

ANALYTICAL KEY

TO THE SUBORDERS, FAMILIES AND GENERA OF

THE

NORTH AMERICAN PYRENOMYCETES AND

HYSTERIACEAE.

The Nat. *ORDER PYRENOMYCETES* embraces those fungi in which the asci and sporidia are enclosed in a perithecium, and is divided into 4 *SUBORDERS* as follows:

Perithecia superficial, astomous, membranaceous,
mostly on a subiculum. *Perisporiaceae*.

Perithecia carnose, or membranaceo-carnose,
ostiolate, bright colored (red, yellow, etc..)
not black. *Hypocreaceae*.

Perithecia black or brown, mostly ostiolate, of
various consistence, membranaceous, co-
riaceous, carbonaceous, woody or corky, but
not carnose; stroma when present not car-
nose, dark colored outside, often white
within. *Sphaeriaceae*.

Stroma always present, of firm texture not carnose,
black outside. Perithecia reduced to mere
cells in the stroma. *Dothideaceae*.

KEY TO THE FAMILIES.

SUBORDER PERISPORIACEAE.

Mycelium of colorless, interwoven threads. Per-
ithecia seated singly on the mycelium, subglobose,

- astomous, bearing variously formed, radiating, thread-like appendages. . . . *Erysipheae*.
- Mycelium persistent, brown, often bearing conidia, sometimes inconspicuous or evanescent.
- Perithecia globose or depressed, astomous, always superficial. . . . *Perisporiaceae*.

SUBORDER HYPOCREACEAE.

The genera included in this suborder are all closely related and are not separated into families.

SUBORDER SPHAERIACEAE.

A. *Perithecia* scattered, stroma wanting (*simple Sphaeriaceae*.)* *Perithecia*, superficial or erumpent-superficial.(a) *Perithecia* hairy.

Perithecia membranaceous, or coriaceous-membranaceous. . . . *Trichosphaeriaceae*.

Perithecia thin membranaceous, with an apical tuft of hairs, lignicolous. . . . *Chaetomiaceae*.

Perithecia carbonaceous or subcarbonaceous. . . . *Melanommeae* (partly.)

Perithecia glabrous or hairy, fimicolous. . . . *Sordariaceae*.

(b) *Perithecia* not hairy.

Perithecia thin-membranaceous, with a subulate ostium, . . . *Ceratostomeae*.

Perithecia woody or corky. . . . *Melanommeae* (partly.)

Perithecia subcarbonaceous, ostium compressed. *Lophiostomeae*.

Perithecia subcarbonaceous, ostium not compressed. . . . *Amphisphaeriaceae*.

Perithecia carbonaceous, ostium soon deciduous and perithecia then broadly perforated above. . . . *Trematosphaeriaceae*.

** *Perithecia* buried or only subemergent.

Perithecia small, simply perforated above. *Sphaerelleae*.

Perithecia membranaceous or coriaceous-membranaceous, ostium subulate. . . . *Gnomoniaceae*.

Perithecia membranaceous, or coriaceous-membranaceous, ostium conical or papilliform. . . . *Pleosporeae*.

Perithecia coriaceous, thick walled. . . . *Massariaceae*.

Perithecia covered with a stromatic shield. *Clypeosphaeriaceae*.

*** *Perithecia cespitose* (or sometimes simply gregarious,) connected at base by a more or less distinct stromatic layer. - *Cucurbitariceae*.

B. Perithecia included in a stroma (*Compound Sphaeriae*.)

Stroma effused, pulvinate or tuberculiform; perithecia buried in the stroma, their ostiola (typically) convergent and erumpent in a central fascicle. *Valseae*.

Stroma valsoid, pulvinate, conical or hemispherical, often inconspicuous or wanting, accompanied mostly by a conidial stroma, - *Melanconideae*.

Stroma various; pulvinate, tuberculiform, etc., erumpent or superficial. Spermatia and stylospores produced in cavities within the perithecial stroma. - (1.) *Melogrammeae*.

Stroma effused, scutellate, pulvinate or tuberculiform. Perithecia monostichous or polystichous, with their ostiola separately erumpent. - (2.) *Diatrypeae*.

Stroma various; upright, dendroid, pulvinate, or globose; mostly carbonaceous and superficial, black, or becoming black. Sporidia, brown or black. - (3.) *Xylariceae*.

SUBORDER DOTHIDEACEAE.

Stroma pulvinate or effused, coriaceous, or subcarbonaceous; perithecia reduced to mere cells or cavities in the stroma. Sporidia hyaline, yellowish or brown - *Dothideaceae*.

SUBORDER HYSTERIACEAE.

Stroma none. Perithecia simple, erumpent-superficial, oblong or linear, membranaceous, coriaceous or carbonaceous, becoming black, opening by a narrow, longitudinal cleft. - *Hysteriaceae*.†

1. Includes *Botryosphaeria*, *Myrmaecium*, *Endothia*, *Melogramma*, and *Valsaria*. (pp. 546-564.)

2. Includes *Diatrype*, *Anthostoma* and *Diatrypella* (pp. 565-595.)
The diagnoses of these two families were omitted in their proper place in the N. Am. Pyrenomycetes.

3. This family should precede *Dothideaceae* in the systematic arrangement,

†This suborder does not properly belong to the Pyrenomycetes but is included here for the present as a matter of convenience.

KEY TO THE GENERA.

ERYSIPHEAE.

- * *Appendages to the perithecia simple and similar to the threads of the mycelium.*
 Only one ascus in a perithecium. - *Sphaerotheca.*
 Several asci in each perithecium. - *Erysiphe.*
- ** *Appendages branched at their tips*
 Only one ascus in a perithecium. - *Podosphaera.*
 Several asci in each " - *Microsphaera.*
- *** *Appendages not branched but different from the threads of the mycelium.*
 Appendages swollen at the base, tips straight. *Phyllactinia.*
 Appendages not swollen at the base, tips coiled. *Uncinula.*

PERISPORIEAE.

- * *Mycelium present.*
 Mycelium thin, arachnoid. - *Saccardia.*
 " yellow. - *Eurotium.*
 " light colored. - *Mycrococcum.*
- ** *Mycelium scanty or wanting.*
 Perithecia scattered, subglobose. - *Perisporium.*
 " " flattened. - *Microthyrium.*
 " stromatic. - *Lasiobotrys.*
- *** *Mycelium black.*
 Perithecia subglobose, appendiculate. - *Meliola*
 " " not " - *Dimerosporium*
 " flattened. - *Asterina.*
 " elongated, subulate etc. - *Capnodium.*
- **** *Mycelium, massive, coarse.* - *Scorias.*

HYPOCREACEAE.

A. *Perithecia sunk in a stroma.*

- * *Stroma erect, sporidia filiform, hyaline.*
 Stroma capitate, sclerotigenous. - *Claviceps.*
 " clavate, entomogenous. - *Cordyceps.*
 " " herbicolous. - *Acrospermum.*
- ** *Stroma tuberculiform.*
 Fimicolous, sporidia elliptical. - *Selinia.*
 Herbicolous, sporidia filiform. - *Oomyces.*
- *** *Stroma effused, dark colored.*

Stroma byssoid.	. . . . .	<i>Byssonectria.</i>
Stroma valsoid.	. . . . .	<i>Thyronectria.</i>
Parasitic on other fungi.	. . . . .	<i>Hypomyces.</i>
Growing on wood or bark.	. . . . .	<i>Hypocrea.</i>
Sporidia filiform.	. . . . .	<i>Hypocrella.</i>
**** <i>Stroma effused, bright colored.</i>		
Sporidia ovoid, (foliicolous.)	. . . . .	<i>Polystigma.</i>
Sporidia filiform, stroma, yellow, amplexicaul.	. . . . .	<i>Epichloe.</i>
B. Perithecia buried, without any distinct stroma.		<i>Hyponectria.</i>
C. Perithecia superficial stroma, scanty or none.		
* <i>Sporidia hyaline or subhyaline.</i>		
Sporidia appendiculate, perithecia subulate.		<i>Eleutheromyces.</i>
Sporidia uniseptate, conidial stroma tubercular.		<i>Nectria.</i>
Sporidia uniseptate, conidial stroma capitate.		<i>Sphaerostilbe.</i>
Sporidia, 2-or more-septate.		<i>Calonectria.</i>
Sporidia muriform.		<i>Pleonectria.</i>
Sporidia allantoid, minute, asci polysporous.		<i>Chilonectria.</i>
Sporidia filiform, fimicolous.		<i>Barya.</i>
Sporidia filiform, xylogenuous.		<i>Ophionectria.</i>
Sporidia 3-pluriseptate, perithecia blue or violet.		<i>Gibberella.</i>
<i>Sporidia brown, perithecia beaked, mostly continuous.</i>		<i>Melanospora.</i>

CHAETOMIACEAE.

Characters same as the family; includes the single genus. *Chaetomium.*

SORDARIACEAE.

A. Stroma wanting.

* *Sporidia continuous brown.*

Asci 8-spored, sporidia without appendages	. . . . .	<i>Sordaria.</i>
Asci 8-spored, sporidia appendiculate	. . . . .	<i>Podospora.</i>
Asci polysporous	. . . . .	<i>Philocorya.</i>

** *Sporidia, 1-or more-septate.*

Sporidia uniseptate.	. . . . .	<i>Delitschia.</i>
Sporidia 4-20, septate.	. . . . .	<i>Sporormia.</i>

B. Stroma present.

Sporidia continuous.	. . . . .	<i>Hypocopa.</i>
Sporidia 4-20-septate.	. . . . .	<i>Sporormiella.</i>

TRICHOSPHAERIAE.

Sporidia oblong or elliptical, uniseptate.	-	<i>Venturia.</i>
Sporidia cylindrical or vermiform, 1-or more-septate.	- - - -	<i>Lasio-sphaeria.</i>
Sporidia oblong, ovate, or cylindrical, continuous.		<i>Trichosphaeria.</i>
Sporidia 1-many-septate, subfusoid, hyaline or subhyaline.	- - - -	<i>Acanthostigma.</i>
Sporidia fusoid or oblong, hyaline or brown, 1-7 septate.	- - - -	<i>Herpotrichia.</i>
Sporidia fusoid or oblong, brown, or with the terminal cells hyaline; perithecia seated on or surrounded by a felt-like or hairy subiculum.	- - - -	<i>Chaetosphaeria.</i>

MELANOMMEAE.

Perithecia globose or subglobose, sporidia brown, continuous.	- - - -	<i>Rosellinia.</i>
Perithecia fasciculate, elongated, sporidia, cylindrical, hyaline, with a brown head.	- - - -	<i>Bombardia.</i>
Perithecia subdepressed, smooth, sporidia elliptical, or fusoid, uniseptate, pale brown or hyaline.		<i>Melanopsamma.</i>
Perithecia tubercular-roughened, sporidia subcylindrical, uniseptate hyaline.	- - - -	<i>Bertia.</i>
Perithecia globose or ovoid, sporidia oblong or fusoid, 1-or more-septate, brown.	- - - -	<i>Melanomma.</i>
Perithecia subsuperficial, ovate or oblong, pluriseptate, hyaline.	- - - -	<i>Zignoella.</i>

CERATOSTOMEAE.

Sporidia continuous, brown.	- - - -	<i>Ceratostoma.</i>
Sporidia continuous, hyaline.	- - - -	<i>Ceratostomella.</i>
Sporidia elliptical, uniseptate, brownish.	- - - -	<i>Rhyncostoma.</i>
Sporidia uniseptate, hyaline.	- - - -	<i>Lentomita.</i>
Sporidia elongated, pluriseptate, sub-hyaline or brownish.	- - - -	<i>Ceratosphaeria.</i>
Sporidia filiform, 2-or more-septate, hyaline.		<i>Ophioceras.</i>
Sporidia fusiform, hyaline, or subhyaline.		<i>Ramphoria.</i>
Perithecia subulate, swollen below the tip, sporidia brownish, continuous.	- - - -	<i>Hypsotheca.</i>

AMPHISPHAERIEAE.

A *Perithecia* not collapsing.

Sporidia elliptical, or oblong, uniseptate,
brown. - - - *Amphisphaeria*.

Sporidia oblong or fusoid, 3-or more-septate,
brown. - - - *Trematosphaeria*.

Sporidia subelliptical, uniseptate. brown, with a
snout-like (often 1-3-septate) prolongation
at each end. - - - *Caryospora*.

Sporidia 3-septate, separating in the middle, brown. *Ohleria*.

B *Perithecia* often collapsing

Sporidia 2-or more-septate, hyaline. - *Winteria*.

Sporidia muriform, brown. - *Teichospora*.

LOPHIOSTOMEAE.

Sporidia oblong or subfusoid, 1-multiseptate, hyaline
or brown. - - - *Lophiostoma*.

Sporidia ovate or oblong, brown, muriform. - *Lophidium*.

Sporidia vermicular or filiform, septate, subhyaline. *Lophionema*.

CUCURBITARIEAE.

A. *Perithecia* mostly cespitose.

Sporidia muriform, brown. - *Cucurbitaria*.

Sporidia continuous, short cylindrical, hyaline. *Nitschkia*.

Sporidia continuous ovoid, elliptical, or oblong,
hyaline. - - - *Wallrothiella*.

Sporidia continuous oblong or allantoid, subhyaline,
more than 8 in an ascus. - *Fracchiacea*.

Sporidia oblong-elliptical, uniseptate, subhyaline. *Gibbera*.

B. *Perithecia* gregarious.

Sporidia short-cylindrical, continuous, hyaline. *Coelosphaeria*.

Sporidia elliptical or fusoid, uniseptate, brown or
yellowish-brown, lignicolous. - *Otthia*.

Sporidia subelliptical, uniseptate, brown. *Parodiella*.

Sporidia subfusoid, 3-septate, brownish. - *Montagnella*.

Perithecia subelliptical, uniseptate, brown. *Parodiella*.

SPHAERELLEAE.

A. Paraphyses present.

Sporidia elliptical, continuous, hyaline. - *Physalospora*.

Sporidia subelliptical, yellowish-hyaline, unequally,
uniseptate. - - - *Stigmatea*.

Sporidia piriform, uniseptate near the lower (narrow) end, hyaline. - - *Apiospora.*

Sporidia ovoid, ellipsoid or suboblong, uniseptate in the middle. - - *Didymella.*

B. Paraphyses wanting.

Sporidia elliptical, continuous, hyaline. *Laestadia.*

Sporidia elliptical, continuous, 2-nucleate, hyaline. *Phomatospora.*

Sporidia elliptical, uniseptate, hyaline. *Sphaerella.*

Sporidia continuous, brown. - *Mulerella.*

Sporidia inequilateral, large, uniseptate, hyaline, becoming darker. - - *Lizonia.*

Sporidia 1-3-septate, hyaline. - *Pharcidia.*

Sporidia 1-3-septate, brown. - *Tichothecium.*

Sporidia cylindrical or fusoid, 3-multiseptate, hyaline. - *Sphaerulina.*

GNOMONIEAE.

Asci 8-spored, sporidia elliptical, etc., continuous or uniseptate, hyaline. - *Gnomonia.*

Asci polysporous, sporidia oblong or fusoid, continuous, subhyaline. - *Ditopella.*

PLEOSPOREAE.

Sporidia ovoid-oblong, uniseptate, brown. *Didymosphaeria.*

Sporidia elliptical, muriform, brown. - *Pleospora.*

Sporidia as in *Pleospora*, but perithecia hairy or bristly. - *Pyrenophora.*

Sporidia fusoid, 1-many-septate, yellow or brown. *Leptosphaeria.*

Sporidia as in *Leptosphaeria*, but hyaline. *Metasphaeria.*

Sporidia as in *Leptosphaeria* but appendiculate at each end. - *Ceriospora.*

Sporidia elongated, appendiculate, multiseptate, hyaline. - *Saccardoella.*

Sporidia large, muriform, only one or two in an ascus. *Julella.*

Sporidia filiform, guttulate or septate, subhyaline. *Ophiobolus.*

MASSARIEAE.

Sporidia large, with a hyaline envelope, 1-several-septate, mostly brown. - *Massaria.*

Sporidia constantly uniseptate, otherwise as in *Massaria.* - *Massariella.*

- Sporidia more or less distinctly muriform, brown. *Pleomassaria*.
 Sporidia as in *Massariella*, but perithecia
 circinate. *Massariovalsa*.

CLYPEOSPHAERIEAE.

- Sporidia ovate-oblong, continuous, subhyaline. *Trabutia*.
 Sporidia ovoid or oblong continuous, brown. *Anthostomella*.
 Sporidia oblong cylindrical, 1-3-septate, brown. *Clypeosphaeria*.
 Sporidia fusoid, 1-3-septate, hyaline. *Hyospila*.
 Sporidia filiform, hyaline. *Linospora*.
 Sporidia short fusoid, muriform (foliicolous.) *Isothea*.
 Sporidia subelliptical, muriform, hyaline or brown
 (lignicolous) *Thyridium*.

VALSEAE.

A. Sporidia allantoid, continuous, hyaline or subhyaline, asci mostly 8-spored.

- * *Stroma convex or conical, sunk in the matrix with only the apex erumpent.*

- Ostiola smooth, sporidia hyaline. *Valsa*.
 Ostiola sulcate, sporidia yellowish. *Eutypella*.
 Perithecia circinate, asci polysporous. *Valsella*.

** *Stroma effused.*

- Perithecia scattered in an effused or subpulvinate
 stroma, sporidia hyaline. *Eutypa*.
 Perithecia scattered or subcircinate in a (mostly)
 cortical stroma, sporidia yellowish. *Cryptovalsa*.

*** *Stroma wanting.*

- Perithecia circinate on the surface of the inner
 bark. *Calosphaeria*.
 Perithecia as in *Calosphaeria*, asci polysporous. *Coronophora*.
 Perithecia and sporidia as in *Eutypa*, but stroma
 none. *Cryptosphaeria*.

B. Sporidia 1-or more-septate.

* *Stroma convex, conical or effused.*

- Sporidia uniseptate, hyaline. *Diaporthe*.

** *Stroma wanting.*

- Perithecia buried, subcircinate or scattered, sporidia
 1-3-septate, brown. *Endoxyla*.

MELANCONIDEAE.

- Sporidia uniseptate, hyaline or colored. *Melanconis*.

Sporidia continuous, or 2 or more septate or
pseudoseptate, hyaline. - *Cryptospora.*

Sporidia muriform, brown. - *Fenestella.*

MELOGRAMMEEAE.

Sporidia continuous, hyaline. - *Botryosphaeria.*

Sporidia ovoid-oblong, uniseptate, hyaline,
paraphyses present. - *Myrmaecium.*

Sporidia broad-fusoid, or elliptical, hyaline,
paraphyses none. - *Endothia.*

Sporidia uniseptate, brown. - *Valsaria.*

Sporidia fusoid or cylindrical; with several septa. *Melogramma.*

DIATRYPEAE.

Sporidia allantoid, yellowish, asci 8-spored. *Diatrype.*

Sporidia allantoid, yellowish, asci polysporous. *Diatrypella.*

Sporidia oblong or elliptical, continuous, brown. *Anthostoma.*

SUBORDER DOTHIDEACEAE.

Sporidia continuous, hyaline or yellowish, stroma
sclerotoid. - *Mazzantia.*

Sporidia continuous, hyaline or yellowish, stroma not
sclerotoid. *Phyllachora.*

Sporidia uniseptate, hyaline or yellowish, stroma
thin, effused or discoid. - *Dothidella.*

Sporidia uniseptate, hyaline or yellowish, stroma
tubercular or pulvinate. - *Dothidea.*

Sporidia 3-septate, brown. - *Homostegia.*

Sporidia 3-5-septate, yellowish. - *Rhopoglyphus.*

Sporidia filiform, continuous or nucleate. - *Ophiodothis.*

Sporidia muriform, brown. - *Curreya.*

Sporidia muriform, yellowish-hyaline. - *Myriangium.*

XYLARIAEAE.

Stroma concave, or convex or subeffused. *Nummularia.*

Stroma globose, pulvinate or subeffused. - *Hypoxydon.*

Stroma superficial, crustaceous, perithecia large. *Ustulina.*

Stroma vertical, divided by a horizontal layer. *Camillea.*

Stroma dendroid, mostly white within. - *Xylaria.*

Stroma globose, concentrically zoned within. *Daldinia.*

Stroma clavate, becoming cup-shaped or discoid. *Poronia.*

Stroma superficial, effused, perithecia immersed with elongated necks.

Bolinia.

SUBORDER HYSTERIACEAE.

A. *Sporidia* hyaline.

* *Sporidia* continuous.

Perithecia subcarbonaceous, flattened or convex, minute.

Schizothyrium.

** *Sporidia* uniseptate.

Perithecia membranaceous, minute, simple or branched, flattened.

Aylographum.

Perithecia carbonaceous, simple or obscurely branched.

Glonium.

Perithecia stellate.

Actidium.

Perithecia subcarnose.

Angelina.

*** *Sporidia* 3-pluriseptate.

Perithecia carbonaceous.

Gloniella.

Perithecia subcoriaceous.

Dichaena.

**** *Sporidia* muriform.

Perithecia carbonaceous

(*Gloniopsis*.)

***** *Sporidia* filiform.

(a) *Sporidia* much shorter than the ascus.

Perithecia membranaceous, flattened.

Hypoderma.

(b) *Sporidia* nearly as long as the ascus.

Perithecia elongated, flattened, membranaceous. *Lophodermium*.

Perithecia elongated, conchiform, subcarbonaceous.

Lophium.

Perithecia elongated, coriaceous-subcarnose.

Clithris.

Perithecia subsphaeroid.

Ostropa.

B. *Sporidia* brown.

* *Sporidia* uniseptate.

Perithecia coriaceous, widely dehiscent.

Tryblidium.

Perithecia elongated, coriaceous.

(*Lembosia*.)

** *Sporidia* 3-pluriseptate.

Perithecia carbonaceous.

Hysterium.

Perithecia coriaceous.

(*Tryblidiella*.)

Perithecia conchiform.

Mytilidium.

Perithecia subcarbonaceous, striate.

Ostreion.

*** *Sporidia* muriform.

Perithecia carbonaceous.

Hysterographium.