1972, J. P. Ellis. Holotypus IMI 166599.

Mycelium moderately abundant; hyphae pale brown, $1.5\text{--}2\ \mu\text{m}$ wide. *Thyriothechia* scattered, simple, sometimes branched, often curved, tapering at each end, $300\text{--}1100 \times 80\text{--}120\ \mu\text{m}$. *Scutellum* dark brown at the centre, paler at the margin, marginal cells frequently running out into the mycelium giving a fimbriate appearance. *Asci* $20\text{--}25 \times$

$12\text{--}18\ \mu\text{m}$. *Ascospores* 1-septate, $12\text{--}15 \times 4\text{--}5.5\ \mu\text{m}$, hyaline to pale straw-coloured, distantly verruculose.

On dead leaves, sheaths and culms of *Juncus effusus*, *Carex binervis* and *Carex* sp. Four collections examined from Devon, Gwynedd, Powys and Warwicks.

***Morenoina minuta* sp. nov. (Fig. 9)**

Mycelium primum abundans dein sparsum, ex hyphis stramineis vel brunneis, $1.5\text{--}2\ \mu\text{m}$ latis compositum. *Thyriothechia* simplicia, recta vel interdum flexa,

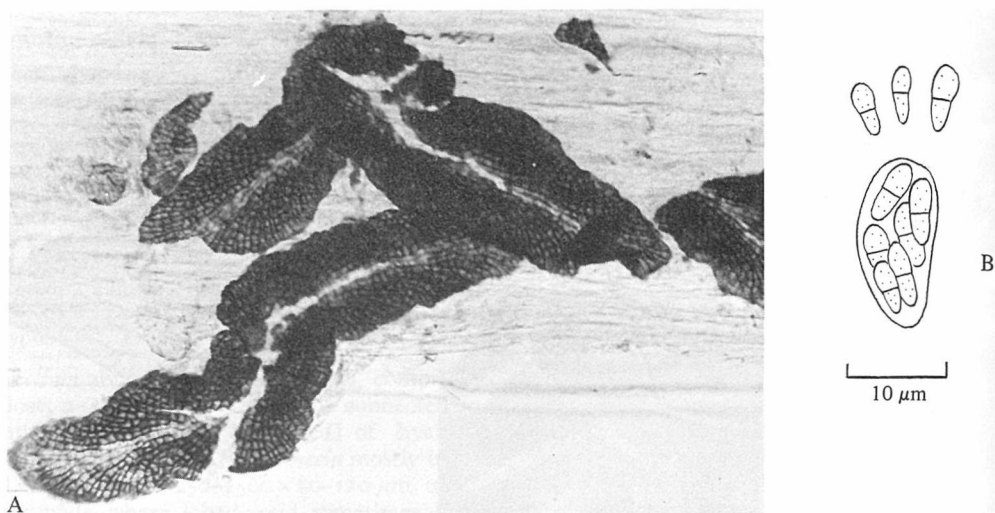


Fig. 6. *Morenoina epilobii*. (A) Thyriothecia ($\times 250$); (B) ascus and ascospores.

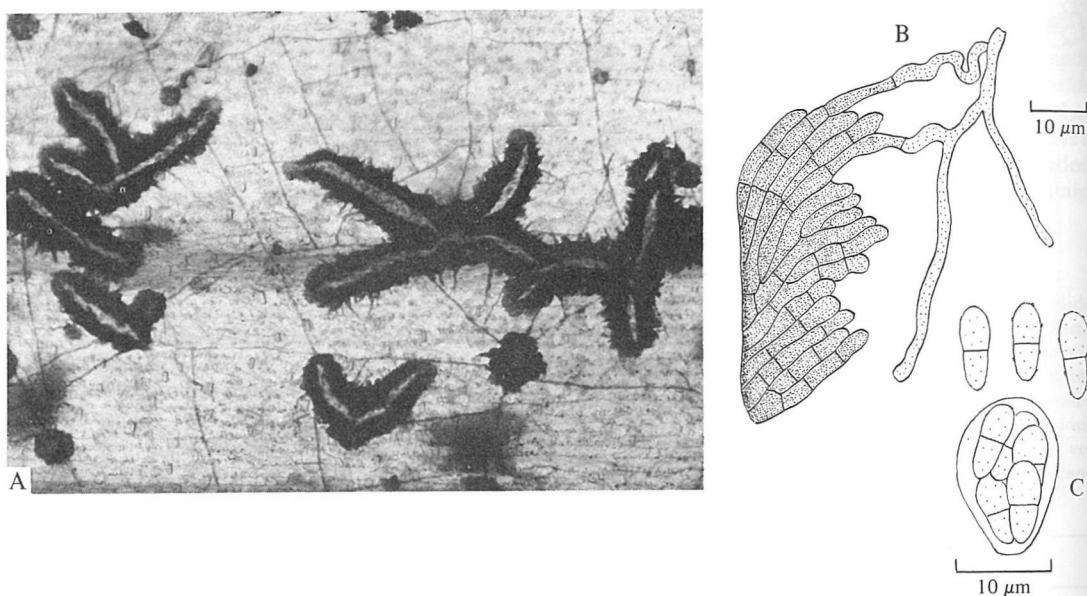


Fig. 7. *Morenoina festucae*. (A) Thyriothecia ($\times 100$); (B) edge of scutellum; (C) ascus and ascospores.

100–250 \times 40–60 μm . *Scutellum* rufo-brunneum; cellulae marginales pallidiores, saepe protrudentes et conicae. *Asci* 15–20 \times 9–12 μm . *Ascospores* 1-septatae, 7–9 \times 2.5–3.5 μm , hyalinae vel pallide stramineae, interdum minute et dispersim verruculosae. *Pycnothyria* non visa.

In foliis, vaginis et culmis emortuis *Junci effusi*, *Caricis flaccae*, *Caricis* sp., et *Cladii marisci*, Cnwc, Mynnydd Prescelly, Dyffyd, 25 May 1961, J. T. Palmer, Holotypus IMI 134295.

Mycelium abundant but becoming sparse with age; hyphae straw-coloured to brown, 1.5–2 μm wide. *Thyriothecia* straight or curved, unbranched, 100–250 \times 40–60 μm . *Scutellum* red-brown, cells thick-walled, many of those at the margin protruding and cone-shaped. *Asci* 15–20 \times 9–12 μm . *Ascospores* 1-septate, 7–9 \times 2.5–3.5 μm , hyaline to pale straw-coloured, occasionally minutely and distantly verruculose.

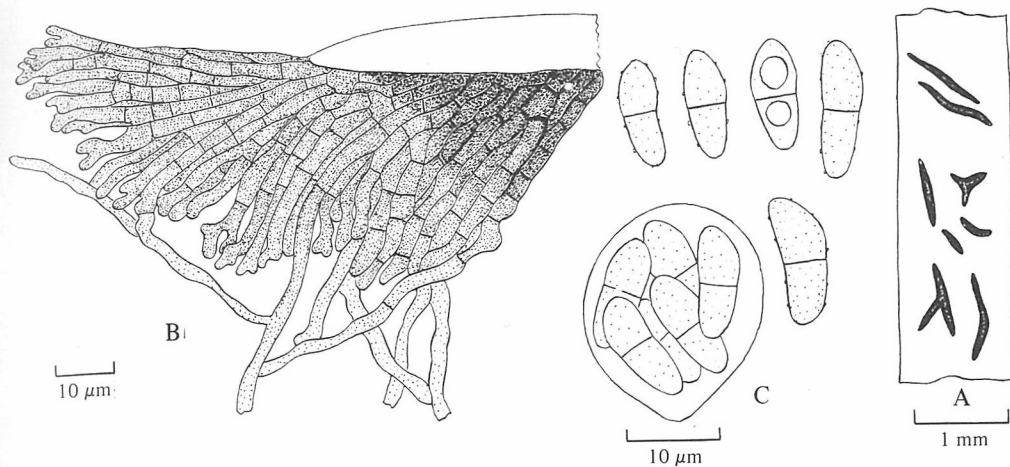


Fig. 8. *Morenoina fimbriata*. (A) Habit; (B) edge of scutellum; (C) ascus and ascospores.

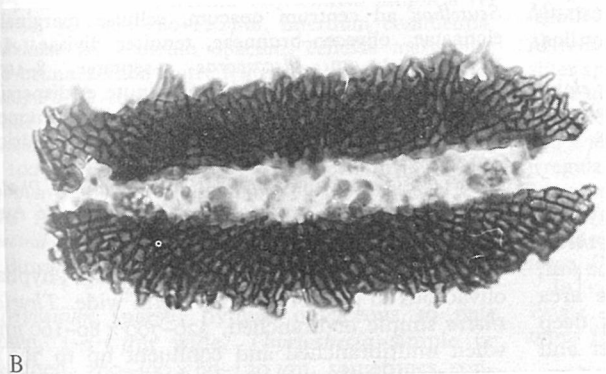
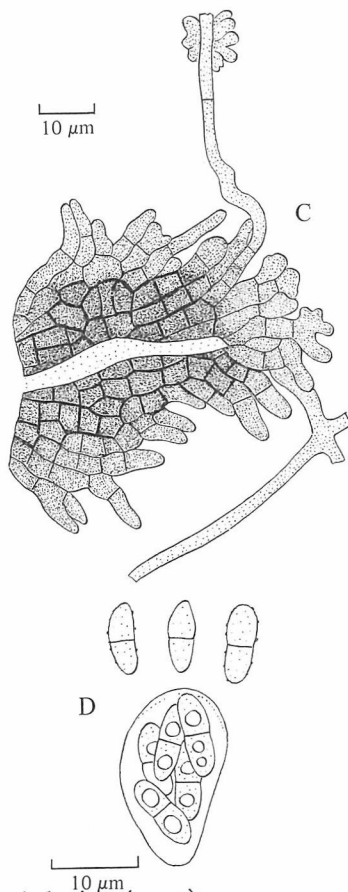
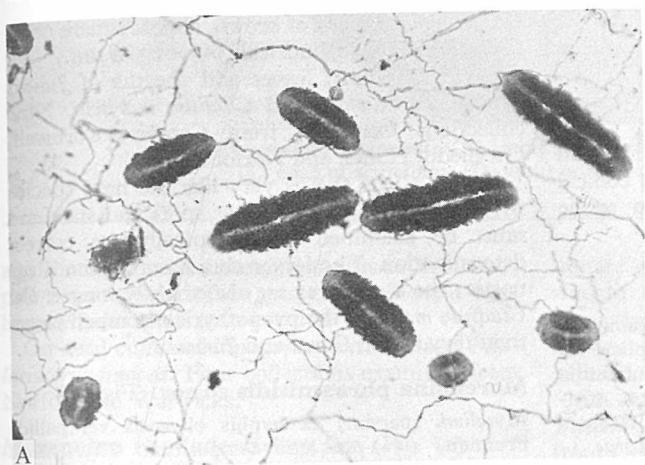


Fig. 9. *Morenoina minuta*. (A) Habit ($\times 100$); (B) thyrsothecium ($\times 400$); (C) edge of scutellum; (D) ascus and ascospores.

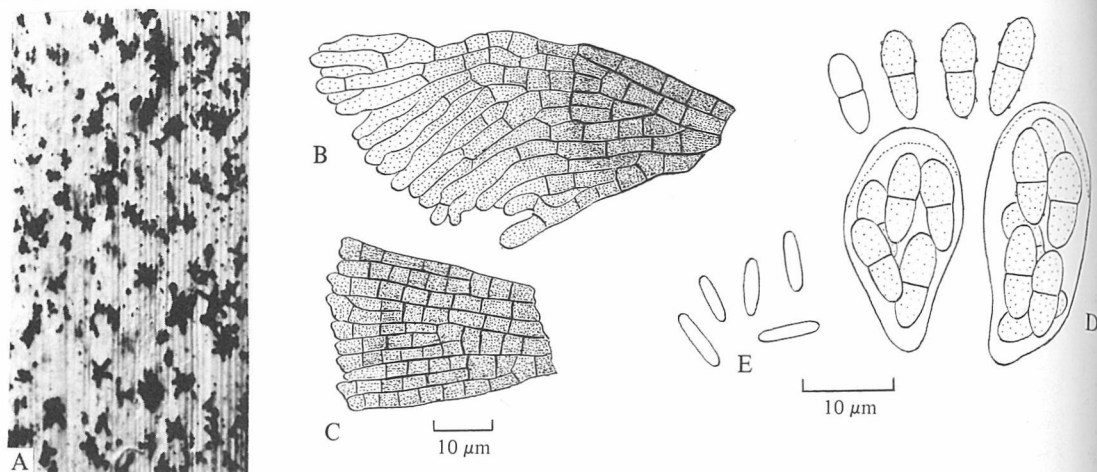


Fig. 10. *Morenoina paludosa*. (A) Habit ($\times 6$); (B) edge of scutellum; (C) edge of pycnothyrium; (D) asci and ascospores; (E) conidia.

On dead sheaths, leaves and stems of *Juncus effusus*, *Carex flacca*, *Carex* sp. and *Cladium mariscus*. Eight collections examined from Cambs., Devon, Dorset, Dyffyd, Gwynedd, Suffolk and Warwicks.

As the name suggests, this species is very small but appears to be quite widespread. The conical cells at the edge of the scutellum seem to be diagnostic.

Morenoina paludosa sp.nov. (Fig. 10)

Mycelium sparsim; ex hyphis hyalinis vel stramineis, $1.5-2 \mu\text{m}$ latis compositum. *Thyriothecia* simplicia vel multiramosa, $160-800 \times 60-100 \mu\text{m}$, saepe confluentia et dein latiora. *Scutellum* ex cellulis quadratis, atro-brunneis compositum; cellulae marginales pallescentes et longiores. *Asci* $20-28 \times 10-13 \mu\text{m}$. *Ascospores* 1-septatae, $9-11.5 \times 3-4 \mu\text{m}$, hyalinae vel stramineae, saepe minute et dispersim verruculosae. *Pycnothyria* orbicularia $60-120$ (400) μm diam. *Scutellum* ex cellulis brunneis, quadratis compositum. *Conidia* hyalina, cylindrica, $5-7 \times 1.5-2 \mu\text{m}$.

In foliis, vaginis et culmis *Junci effusi*, *Caricis elatae* et *Cladii marisci*, Lambourne Hill, Perranzabuloe, Cornwall, May 1952, M. B. Ellis, Holotypus IMI 50152.

Mycelium scanty; hyphae where present hyaline to straw-coloured, $1.5-2 \mu\text{m}$ wide. *Thyriothecia* simple to much branched, $160-800 \times 60-100 \mu\text{m}$, but where confluent and many lobed the area covered is greater. *Scutellum* composed of deep brown almost square cells becoming longer and paler at the edge. *Asci* $20-28 \times 10-13 \mu\text{m}$. *Ascospores* 1-septate, $9-11.5 \times 3-4 \mu\text{m}$, hyaline to pale brown, often distantly verruculose at maturity. *Pycnothyria* orbicular, $60-120$ (400) μm diam.

Scutellum composed of brown, almost square cells. *Conidia* hyaline, cylindrical, $5-7 \times 1.5-2 \mu\text{m}$.

On dead culms, leaves and sheaths of *Juncus effusus*, *Carex elata* and *Cladium mariscus*. Nine collections examined from Cambs., Cornwall, Gwynedd, Hunts, and Norfolk.

Under a lens this is very like the next species *M. phragmitidis*, appearing as spots and stars and must be examined microscopically for correct determination. The larger conidia are quite diagnostic; the ascospores are also slightly longer. On *Cladium mariscus* the pycnothyria are much larger than they are on *Carex* and *Juncus*.

Morenoina phragmitidis sp.nov. (Fig. 11)

Mycelium sparsim; ex hyphis olivaceis vel pallide brunneis, $1.5-2 \mu\text{m}$ latis compositum. *Thyriothecia* simplicia vel ramosa, $320-700 \times 80-160 \mu\text{m}$, saepe multiramosa et confluentia et dein ad $700 \times 500 \mu\text{m}$. *Scutellum* ad centrum opacum, cellulae marginales elongatae, olivaceo-brunneae, tenuiter divisae. *Asci* $20-30 \times 10-13 \mu\text{m}$. *Ascospores* 1-septatae, $8-10 \times 3-4 \mu\text{m}$, hyalinae vel stramineae, minute et dispersim verruculosae. *Pycnothyria* orbicularia, pallide brunnea, $60-120$ (200) μm diam. *Conidia* hyalina, cylindrica, $3-4 \times 0.5-1 \mu\text{m}$.

In culmis emortuis *Phragmitidis australis* et *Phalaridis arundinaceae*, Wheatfen Broad, Norfolk, 26 Aug. 1970, E. A. Ellis, Holotypus IMI 154593.

Mycelium sparse, disappearing with age; hyphae olivaceous to pale brown, $1.5-2 \mu\text{m}$ wide. *Thyriothecia* simple or branched, $320-700 \times 80-160 \mu\text{m}$, when multibranching and confluent up to $700 \times 500 \mu\text{m}$. *Scutellum* opaque in the centre, marginal cells olivaceous brown, elongate and finely divided. *Asci* $20-30 \times 10-13 \mu\text{m}$. *Ascospores* 1-septate, $8-10 \times 3-4 \mu\text{m}$, hyaline to straw-coloured, often minutely

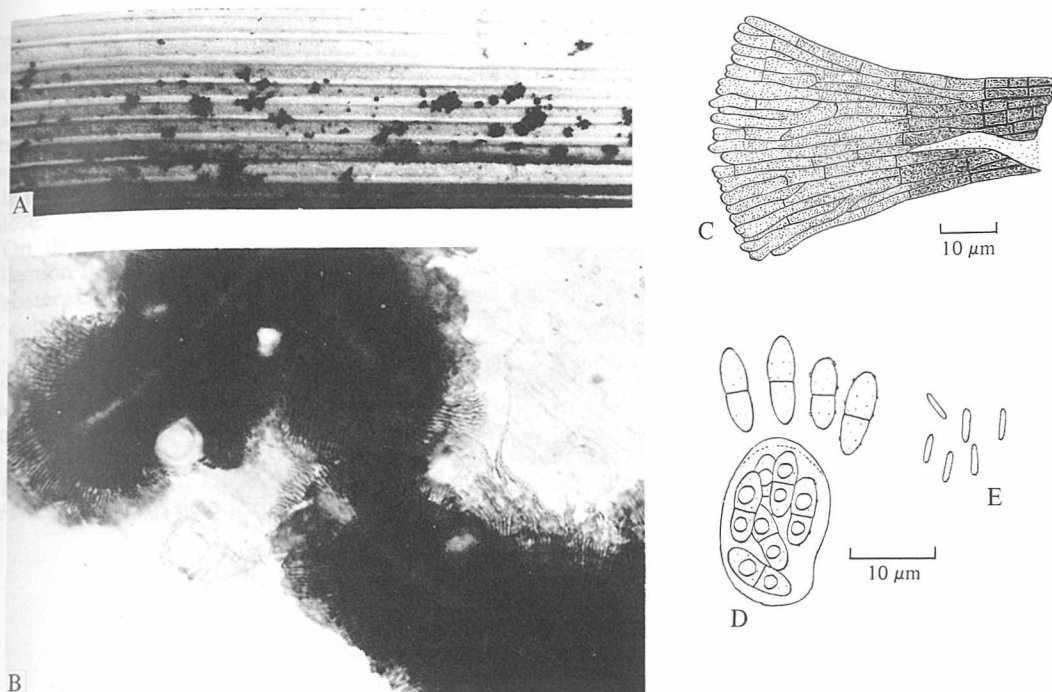


Fig. 11. *Morenoina phragmitidis*. (A) Habit ($\times 6$); (B) parts of thyriothecia ($\times 250$); (C) edge of scutellum; (D) ascus and ascospores; (E) conidia.

and distantly verruculose. *Pycnothyria* orbicular, pale brown, 60–120(200) μm diam. *Conidia* hyaline, cylindrical, 3–4 \times 0.5–1 μm .

On dead culms of *Phragmites australis* and *Phalaris arundinacea*. Four collections examined from Norfolk and Warwicks.

***Morenoina rhododendri* sp.nov.** (Fig. 12)

Mycelium sparsim, ex hyphis olivaceis vel brunneis, 1–1.5 μm latis compositum. *Thyriothecia* simplicia vel ramosa, 300–400 \times 60–120 μm , interdum confluentia. *Scutellum* ad centrum opacum, cellulae marginales rufo-brunneae, non protrudentes. *Asci* 16–20 \times 8–13 μm . *Ascospores* 1-septatae, 8–10 \times 3–4 μm , hyalinae vel pallide brunneae, minute et dispersim verruculosae. *Pycnothyria* orbicularia, straminea vel pallide brunnea, ad 100 μm diam. *Conidia* hyalina, cylindrica, 2–3 \times 0.5–1 μm .

In ramunculis emortuis *Rhododendri pontici* et *Vaccinii myrtilli*, Studland, Dorset, 27 May 1961, K. Pirozynski, Holotypus IMI 89616.

Mycelium sparse; hyphae olivaceous to pale brown, 1–1.5 μm wide. *Thyriothecia* simple or branched, 300–400 \times 60–120 μm , sometimes confluent and covering a large area. *Scutellum* opaque at the centre, red-brown at the margin, non-fimbriate. *Asci* 16–20 \times 8–13 μm . *Ascospores* 1-

septate, 8–10 \times 3–4 μm , hyaline to pale brown, smooth to minutely and distantly verruculose. *Pycnothyria* orbicular, straw-coloured to pale brown, up to 100 μm diam. *Conidia* hyaline, cylindrical, 2–3 \times 0.5–1 μm .

On dead twigs of *Rhododendron ponticum* and *Vaccinium myrtilus*. Four collections examined from Devon, Dorset and the Isle of Mull.

***Morenoina websteri* sp.nov.** (Fig. 13)

Mycelium ad margines thyriotheciorum abundans, aliter sparsim, ex hyphis pallide brunneis vel brunneis, 1.5–2 μm latis compositum. *Thyriothecia* multiramosa, 400–800 \times 150–200 μm , saepe confluentia et dein ad 800 \times 700 μm . *Scutellum* ex cellulis atrobunneis, irregulariter quadrangularis compositum; cellulae marginales elongatae fimbriae formantes. *Asci* 30–35 \times 10–12 μm . *Ascospores* 1-septatae, 10–14 \times 4–5 μm , hyalinae vel stramineae, minute et dispersim verruculosae. *Pycnothyria* non visa.

In culmis emortuis *Arundinariae* sp., Hengwent Estate, Gwynedd, 15 May 1976, J. Webster, Holotypus IMI 204122.

Mycelium scanty except at the margins of the thyriothecia where it is abundant; hyphae pale to mid brown, 1.5–2 μm wide. *Thyriothecia* much

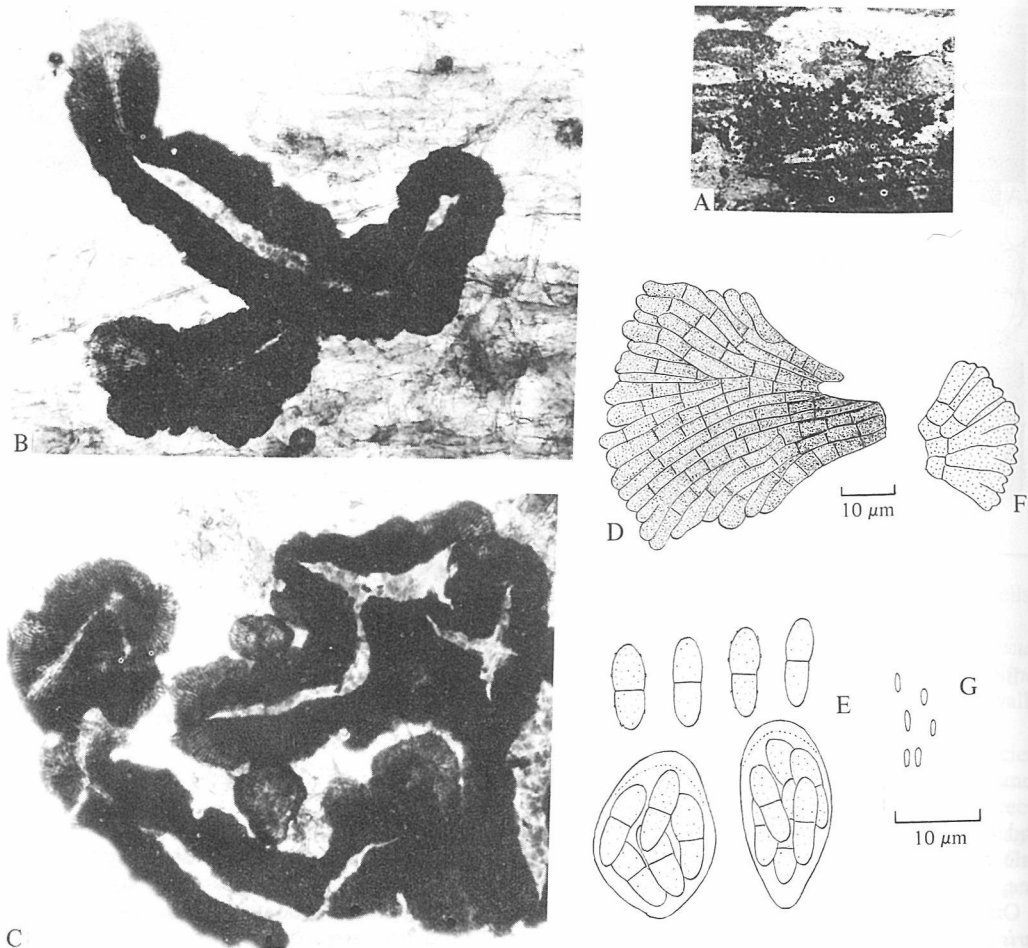


Fig. 12. *Morenoina rhododendri*. (A) Habit ($\times 6$); (B) thyriothecium and pycnothyria ($\times 150$); (C) confluent thyriothechia ($\times 150$); (D) edge of scutellum; (E) asci and ascospores; (F) edge of pycnothyrium; (G) conidia.

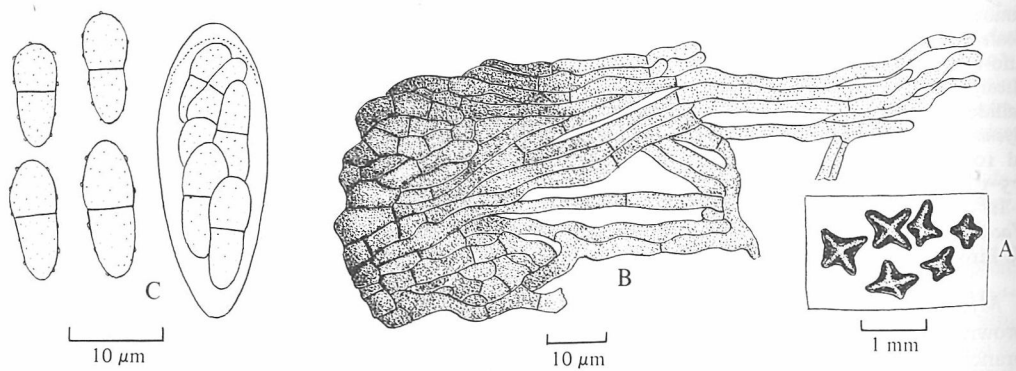


Fig. 13. *Morenoina websteri*. (A) Habit; (B) edge of scutellum; (C) ascus and ascospores.

branched, $400-800 \times 150-200 \mu\text{m}$, sometimes confluent and then often covering an area up to $800 \times 700 \mu\text{m}$. *Scutellum* composed of irregularly shaped quadrilateral cells running out at the margin into a dense mycelial fringe. *Asci* $30-35 \times 10-12 \mu\text{m}$. *Ascospores* 1-septate, $10-14 \times 4-5 \mu\text{m}$, hyaline to pale straw-coloured, minutely and distantly verruculose.

On dead culms of *Arundinaria* sp. Only one collection has been seen. Named after Prof. John Webster. Under a hand-lens this species is seen to be composed of star-shaped ascomata whereas in *M. arundinariae* they are more robust, elongated and branched. I have examined *Aulographum arundinariae* Cooke and it is quite different from these two *Morenoina* species on *Arundinaria*.

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